

In Support of Price Stability

*Statement by
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EDITOR'S NOTE: Rep. Stephen Neal of North Carolina has introduced House Joint Resolution 409, directing the Federal Reserve to reduce inflation to zero within five years and maintain price stability thereafter. On February 6, Mr. Black and three other Federal Reserve Bank presidents testified in support of the Resolution before the Subcommittee on Domestic Monetary Policy of the U.S. House of Representatives Committee on Banking, Finance, and Urban Affairs. Following is Mr. Black's testimony.

Mr. Chairman, I am delighted to be here today to testify in favor of H.J. Resolution 409, which would instruct the Federal Reserve to achieve price stability within five years. I believe passage of the Resolution by Congress would significantly improve the overall framework in which monetary policy is conducted and increase our chances of achieving price stability and steady economic growth in the years ahead.

I have been associated with the Federal Reserve Bank of Richmond for over thirty-five years and have attended at least some of the meetings of the Federal Open Market Committee for about thirty of those years. For seventeen years, I have been the Richmond Bank's official representative at those meetings. My work with the Committee has convinced me that price stability should be the primary long-run objective for monetary policy and that the Federal Reserve can make its greatest contribution to the economic health of our country through pursuit of that objective.

The Case for Making Price Stability the Overriding Objective of Monetary Policy

The case for making price stability the primary objective of monetary policy is a compelling one, Mr. Chairman. First, inflation imposes pervasive costs on our society, especially if it is not anticipated. Inflation distorts the signals that prices send in our market economy, which leads to serious inefficiencies in the allocation of resources. These distortions and inefficiencies reduce the long-run rate of growth of the economy below its full potential. In a similar way, inflation disrupts the functioning of our financial markets and on balance discourages saving and investment. Moreover, its volatility increases the

risk associated with particular business decisions. Finally, inflation redistributes income and wealth in arbitrary ways, which creates dissatisfaction within the social and economic groups whose incomes and wealth are adversely affected.

Although many of these costs are hard to measure, there is good reason to believe that they are significant in the aggregate. First, there is a negative correlation between inflation and long-term economic growth across different countries. Second, our citizens have repeatedly made it clear that they strongly dislike inflation. Finally, persistently high rates of inflation in peacetime in the U.S. have frequently been associated with relatively low rates of real economic growth.

Inflation is still a major problem today, despite the belief in some quarters that it has been conquered. It disturbs me to hear people talk as if inflation were dead when we have been experiencing an underlying inflation rate in the neighborhood of 4 to 4½ percent. The current rate is clearly an improvement over the very high rates prevailing in the late 1970s and early 1980s, but it is not a particularly low rate when judged by longer-run historical standards. As you may know, the consumer price index rose at an average annual rate of 1.5 percent between the end of the Korean War and 1965. What is now considered by some to be moderate inflation was regarded as an intolerable condition only a few years ago. President Nixon imposed a comprehensive price and wage control program on the economy in August 1971 when the rate of inflation was even lower than the rates of recent years.

Moreover—and I believe this is one of the critical issues addressed by the Resolution—inflation may well reaccelerate in the absence of a clear signal to

the public that Congress fully supports the Federal Reserve's commitment to reduce it further. As we all know, the System is under constant pressure to "do something" with monetary policy in the short run to improve the economy's performance or deal with some other current problem. In the past such pressures have, at times, led the System to take actions that have eventually contributed to an acceleration of inflation. There is obviously a risk that history will repeat itself unless an effort is made to reduce these pressures.

I say this even though I believe the present members of the Federal Open Market Committee as a group are especially strongly committed to fighting inflation and the public still has vivid memories of the rampant inflation of the late 1970s and early 1980s. The composition of the Federal Open Market Committee will change, and the memories of double-digit inflation will gradually fade, but the pressures on the Federal Reserve to make its monetary policy decisions on the basis of short-run considerations without adequate regard for the long-run inflationary consequences of these decisions will surely persist in the years ahead.

One problem the Federal Reserve faces in conducting monetary policy currently, in my view, is that our mandate is too broad. A clear and attainable objective is a necessary condition for the success of any policy strategy. Unfortunately, current law does not provide the Federal Reserve with such an objective. Instead, our current mandate instructs us to consider a wide range of economic conditions in carrying out monetary policy. Specifically, Section 2A of the Federal Reserve Act requires the System to take account of ". . . past and prospective developments in employment, unemployment, production, investment, real income, productivity, international trade and payments, and prices. . . ." in setting its annual objectives for the growth of the monetary and credit aggregates.

A mandate that instructs the Federal Reserve to consider such a broad range of economic conditions may not be the strongest foundation for an effective strategy for monetary policy. Faced with the requirement to take account of all these conditions, policy choices necessarily are made in a discretionary manner which gives substantial weight to current economic and financial conditions and prospects for the near-term future. This approach to policy fosters the notion that the Fed can fine-tune the economy even though both actual experience and much of the most important recent research in macroeconomics argue

persuasively to the contrary. It also encourages special interest groups to try to pressure the System to pursue the particular goals they consider important. These circumstances tend to impart an inflationary bias to monetary policy.

The Resolution would help us overcome these problems by specifying clearly a single, feasible objective for monetary policy and instructing the Federal Reserve to achieve that objective. Price stability is obviously an appropriate objective for any central bank. Further, it is a feasible objective since there is no question that the System can achieve price stability over the long run by controlling the rate of growth of the monetary aggregates.

Moreover, I believe price stability is really the only feasible objective for monetary policy. Some might argue that increasing long-run economic growth or fine-tuning economic activity in the short run are alternative objectives. Most economists now agree, however, that the long-run rate of real economic growth is determined by nonmonetary factors such as population growth, increases in productivity, and the rate of saving and investment. Accordingly, most conclude that expansionary monetary policies can raise the growth rate only temporarily, if at all. There is also a growing consensus that the System could make its greatest contribution to long-run economic growth by fostering price stability so that economic decisions could be made on the basis of reliable information on both current and future prices.

There also is very little evidence that the Federal Reserve can use monetary policy to fine-tune the economy in the short run. Monetary policy affects the economy with both long and variable lags. These lags, in conjunction with the inability of economists to forecast future economic conditions with much confidence, make it very difficult for the System to determine what policy actions it should take today to produce a particular result at some point in the near-term future. Moreover, as I indicated earlier, focusing too narrowly on relatively short-run economic conditions tends to give monetary policy an inflationary bias. This is not to say that the Federal Reserve should ignore extraordinary events such as the stock market crash in October 1987. But, as I believe we demonstrated in late 1987, the System can react to such shocks to the economy without weakening its long-run commitment to price stability.

One might argue, of course, that price stability has always been one of the System's primary objectives

and therefore that the Resolution is not needed since it simply instructs the Federal Reserve to seek an objective it is already pursuing. I strongly disagree with this view. Despite our best intentions, prices have not yet stabilized, as evidenced by the fourfold increase in the price level since 1964. Moreover, surveys of expected inflation consistently indicate that the public does not expect the Federal Reserve to make much further progress in reducing inflation in the future, let alone achieve price stability. Confidence in the System's commitment to price stability suffers because its policy decisions are necessarily influenced by numerous other considerations. Passage of the Resolution would send an unambiguous signal to the public and the financial markets that price stability is the overriding goal of the Federal Reserve. The credibility of the System's efforts to reduce inflation would therefore rise. This increased credibility would, in turn, lower the public's expectations of future inflation because these expectations would be less influenced by the relatively high inflation rates in the recent past. Further, lower expected inflation would tend to reduce the costs of achieving price stability in terms of any temporary loss of output and employment. This reduction would occur in part because producers, when faced with monetary restraint, would be more inclined to reduce prices, or raise them at a slower pace, and less likely to reduce output and employment. Similarly, workers would be more inclined to restrain their wage demands. It is worth emphasizing that a truly clear and unambiguous Congressional mandate to eliminate inflation would play a vital role in this process.

Responses to Some Likely Arguments Against the Resolution

The major arguments that will be made against the Resolution are fairly predictable, and I would like to say a few words about them. One argument obviously concerns the potential transitional cost of implementing the Resolution. Specifically, some will argue that trying to eliminate inflation altogether would risk a recession. It is impossible to predict the future, so we cannot dismiss this argument out of hand. In evaluating the argument, however, we should not simply extrapolate from our experience in dealing with past inflationary episodes such as the ones in 1973-74 and 1979-81. In those periods, the System acted forcefully in a crisis atmosphere to reduce the rate of inflation over a short period of time and economic activity contracted sharply. In contrast, Resolution 409 would require a gradual reduction in inflation over a relatively long period of time

following an extended period in which substantial progress has already been made. As I indicated earlier, there is good reason to believe that passage of the Resolution would enable us to achieve such a reduction in inflation with relatively small costs to the economy. Moreover, it is very important to weigh any short-run costs of achieving price stability as provided by the Resolution against the longer-run costs of not achieving it. These latter costs could be particularly great if, at some future time, the Federal Reserve were forced to follow policies resulting in a recession in order to rein in an accelerating rate of inflation.

A second possible argument against the Resolution is that it would prevent the Federal Reserve from reacting appropriately to unanticipated "shocks" to the economy, such as the stock market crash in October 1987. As I suggested a moment ago, however, there is simply no reason why shocks that may affect the System's actions in the short-run should prevent us from achieving price stability over a period as long as five years. This would be especially true if the policy had credibility in the eyes of the general public and financial market participants, as I believe it would if the Resolution were enacted. In evaluating this argument, it is also important to distinguish between temporary adjustments in our policy instruments or intermediate targets and changes in our ultimate policy objectives. Adjustments in our policy instruments or intermediate targets do not require us to alter our long-run objectives. Following the stock market crash in 1987, for example, the System temporarily supplied additional reserves to meet the greater demand for liquidity induced by the crash, but this action did not change our longer-run policy goals.

Implementation of the Resolution

A final question regarding the Resolution concerns how it would be implemented. I realize the Resolution leaves this matter to the Federal Reserve. Nevertheless, in evaluating the Resolution I think it is important to appreciate that from a technical standpoint the System is quite capable of achieving price stability over a five-year period and that pursuing this objective would require at most minor changes in our current procedures. Recent research both at the Board of Governors and at the Richmond Reserve Bank has provided strong evidence that the public's total demand for balances included in the monetary aggregate M2 has remained stable since the early 1950s, despite the substantial amount of financial

innovation in recent years. This innovation has affected the behavior of the *components* of M2, but it has had little effect on the behavior of *total* M2. Consequently, the velocity of M2, which is simply current-dollar GNP divided by M2, has not exhibited any trend either upward or downward in this period. This constancy in the velocity of M2 over time implies that the System could bring the trend rate of inflation to zero within a five-year period by gradually lowering the trend rate of growth of M2 to the longer-run potential rate of growth of real GNP.

It is worth noting that implementing the Resolution would not require any major change in the Federal Reserve's operating procedures, since we already set annual targets for M2 and announce them to Congress. Under the Resolution we would simply have to reduce these targets gradually and persistently until they declined to the trend rate of growth of real GNP, which is probably somewhere in the neighborhood of 2½ to 3 percent a year.

One fairly straightforward change in our procedures that I would favor would be to establish multi-year targets for M2 rather than the one-year targets we currently set. Under the current procedure, growth in M2 above or below the target for a given year is effectively forgiven at the end of the year. Thus, the base for the next year's target is the *actual* level of M2 at the end of the current year rather than the targeted level. As a result of this "base drift" in M2, the price level can drift up or down over time even though the individual annual M2 targets may be consistent with a zero rate of inflation. Consequently, I believe the likelihood of achieving true long-run price stability would be increased if we eliminated base drift by setting a multi-year path for M2.

This last point raises a corresponding point regarding how, in practice, the System would pursue the price stability objective mandated by the Resolu-

tion. One approach would be to seek to hold the price level at a particular permanent level on average over the long run. A second approach would be to try to maintain the price level at its current level at any point in time irrespective of any past movements in the level. Under the first approach, the System would act to bring prices back to their permanent target level if they moved away from that level in response, for example, to an unanticipated change in M2 velocity. Under the second approach, the System would not attempt to offset the one-time effects of such shocks on the price level, but would simply try to hold the price level at its then current level. We prefer the first approach, although we recognize that it might take considerable time to reattain the permanent objective in some instances in order to avoid significant transitory disruptions to real economic activity. Under the second approach, the price level would almost certainly change permanently from time to time, and it is not unreasonable to expect that political and other pressures would tend to bias these movements upward.

Conclusion

In conclusion, Mr. Chairman, I strongly support Resolution 409 and its objective of achieving price stability in five years. The costs of the persistent inflation in this country are substantial. Without a significant change in the framework in which monetary policy decisions are made, inflation is likely to continue to be a serious problem in the years ahead, and it is entirely possible that the rate of inflation could reaccelerate. Resolution 409 goes to the heart of the policy problem, which stems to a large extent from the Federal Reserve's overly broad current mandate. Price stability can and should be the overriding objective of monetary policy. Achieving and maintaining price stability is the best contribution monetary policy can make to the successful performance of the economy over the long run.

The Federal Reserve Bank of Richmond: Governor Seay and the Issues of the Early Years

*James Parthemos**

The choice of Richmond as a Federal Reserve city was greeted with jubilation by the civic leaders of the old capital of the Confederacy. For three months they had waged a carefully orchestrated campaign to convince the Reserve Bank Organization Committee, established to select the sites for the new Reserve Banks, of the superiority of Richmond's claims over those of such competing cities as Washington, Baltimore, Charlotte, and Columbia. The chief architect of that campaign was George J. Seay.

For Seay, the choice of Richmond, announced on April 2, 1914, was a great personal triumph. He had worked tirelessly in the campaign to bring the Reserve Bank to Richmond. The city's petition to the organization committee and its supporting brief were largely his work. He had made the principal oral presentation before the committee in January 1914 and had prepared the revised written brief presented to the committee in the following month. With other Richmond leaders, he had toured the Carolinas in an effort to mobilize support among bankers and business leaders in those states. He had prepared an extensive brief countering efforts by Baltimore leaders to reverse the choice of Richmond. Seay's contributions were recognized and lauded, even among the leaders of rival campaigns. The compelling arguments presented in his brief to the organization committee were widely credited as the crucial factor in the decision to locate the Reserve Bank in Richmond.

George J. Seay was born in Petersburg, Virginia, in March 1862. He was educated in the public schools of Petersburg, winning first honors on graduation from high school. Seay had no college training. At 17, he accepted employment as a runner at the Petersburg Savings and Insurance Company. His talents were quickly recognized, and he rose rapidly

in the organization. He served that institution for 24 years, the last nine as cashier. In 1902, he was elected president of the Virginia Bankers Association. He resigned from the Petersburg institution in 1903 to become a partner in the Richmond banking house of Scott and Stringfellow. He remained in that post until 1909, leaving in that year to devote himself to independent study of banking reform and railroad finance, subjects that had commanded his interest for most of his adult life.

Seay was especially interested in the movement for banking reform at the turn of the century and had followed closely the various reform proposals. He published a pamphlet on the Fowler and Aldrich bills and was said to have "devoted many months' study to the Federal Reserve Act during its progress in Congress." While the record indicates that he retired in 1909, at the age of 47, it is likely that he maintained some connection with one or more local businesses between 1909 and 1913, perhaps in a consultative capacity. On December 28, 1913, he was retained by the Committee on Locating a Federal Reserve Bank in Richmond to put together a case for the city's petition to the organization committee.

Following the choice of Richmond as a site for one of the Reserve Banks, Seay, amid plaudits for his contributions, was widely regarded as a likely candidate for a high post in the new institution. He was recommended by a former employer as a man ". . . of absolute integrity and high character, perfect habits and of great industry and energy, with an efficiency, capacity and ability in banking matters which I have never seen surpassed, and rarely equalled in many men of his age." This employer deemed him "eminently qualified" for the position of manager of the Reserve Bank.

The Richmond Reserve Bank was incorporated on May 18, 1914. On the same day, representatives of some 210 banks from the Fifth District met in Richmond to discuss procedures for electing three Class A directors, representing the banking community, and three Class B directors, representing industry,

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commerce, and agriculture. This gathering was without authority to elect directors, but it nevertheless proceeded to offer a preferred slate of candidates which included Seay's name as a Class B director. This slate was later elected through the elaborate election procedure prescribed in the Federal Reserve Act. While in January Seay had indicated to the organization committee that he had "no business or financial connection," in executing the oath of office as director, in August he described himself as "Vice Pres't U.S. Tobacco Co. and RR and Financial Statistician and Expert."

Selected with Seay in the Class B category were David R. Coker of Hartsville, South Carolina, and James F. Oyster of Washington, D.C. The Class A directors were Waldo Newcomer of Baltimore, J. F. Bruton of Wilson, North Carolina, and Edwin Mann of Bluefield, West Virginia. Three Class C directors, representing the general interest, were appointed later by the Federal Reserve Board. They were William Ingle of Baltimore, designated Chairman and Federal Reserve Agent, James A. Moncure of Richmond, designated Deputy Chairman and Deputy Federal Reserve Agent, and M.F.H. Gouveneur of Wilmington, North Carolina. At its first meeting, on October 5, the board of directors elected Seay to be the Bank's first governor, as the chief executive officer was then called. It also named him the Fifth District's representative to the Federal Advisory Council.

Seay served as governor of the Richmond Bank until 1936. His tenure covers the Federal Reserve System's formative years. This formative period embraces two distinct chapters, the first dominated by World War I and the second by the vicissitudes of the world economy in the decade following. The second chapter ended unhappily, with the great stock market crash of 1929 followed by a collapse of the banking system that led to a restructuring of the Federal Reserve.

The early years—the period from 1914 to the end of 1929—posed a number of key issues the resolution of which was important in the development of effective monetary policy mechanisms as well as an efficient payments system. First, there was the basic issue of the distribution of authority between the Reserve Banks and the Reserve Board. This issue remained in abeyance during the war years when the Banks were preoccupied with war financing and were largely under Treasury domination. Second, there were issues of credit policy involving the forging of effective policy tools and their application to the

problems of the time. Third, there were issues and problems involved in a broad effort to improve the nation's payments arrangements, especially in the area of check collection. The Richmond Bank, under Seay, played an important role in the System's efforts to confront these issues constructively.

Financing World War I

The entry of the United States into the First World War in April 1917 presented a special challenge to the Reserve Banks. As fiscal agents of the federal government, they were called on to serve the Treasury in planning and implementing a program to finance the war effort with minimal disturbance to the nation's financial markets. Seay and the other Reserve Bank governors participated in the planning sessions.

The Banks' services to the Treasury in this regard began in March, just before the country's entry into the war. At that time the Banks distributed for the Treasury \$50 million of certificates of indebtedness issued in anticipation of income tax receipts due in June. The Richmond Bank was allotted \$2 million of this issue, which it placed promptly.

Then followed the first of five multi-billion-dollar bond issues aggregating more than \$24 billion, an unprecedented magnitude of borrowing. The so-called First Liberty Loan, announced on May 14, was a \$2-billion, 30-year issue dated June 15, with interest at 3½ percent. An elaborate effort was mounted to market this issue. Secretary McAdoo led the effort, touring the country in what he later described as a ". . . great movement that vibrated with energy and patriotism and swept the country from coast to coast in the greatest bond-selling campaign ever launched by any nation."

The marketing effort centered heavily on the Reserve Banks. In accordance with detailed plans provided by the Treasury, each Bank established a closely structured, Districtwide network for promoting sales. The Reserve Bank governors were designated chairmen of District committees made up, in turn, of the chairmen of state committees, who, in their turn, appointed county and local committees. In the Richmond District, a Liberty Loan bureau was set up in every bank, and each was advised of its "proportionate amount of the loan, based on its total resources." An executive staff, reporting directly to Governor Seay and including teams of field directors, coordinated the effort. Seay considered the

Liberty Loan drives to be his most important duty and threw himself wholeheartedly into each campaign.

The premise of the financing program was that the war should be financed to the extent possible by the real savings of the public. Bank credit, and in particular Reserve Bank credit, was to be relied on only residually with every effort made to hold the residual to a minimum, in keeping with the prevailing view in banking circles that bank credit should be directed primarily at financing production and accommodating trade, not at accommodating government. Hence a large promotional effort was directed at placing the bonds with the nonbank public.

Seay approached the financing task with a fervor bordering on the religious and worked untiringly to match or excel the best efforts of the other Reserve Banks. Writing in 1923, he noted the District's "remarkable record" in 1917, 1918, and 1919, when the actual purchases of all types of war securities by the people of the Fifth District reached "the stupendous aggregate of \$1.1 billion!" It was his "deliberate and mature judgement that but for the existence of the Federal Reserve System . . . Germany would have won." He also believed that "the bringing of the Federal Reserve System into being and enabling it to perform such a signal service for civilization was nothing less than an act of Providence."

As the apparatus of wartime controls expanded, the Reserve Banks were given a variety of additional duties in the areas of foreign exchange trading, gold export controls, and surveillance over the capital issues of corporations and municipalities. Much of the added work fell directly on Seay, who was already heavily preoccupied with perfecting the District's organization for handling the Liberty Loans. The work burden contributed to a breakdown in his health in the autumn of 1918. At the height of the influenza outbreak of that year, he fell dangerously ill and was bedridden for more than a month. Subsequently, at the insistence of the Bank's directors, he underwent a convalescence of several months before returning to work.

For the five drives, subscriptions nationwide totaled just over \$24 billion. The slightly more than \$1 billion handled by the Richmond Bank thus accounted for roughly 4 percent of the total. At that time, the nation's financial wealth was heavily concentrated in the large centers of the Northeast. The New York, Boston, and Philadelphia Districts accounted for

nearly half the total subscriptions, with Chicago and Cleveland accounting for an additional 25 percent. The Richmond District stood seventh in subscriptions, behind San Francisco.

Seay and the Richmond Bank won plaudits throughout the District for their efforts. The work of all the Banks was widely appreciated and the System emerged from the war with great prestige. It had won its spurs, so to speak, and was widely accepted as the institution at the heart of the nation's financial system.

The Reserve Banks and the Reserve Board

1. The Issue of Authority A major issue in the early years of the System was the question of the division of authority between the Reserve Banks and the Federal Reserve Board. The question was particularly contentious until the banking acts of the middle 1930s buttressed the authority of the Reserve Board in several areas. For most of the decade of the 1920s, however, the Banks offered a distinct resistance to the Board's dictates and relations were marked by a continuing tension.

By common agreement, the new System, when launched, was a regional arrangement envisaging substantial autonomy for the individual Reserve Banks. But the lines were not sharply drawn. Broad supervisory and coordinating authority was vested in the Reserve Board by the Federal Reserve Act. The view was widely held, however, that the Board's role should be constraining and coordinating, not coercive, leaving the Banks latitude for independent action to cope with credit and payments-system problems peculiar to their respective Districts. There was a general reluctance to describe the System as a "central bank," as though the term might undermine the emphasis on regionalism.

The Richmond Bank's directors sought from the beginning to reach an understanding on the scope of their authority. They sent a delegation to the Board early in 1915 to discuss the matter but received little satisfaction. Immediately afterward, a sharp dispute with the Reserve Board erupted over the issue of Governor Seay's salary. The Richmond directors had set his annual salary at \$15,000 only to have the Reserve Board reduce it to \$10,000. There followed a sharp exchange of letters in which the Board rebuked the Bank's directors and peremptorily asserted its right to approve salaries at all levels. The directors acquiesced, but the episode left scars.

The entry of the United States into the World War had an important effect on the distribution of authority in the System. Until the end of 1919, the exigencies of Treasury borrowing for the war effort subordinated both the Reserve Board and the Reserve Banks to the Treasury's mandate. But the practical knowledge and experience that the Treasury required in its debt management and financing operations were heavily concentrated in the Reserve Banks, especially the New York Bank. As a result, Treasury officials tended increasingly to work directly through the Reserve Bank governors and to bypass the Reserve Board. Governor Harding of the Boston Bank, who had served earlier as a member of the Reserve Board, once remarked that for this reason members of the Reserve Board frequently felt left out of important deliberations.

As matters developed in the 1920s, the governors of the Reserve Banks, acting through conferences that met semiannually, were able to establish themselves as a major factor in shaping System policies and practices. At these conferences, the governors discussed and analyzed in detail the full range of problems confronting the System. The discussions were comprehensive, frequently lasting four days or more and including sessions with the Reserve Board and with Treasury officials. Standing committees kept major issues, including credit policy and payments-system problems, under continuing study.

Compared with the members of the Reserve Board, the Reserve Bank governors were much closer to the day-to-day problems in the banking system and in credit markets. For the most part, they were seasoned bankers with hands-on experience of the technical details of both the payments system and credit operations of commercial banks. This gave the Conference of Governors an important advantage in the give-and-take that determined the degree of autonomy of the Reserve Banks. Under the leadership of Benjamin Strong, governor of the New York Reserve Bank, the Conference of Governors became the dominant forum in the System in the 1920s, with Strong emerging as the leading figure in the System.

2. *Seay's Views* Seay was a major contributor to the deliberations of the Conference. He was chairman of the committee on discount rate policy and also chaired a special advisory committee to the Federal Reserve Board on legislation.

Like most of his colleagues, Seay had an aversion to the term "central bank." He was a vigorous

defender of regionalism and favored a high degree of autonomy for the Reserve Banks. He argued, in particular, that the Banks, as the best judges of credit conditions in their respective Districts, deserved broad latitude in setting discount rates. Because of what he perceived as wide disparities of basic credit conditions among Districts, he opposed requiring uniformity of discount rates. He also insisted on the right of individual Reserve Banks to buy and sell government securities.

Yet Seay was a team player. To him, autonomy defined a relationship between the Reserve Board and the Banks and did not preclude close cooperation among the Banks. He thought that the governors of the Banks should discuss discount rate policy every 60 days and that such discussions should become an important factor in discount rate decisions. He thought that transactions in government securities should be managed with similar cooperation among the Reserve Bank governors and was prepared to limit, though not to deny altogether, independent operations by the Banks.

In other areas of the Reserve Banks' activities, Seay was inclined to favor Systemwide uniformity of practice. This was especially the case for such payments-system functions as check collection and clearing and noncash collections. He sought uniformity of practice in such technical details as the timing of debits and credits to reserve accounts in the course of check-collection operations, the treatment in reserve accounting of coin and currency en route to the Reserve Banks from members, and penalties for reserve deficiencies. Questions involving these and other important details were not definitively settled in the 1920s, and for much of the decade practices differed among the several Districts.

Yet close cooperation among the governors was the general rule. The Conference of Governors, under the leadership of Governor Strong, was protective of the rights of the individual Banks and resistant to broad interpretations of the Reserve Board's authority. Strong's death in October 1928 marked the beginning of a shift of power away from the Banks and toward the Reserve Board, away from regionalism and toward centralization. The stock market crash of 1929 and the banking collapse of the 1930-33 period accelerated that shift. The Banking Acts of 1933 and 1935 ratified it in many respects. For virtually all of the decade of the 1920s, however, the Reserve Banks were able to hold centralization at bay and to realize a high degree of autonomy.

Credit Policy Issues of the 1920s

1. *General Background* The decade of the 1920s presented a variety of challenges to the System. It was, in general, a period of rapid economic growth, fueled by the intensive development of new industries—the automobile, radio, major appliances—and by innovations in the organization of production. Public confidence in the economy's capacity to generate high levels of prosperity ran high and translated soon into a strong speculative mood that constituted an important element in the backdrop against which the Reserve Banks operated. Prosperity was by no means comprehensive, however. The agricultural sector remained depressed for the entire decade. Large numbers of bank failures occurred almost every year. Serious problems existed, too, in the international area. A large fraction of the world's monetary gold had lodged in this country and its orderly redistribution became a key condition for the restoration of the international gold standard, a prime objective of U.S. policy. The vexatious issue of war reparations and resurgent economic nationalism in the world at large were also complicating factors.

Early in the decade, the economy slipped into a severe recession for which the System was widely blamed. Milder recessions occurred in 1923-24 and 1927. Combined with the continuing bank failures and widespread farm sector discontent with credit conditions, these interruptions seriously eroded the System's prestige, which reached a low point in the financial disturbances at the end of the decade and in the early 1930s.

2. *Seay's Approach to Credit Policy* During the war years, credit policy was dominated by the U.S. Treasury. The discount rate was determined by the interest rate the Treasury placed on its offerings of securities. Moreover, to facilitate the Treasury's financings, the Reserve Banks offered preferential rates on their loans when government securities were offered as collateral. Such loans were made at rates slightly below the nominal rate on the Liberty bonds, with the result that they rose sharply and, while the Reserve Banks bought only small amounts of government securities, they held large amounts as collateral.

Seay shared a widespread conviction that extensive use of bank credit to finance the war would pose a problem in the war's aftermath. At this stage, he adhered strictly to the commercial loan (or real bills) theory, holding that bank credit should be extended to finance only self-liquidating loans arising

out of the production or distribution of goods. Credit extended for any other purpose, including even the holding of government securities, represented unsound banking practice and multiplied the risk of destabilizing price movements. Seay would purchase only those government bonds that were eligible for use as collateral for national bank notes and this only for the purpose of retiring all such notes in order to leave the issue function exclusively with the Reserve Banks.

Like most of his contemporaries, Seay had no idea of using Federal Reserve credit policies in any countercyclical way. He attributed the burst of rising prices in 1919 and 1920 to the large amounts of government securities in the banking system. Like most of his colleagues, he failed to envisage using open market operations in government securities as a policy instrument. Rather, he felt that the inflation problem had to be met with discount rate action that would force banks to disgorge their government securities. Following the lead of Strong, he recommended and the Richmond directors voted successive increases in the discount rate from 4 percent in late 1919 to 6 percent in mid-1920.

The discount rate increases in this period created some friction in relations with the Treasury, which operated in the market for government securities on a virtually continuing basis at the time. Since discount rate increases tended to hamper its operations, the Treasury favored a program of direct controls on credit expansion administered by the Reserve Banks instead of rate increases. This view also found some support at the Reserve Board. The Reserve Bank governors for the most part felt, as did Strong and Seay, that credit expansion could not be controlled effectively without discount rate action.

When the economy slipped into a sharp recession in the spring of 1920, Seay and the Richmond directors saw little reason to reduce the discount rate promptly. Indeed, the Reserve Banks generally were slow to take any easing action. In the face of a sharp break in commodities prices, rising unemployment, and a severe depression in the farm sector, the System came under criticism by a number of groups, especially by governors and legislators from farm states. Under pressure from the Treasury, the Boston and New York Banks began reducing their discount rates in the spring of 1921. But the Richmond Bank continued to hold out, waiting until November to reduce its rate from 6 percent to 5½ percent and until December to reduce it to 5 percent.

In public addresses, Seay staunchly defended the action of the System in the recession of 1920-21. He argued that the basic problem was the earlier credit inflation caused by sizable holdings of government securities in the banking system. The solution lay in moving these securities out of the banking system and into the hands of the nonbank public. He considered the resulting reduction in bank credit, with its accompanying setback to business, a necessary and inevitable part of the nation's adjustment from a wartime to a peacetime economy.

Seay also argued that an overriding objective of discount rate policy had to be the protection of the gold reserves of the Reserve Banks. At the depth of the 1920-21 recession, the gold reserve ratio of the Richmond Bank had fallen to 34 percent and the ratios of five other Reserve Banks were substantially lower, far below the legal limit of 40 percent. These low reserve ratios were clearly a factor in the tardiness of the Richmond and other Reserve Banks in reducing the discount rate. Seay's view, widely held at the time, was that the System's main concerns had to be the soundness of bank credit, the prevention of financial panics, and the preservation of gold payments. Systematic control of the money supply and positive action to moderate cyclical swings in business were not part of his agenda.

3. Changing Views on Operations in the Government Securities Market The decade was an extended learning experience for the entire System. Seay's views on credit policy underwent significant changes, as did those of most other System personnel involved with policy. Credit policy was discussed at length in the semiannual meetings of the Conference of Governors and in the sessions with the Reserve Board. These discussions, and especially the trenchant observations of Governor Strong, had a major influence on Seay's thinking. There were other influences as well. One was an increasing appreciation of the potential usefulness of systematic operations in the market for government securities. Another was the large contemporaneous swings in gold exports and imports, which tended to upset conventional notions regarding the relationship between the gold reserve ratio and the discount rate.

In any case, in the early 1920s, Seay modified his views on the holding of government securities by the Reserve Banks. At a conference of the governors in March 1923, he observed that a stock of governments held by Reserve Banks would give the System "a better hold upon the market." He joined several

colleagues in noting that sales from such holdings could prove useful in offsetting excessive easing in markets resulting from large gold imports. This adjustment in Seay's attitude was probably influenced in part by the indifferent success of the System's efforts to establish an acceptance market of significant dimensions. Seay had been a strong supporter of such efforts and of arrangements for coordinating operations in acceptance markets.

Among the Banks, attitudes toward investing in government securities were affected by a sharp reduction in their earning assets in the recession of 1920-21. As rediscounts declined and the supply of acceptances diminished, most of the Banks turned to the government securities markets for investments in order to be able to cover costs and pay the dividend provided for by the Federal Reserve Act. Purchases and sales were of sufficient magnitude to interfere with Treasury operations in the market and hence aroused the opposition of the Treasury. The matter was discussed in detail by the Conference in May 1922. At that time, all the Banks except Atlanta and Richmond were buying and holding governments. The governors of all, including Richmond and Atlanta, vigorously defended their right to do so at their discretion.

The Conference was confronted with the problem of reconciling the Treasury's apprehensions and the Reserve Banks' need for earning assets. The Banks were reluctant to accept any restrictions on their right to invest as they deemed necessary. The Treasury for its part insisted that the Banks refrain from purchases and sales whenever it was engaged in market operations.

Under Strong's leadership and after extended discussion, a compromise was reached. Each governor agreed to recommend to his directors that investments in government securities be limited to "... such amount as is required, over a period of time, to meet ... expenses and dividends and necessary reserves." It was also agreed that purchases and sales would be coordinated to avoid interference with the Treasury's activities in the market. To provide this coordination a Committee on Centralized Execution of Purchases and Sales of Government Securities by Federal Reserve Banks was established, composed of the governors of the New York, Boston, Philadelphia, and Chicago Banks. Later the governor of the Cleveland Bank was added.

This committee, under the chairmanship of Governor Strong, operated until March 1923 when, on

orders of the Federal Reserve Board, it was disbanded and replaced by an Open Market Investment Committee. The change, however, made little difference in practice, amounting to little more than a formal response to the Reserve Board's assertion of authority over open market operations. The new committee was composed of the same governors as the old and included no member of the Reserve Board. Like its predecessor, it allowed the Banks a wide latitude of discretion with respect to their participation in the new committee's purchases and sales. Moreover, no limits were placed on the Reserve Banks' transactions in government securities with member banks of their respective Districts.

The arrangements for dealing in government securities were satisfactory to Seay and the Richmond directors. The Richmond Bank had no earnings problem in that period and consequently no need to rely on government securities as a source of earnings. Accordingly, Seay was not as exercised over the issue as some of his counterparts and could take a longer-term view of the implications of the new arrangement. While he was fiercely defensive of the Banks' rights to buy and sell securities, he agreed with Strong that coordination of purchases and sales was highly desirable. He argued that open market operations should not be geared to the earning needs of the Reserve Banks but rather to the "overall credit requirements" of the economy.

Along with many of the other governors, Seay recognized limitations on the practical usefulness of open market operations. Through much of the decade, large operations had to be undertaken to offset gold movements and these often had a major impact on the Committee's portfolio without a corresponding effect on bank credit. Moreover, doubts soon developed that the government securities market was sufficiently large to accommodate the magnitude of operations that domestic and international considerations might require. The Treasury was actively retiring debt over much of the period and, while the Committee operated in acceptances as well, that market contracted in periods of slack business. Recognition of this limiting factor strengthened Seay's conviction that the discount rate had to be the System's chief policy instrument.

4. Coordinating Open Market and Discount Rate Policies The System's move toward systematic open market operations had implications for the manner in which discount rate policy was implemented. These implications were quickly recognized by Seay and others of the governors. In 1924, Governor

Strong noted that the ". . . belief of the Governors has been uniformly for some years past that the operations of the Open Market Committee are designed . . . to exert some influence on matters preliminary to the possible need for changes in discount rates." In the same year, Seay observed that the Committee's purchases led member banks to reduce their borrowings at the discount window and, with diminished dependence on the Reserve Banks, to step up their efforts to make loans. This put downward pressure on loan rates, setting the stage for discount rate reductions.

Seay appreciated the relationship between discount rate policy and gold movements but seemed reluctant to use the discount rate to help restore the international gold standard. When in the late summer of 1927 the Reserve Board, largely at the initiative of Governor Strong, undertook to orchestrate a general reduction in discount rates in order to help Great Britain solidify its return to the gold standard, the Richmond Bank followed, cutting the discount rate from 4 percent to 3½ percent. But Seay expressed sympathy for the position of the Chicago Bank, which refused to reduce its rate, with the result that the Reserve Board fixed it at 3½ percent at that Bank. This action by the Board ran counter to Seay's conviction that the initiative for rate changes should come from the Banks. But Seay appears also to have entertained doubts about giving international considerations precedence over domestic conditions. When this controversial rate action was discussed at the meeting of the Conference of Governors in November, he argued that the rate should be higher to reflect "true market forces instead of international conditions."

The stock market speculation of the later years of the decade troubled Seay. He met with groups of District bankers on several occasions and urged them to limit stock market loans. But to him the problem went beyond stock market loans and was not likely to be solved by moral suasion. The basic problem was excessively easy credit and had to be addressed by effective tightening action on both the open market and discount rate fronts. The excessive ease, he argued, resulted largely from the arbitrary reclassification of demand deposits as time deposits by member banks, which created large amounts of excess reserves.

In March 1928 and again in April, the Richmond directors conveyed to the Open Market Committee their conviction that the Committee should be selling securities. In an April 1929 communication to

the Reserve Board they argued that, from the national standpoint, a strong reason existed for raising the discount rate to 6 percent, noting, however, that Fifth District conditions could not justify such an action. Rather, they believed that the rate should be raised first in the New York District since the stock exchange loan problem was centered there, with the other Banks following later. Actually, the rate at the Richmond Bank, which had been raised in successive steps from 3½ to 5 percent in 1928, was not raised further in 1929.

Payments System Issues

Seay held strong convictions regarding the role of the Reserve Banks in the nation's payments system. In his view, the Reserve Banks should have the exclusive issue privilege and also be the principal managers of the nation's facilities for check-collection and check-clearing operations.

1. The Currency Regarding the currency, Seay considered the Federal Reserve note, anchored to gold to ensure its soundness and to eligible commercial paper to ensure its "elasticity," the ideal currency. He urged that it be allowed to displace all other forms of currency, including legal tender notes and silver certificates. These last two forms he believed to have taken on the character of "reserve money," and, along with gold and gold certificates, should be impounded in the Reserve Banks to support Federal Reserve credit as represented in Federal Reserve notes and member bank reserves. He was unalterably opposed to the issue of national bank notes and urged that they be completely eliminated from the circulation, by legislation if necessary. This stance reflected his continuing aversion to linking the currency to government securities. On the same grounds, he opposed the issue of Federal Reserve Bank notes, which, unlike Federal Reserve notes, were backed only by government securities.

With such views, Seay often found himself at odds with both the Reserve Board and the Treasury. He was critical of a Reserve Board ruling requiring the Reserve Banks to pay out currency in a priority ordering with national bank notes first, followed in order by Federal Reserve Bank notes, silver certificates, legal tender notes, Federal Reserve notes, gold certificates, and gold. He argued that, pending the retirement of national bank notes and Federal Reserve Bank notes, Federal Reserve notes should be third in the priority ordering.

Seay also opposed proposals by the Treasury and the New York Reserve Bank to encourage the circulation of gold certificates in periods of heavy gold imports. He was also cool to a Treasury request for Reserve Bank cooperation in an effort to encourage temporary use by the public of silver dollars to allow the buildup of an inventory of one-dollar bills in the months before the introduction of a newly designed, smaller-sized currency in the summer of 1929.

2. The Collection Function Seay's concern over the quality of the currency was part of a more general interest in improving the efficiency of the country's payments system, which he considered to be a major objective of the Federal Reserve Act. The introduction of the Federal Reserve's leased wire system in 1918 was a welcome innovation to Seay, and he favored Reserve Bank absorption of the cost of wire transfers of funds by member banks.

The major effort to improve the payments system in the 1920s centered on check-collection operations. Few System activities in the 1920s commanded as much attention. One of the first standing committees of the Conference of Governors was the Standing Committee on Collections and Clearings. John S. Walden, Jr., an assistant to Seay and a senior operating officer of the Richmond Bank, served on this committee during the entire decade. Through Walden, Seay contributed to the standing committee's work. He was especially interested in promoting uniformity of procedures and practices among the Banks and in pressing for effective measures to ensure collection at par, that is, with no levy of exchange charges by drawee banks.

The committee devised in this period the system of symbols, printed in the upper right-hand corner of checks, identifying the drawee bank and the Federal Reserve office through which the check would be collected. This system quickly became of inestimable value to banks in sorting and routing checks. The committee also faced the daunting task of working out a satisfactory arrangement for timing debits and credits to the reserve accounts of drawee banks and depositing banks and dealing with the effect on member bank reserves of arrangements that involved other than simultaneous debits and credits. Only after long experimentation was a satisfactory time schedule with a system of deferred credits put in place.

In the war period, as part of the Board's general promotion of membership, the Banks began collect-

ing for member banks such noncash items as notes, drafts, and acceptances. Member banks were quick to avail themselves of this noncash-collection service, which soon became a major activity at all the Reserve Banks. When many of the Reserve Banks were experiencing earnings problems in the early 1920s, sentiment for eliminating the service began to develop. Such sentiment was especially strong in the geographically large Districts of the South and the West—Atlanta, Dallas, Minneapolis, Kansas City, and San Francisco—where distances were great and transportation and communications costs relatively high.

Seay, however, insisted on uniformity. He had had misgivings about offering the service, but once it was instituted, he favored continuing it. The System had much to lose, he thought, if it were perceived as arbitrarily turning its services off and on in response to earnings changes. Moreover, noncash-collection services were consistent with Seay's expansive views of the services the Reserve Banks should offer to members. Citing the nonpayment of interest on reserve balances, he argued that Reserve Banks should offer to member banks all the services they could expect from city correspondents.

3. Problem Areas: Par Collection, Bank Failures, and Membership Efforts to improve the collection process were hampered in the period by a continuing wave of bank failures and by a running and often acrimonious disagreement with state-chartered banks over exchange charges. In the ensuing controversy, the System found itself confronting the hostility of state legislatures and banking commissions as well as of many state-chartered banks. The Reserve Banks sometimes found to their consternation that member banks, especially the large-city correspondents, gave them little or no support in this impasse. In any case, the large number of bank failures, among members as well as nonmembers, in combination with the par-collection controversy, tended to diminish public confidence in the System and to contribute to a steady erosion of membership in the period.

From the outset, exchange charges on checks were recognized as a major obstacle to membership in the System by small, state-chartered institutions. The Reserve Board took advantage of the patriotism generated during the war period to mount a campaign to encourage universal par remittance on a voluntary basis. So-called par lists were established, and the Reserve Banks succeeded in placing on these lists the great majority of the nation's banks. Yet substantial groups of state banks in rural areas of the South,

West, and Midwest stubbornly resisted. Many soon found that they could take advantage of the System's collection facilities through city correspondents without becoming members and giving up exchange charges.

Acting on a Reserve Board interpretation that the Federal Reserve Act gave the System authority to collect all checks at par, the Reserve Banks met this resistance with a concerted effort to present the checks of nonpar banks at the counter for cash payment. This action by the Reserve Banks brought the issue to a head. It touched off extended litigation that seriously embittered relations with small, state-chartered banks over much of the nation. The Reserve Banks most immediately involved in the litigation were Richmond, Atlanta, Cleveland, Minneapolis, and San Francisco.

In its annual report for 1920, the Richmond Bank noted ". . . marked progress toward the establishment of universal par collection." All District states except South Carolina were reported on a par basis. Of 2,210 banks in the District, only 334, all in South Carolina, refused to remit at par. In view of developments in the following year, this report probably gave an inaccurate evaluation of progress toward universal voluntary par remittance. Data for subsequent years suggest strongly that the par list for 1920 included many involuntary par remitters at whose counters the Richmond Bank was presenting checks for cash payment.

On February 5, 1921, the North Carolina legislature passed "An Act to Promote the Solvency of State Banks," in which it affirmed the right of state banks to charge exchange when remitting for checks sent to them by mail. It provided, moreover, that state banks were not required to pay in cash for checks presented at their counters by the Reserve Bank or any of its agencies but could pay with a draft drawn on a correspondent unless the drawer of the check had made a notation to the contrary. Finally, it forbade notaries public to protest checks when payment had been refused solely because it had been demanded in cash.

The Richmond Bank deemed the act to be unconstitutional and continued to present checks on nonpar banks at the counter for cash payment. On February 9, 13 nonmember banks brought suit against the Richmond Bank in the Superior Court of Union County, North Carolina, and obtained a restraining order forbidding the return as dishonored of checks that the plaintiff banks had refused to pay

in cash. More North Carolina banks joined the suit, and 230 were on the injunction list by December. The Richmond Bank refused to handle the checks of these banks and from time to time published their names along with the names of other banks the checks of which, for various reasons, it would not handle. At the end of 1921, of 2,195 banks in the District, 580 refused to remit at par. All these were in North Carolina (254) and South Carolina (326).

At trial, the Superior Court ruled the North Carolina act constitutional. The Richmond Bank appealed the decision to the North Carolina Supreme Court, which reversed the Superior Court. The plaintiff banks, however, took the case to the U.S. Supreme Court, which in June 1923 reversed the North Carolina Supreme Court and ruled the act constitutional. The banks of the state thus retained the right to charge exchange and to refuse cash payment for checks presented by the Reserve Bank at the counter.

Paralleling this case against the Richmond Bank were significant cases against the San Francisco, Atlanta, Cleveland, and Minneapolis Banks. As a result of the decisions in the several cases, the System ended up well short of its desired goal of universal par collection. At the direction of the Reserve Board, the practice of presenting checks for cash payment at the counters of nonpar banks was discontinued. The System adopted a policy of refusing to handle checks on nonpar banks. In the years that followed, the number of banks on the par list fell sharply.

In the Richmond District, the U.S. Supreme Court decision in 1923 was quickly followed by a large reduction in the number of banks on the par list. Three banks in West Virginia and 57 in Virginia promptly removed themselves from the list. The list fell rapidly over the remaining years of the decade, from 1,494 in 1923 to 1,091 in 1929. The decline was slightly more rapid than the drop in the total number of banks. At the end of 1929, nearly a third of the banks in the District were not remitting at par. These were concentrated heavily in the Carolinas and Virginia. In North Carolina, some 70 percent (294 of 419) of all banks were nonpar; in South Carolina, almost half (67 of 139); and in Virginia, nearly a quarter (104 of 468). There were nine nonpar banks in West Virginia but none in Maryland or the District of Columbia.

While the nonpar banks were mostly small banks in rural areas, the volume of check operations for

the group was significant. Their refusal to remit at par left an important gap in the Federal-Reserve-based payments arrangement that the System was so eager to establish. The outcome was especially disappointing to Seay.

The par-collection issue affected membership. In the Fifth District membership reached a peak of 634 in 1922 and then declined in each remaining year of the decade. At the end of 1929 it totaled 525. The number of state members fell from 68 to 45. Over the same span, the number of national banks declined from 566 to 480.

The total number of banks in the District fell from 2,210 in 1920 to 1,637 at the end of 1929, a reduction of 573. Much of this decline was accounted for by failures, which totaled 431 for the period. The failures were heavily concentrated in the farming areas of the District, with South Carolina accounting for 225, North Carolina for 119, Virginia for 45, and West Virginia for 34. There were only eight failures in Maryland and none in the District of Columbia. Among the failures were many national banks and state member banks, which accounted for much of the decline in membership. A handful of state members merged with national banks during the period, but the decline in state membership was due almost entirely to liquidations and voluntary withdrawals.

Concluding Observations

In their first five years, the Federal Reserve Banks were immersed in problems associated with financing the First World War. Not until 1920 were they able to come to grips with issues they were designed to resolve. To a significant extent the experience of the 1920s represented efforts by the Banks and the Reserve Board to fill gaps and resolve ambiguities in the Federal Reserve Act, which was amended ten times in the 1920s. The original act described only a skeletal outline of a system of banking control. Many crucial questions of detail were left unaddressed. It remained for the Reserve Board and the Banks, in the course of practice and experience, to put flesh on the skeleton.

For the entire decade, the division of authority between the Reserve Board and the Banks remained at issue. While the act clearly gave the Board broad authority, certain sections implied substantial autonomy for the Banks. The new system had been treated all along as a regional system, not a central

bank, and it was widely assumed that the Board's authority over the Banks would be limited to a monitoring and coordinating function. This was clearly the view of Seay. It was frequently expressed by the governors of the other Banks and seems to have been acquiesced in by some Reserve Board members as well. In any case, it is clear from the history of the period that the governors of the Banks, as a group under the leadership of Benjamin Strong, were able to maintain a high degree of autonomy and to play a major role in shaping the System's early development.

As noted, Seay and the Richmond Bank were vigorous defenders of the autonomy of the Reserve Banks. They were also major contributors to the efforts of the governors to develop an effective mechanism of credit control and an efficient payments system. In the credit-policy area, Seay favored cooperative action by the Banks' governors, coordinated through the Conference of Governors, over Reserve Board leadership. He was a firm supporter of Governor Strong's efforts to forge an effective policy tool out of the Banks' purchases and sales in the market for government securities. In addition, he chaired the Conference of Governors' committee to establish basic principles that should be followed in setting discount rates.

In the payments-system area, the Richmond Bank was in the forefront of the effort to universalize collection of checks at par. Seay and Walden were major contributors to the work of the Conference of Governors' Standing Committee on Collections and Clearings. The Richmond Bank was also involved in one of the key court cases that questioned the authority of the System to require par remittance for checks.

The stock market crash at the end of the decade of the 1920s signaled the end of an important chapter in the history of the Federal Reserve Banks. It ushered in a new set of problems for the entire

System, problems that dwarfed in both magnitude and complexity any that had been confronted up to that time. The banking collapse in the three years that followed and the onset of the Great Depression led to a drastic restructuring of the System. The result was a less ambiguous centralization of authority in a newly constituted Reserve Board, renamed the Board of Governors of the Federal Reserve System, and a substantial reduction in the autonomy of the Reserve Banks.

Epilogue

The major reforms of the mid-1930s, along with important amendments enacted since that time, have produced a system fundamentally different, both in structure and in approaches to money and credit control, from the original. In every respect, the Federal Reserve System has become undeniably a central bank or, more precisely, a central banking system.

The System today retains, however, sufficient vestiges of its pristine form to continue to be described as unique among the world's central banks. In particular, in the face of increased centralization of power in the hands of the Board of Governors, the regional Reserve Banks continue to play an important role. Their operations are crucial to the maintenance of an efficient payments system. Their information services constitute useful inputs into decisions of businesses, large and small, and of governments. Their role in monetary policymaking has been restructured to bring it into closer conformity with radically revised views regarding techniques of monetary and credit control, but it is no less significant. The boards of directors of the Reserve Banks continue to take the initiative in setting the discount rate. More important, the executive heads of the Reserve Banks, now styled presidents instead of governors, serve actively on the Federal Open Market Committee, the System's chief policy-making body.

The Lender of Last Resort: Alternative Views and Historical Experience

*Michael D. Bordo**

I. INTRODUCTION

Recent liquidity assistance to failing savings and loans and banks (some insolvent and some large) in the U.S. and similar rescues abroad have prompted renewed interest in the topic of the lender of last resort. Under the classical doctrine, the need for a lender of last resort arises in a fractional reserve banking system when a banking panic, defined as a massive scramble for high-powered money, threatens the money stock and, hence, the level of economic activity. The lender of last resort can allay an incipient panic by timely assurance that it will provide whatever high-powered money is required to satisfy the demand, either by offering liberal access to the discount window at a penalty rate or by open market purchases.

Henry Thornton (1802) and Walter Bagehot (1873) developed the key elements of the classical doctrine of the lender of last resort (LLR) in England. This doctrine holds that monetary authorities in the face of panic should lend unsparingly but at a penalty rate to illiquid but solvent banks. Monetarist writers in recent years have reiterated and extended the classical notion of the LLR. By contrast, Charles Goodhart and others have recently posited an alternative view, broadening the power of LLR to include aid to insolvent financial institutions. Finally, modern proponents of free banking have made the case against a need for any public LLR.

The remainder of this paper is organized as follows:

- II. The LLR's role in preventing banking panics
- III. Four views of the LLR: central propositions

IV. Historical evidence:

- Incidence of banking panics and LLR actions, U.S. and elsewhere
- Alternative LLR arrangements in the U.S., Scotland, and Canada
- Record of assistance to insolvent banks

V. Lessons from history in the context of the four views of the LLR

II. BANKING PANICS AND THE LENDER OF LAST RESORT

The need for a monetary authority to act as LLR arises in the case of a banking panic—a widespread attempt by the public to convert deposits into currency and, in response, an attempt by commercial banks to raise their desired reserve-deposit ratios. Banking panics can occur in a fractional reserve banking system when a bank failure or series of failures produces bank runs which in turn become contagious, threatening the solvency of otherwise sound banks.

Two sets of factors, some internal and some external to banks, can lead to bank failures. Internal factors, which affect both financial and nonfinancial enterprises, include poor management, poor judgment, and dishonesty. External factors include adverse changes in relative prices (e.g., land or oil prices) and in the overall price level.

Of the external factors, changes in relative prices can drastically alter the value of a bank's portfolio and render it insolvent. Banking structure can mitigate the effects of relative price changes. A nationwide branch banking system that permits portfolio diversification across regions enables a bank to absorb the effects of relative price changes. A unit banking system, even with correspondents, is considerably less effective. The nearly 6000 bank failures that occurred during the decade of the 1920s in the U.S. were mostly small unit banks in agricultural regions. Canada, in contrast, had nationwide branch

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banking. Consequently, many bank branches in those regions closed, but no banks failed (with the exception of one, in 1923, due to fraud).

A second external factor that can lead to bank failures is changes in the overall price level (Schwartz, 1988). Price level instability (in a nonindexed system) can produce unexpected changes in banks' net worth and convert *ex ante* sound investments into *ex post* mistakes. Instability means sharp changes from rising to falling prices or from inflation to disinflation. It was caused by gold movements under the pre-1914 gold standard, and, more recently, by the discretionary actions of monetary authorities.

Given that bank liabilities are convertible on demand, a run on an insolvent bank is a rational response by depositors concerned about their ability to convert their own deposits into currency. In normal circumstances, according to one writer, bank runs serve as a form of market discipline, reallocating funds from weak to strong banks and constraining bank managers from adopting risky portfolio strategies (Kaufman, 1988). Bank runs can also lead to a "flight to quality" (Benston and Kaufman et al., 1986). Instead of shifting funds from weak banks to those they regard to be sound, depositors may convert their deposits into high-quality securities. The seller of the securities, however, ultimately will deposit his receipts at other banks, leaving bank reserves unchanged.

When there is an external shock to the banking system, incomplete and costly information may sometimes make it difficult for depositors to distinguish sound from unsound banks. In that case, runs on insolvent banks can produce contagious runs on solvent banks, leading to panic. A panic, in turn, can lead to massive bank failures. Sound banks are rendered insolvent by the fall in the value of their assets resulting from a scramble for liquidity. By intervening at the point when the liquidity of solvent banks is threatened—that is, by supplying whatever funds are needed to meet the demand for cash—the monetary authority can allay the panic.

Private arrangements can also reduce the likelihood of panics. Branch banking allows funds to be transferred from branches with surplus funds to those in need of cash (e.g., from branches in a prosperous region to those in a depressed region). By pooling the resources of its members, commercial bank clearing houses, in the past, provided emergency reserves to meet the heightened liquidity demand. A clearing house also represented a signal to the public that

help would be available to member banks in time of panic. Neither branch banking nor clearing houses, however, can stem a nationwide demand for currency occasioned by a major aggregate shock, like a world war. Only the monetary authority—the ultimate supplier of high-powered money—could succeed. Of course, government deposit insurance can prevent panics by removing the reason for the public to run to currency.¹ Ultimately, however, a LLR is required to back up any deposit scheme.

III. ALTERNATIVE VIEWS ON THE LLR FUNCTION

Four alternative views on the lender of last resort function are outlined below, including:

- * The Classical View: the LLR should provide whatever funds are needed to allay a panic;
- * Goodfriend and King: an open market operation is the only policy required to stem a liquidity crisis;
- * Goodhart (and others): the LLR should assist illiquid and insolvent banks;
- * Free Banking: no government authority is needed to serve as LLR.

The Classical Position

Both Henry Thornton's *An Enquiry into the Effects of the Paper Credit of Great Britain* (1802) and Walter Bagehot's *Lombard Street* (1873) were concerned with the role of the Bank of England in stemming periodic banking panics. In Thornton's time, the Bank of England—a private institution which served as the government's bank—had a monopoly of the note issue within a 26-mile radius of London, and Bank of England notes served as high-powered money for the English banking system.² For Thornton, the Bank's responsibility in time of panic was to serve

¹ In theory private deposit insurance could also be used. In practice, to succeed in the U.S., such arrangements would require the private authority to have the power, currently possessed by the FDIC, to monitor, supervise, and declare insolvent its members. Also the capacity of the private insurance industry is too limited to underwrite the stock of government-insured deposits. (Benston et al., 1986, ch. 3). Alternatives to deposit insurance include requiring banks to hold safe assets (treasury bills), charging fees for service, and one hundred percent reserves.

² Bank of England notes served as currency and reserves for the London banks. Country banks issued bank notes but kept correspondent balances in the London banks. From 1797 to 1821, Bank of England notes were inconvertible into gold.

as LLR, providing liquidity to the market and discounting freely the paper of all solvent banks, but denying aid to insolvent banks no matter how large or important (Humphrey, 1975, 1989).

Bagehot accepted and broadened Thornton's view. Writing at a time when the Bank had considerably enhanced its power in the British financial system, he stated four principles for the Bank to observe as lender of last resort to the monetary system:

- * Lend, but at a penalty rate³: "Very large loans at very high rates are the best remedy for the worst malady of the money market when a foreign drain is added to a domestic drain." (Bagehot, 1873, p.56);
- * Make clear in advance the Bank's readiness to lend freely;
- * Accommodate anyone with good collateral (valued at pre-panic prices);
- * Prevent illiquid but solvent banks from failing.^{4,5}

Recent monetarist economists have restated the classical position. Friedman and Schwartz (1963), in *A Monetary History*, devote considerable attention to the role of banking panics in producing monetary

³ Bagehot distinguished between the response to an external gold drain induced by a balance of payment deficit (raising the Bank rate) and the response to an internal drain (lending freely).

⁴ Bagehot has been criticized for not stating clearly when the central bank should intervene (Rockoff, 1986), for not giving specific guidelines to distinguish between sound and unsound banks (Humphrey, 1975), and for not realizing that provision of the LLR facility to individual banks would encourage them to take greater risks than otherwise (Hirsch, 1977).

⁵ In part, Humphrey's summary of the Classical position is: ". . . The lender of last resort's responsibility is to the entire financial system and not to specific institutions."

"The lender of last resort exists not to prevent the occurrence but rather to neutralize the impact of financial shocks."

"The lender's duty is a twofold one consisting first, of lending without stint during actual panics and second, of acknowledging beforehand its duty to lend freely in all future panics."

"The lender should be willing to advance indiscriminately to any and all sound borrowing on all sound assets no matter what the type."

"In no case should the central bank accommodate unsound borrowers. The lender's duty lay in preventing panics from spreading to the sound institutions, and not in rescuing unsound ones."

"All accommodations would occur at a penalty rate, i.e., the central bank should rely on price rather than non-price mechanisms to ration use of its last resort lending facility."

"The overriding objective of the lender of last resort was to prevent panic-induced declines in the money stock. . . ." (Humphrey, 1975 p.9)

stability in the United States (also see Cagan, 1965). According to them, the peculiarities of the nineteenth century U.S. banking system (unit banks, fractional reserves, and pyramiding of reserves in New York) made it highly susceptible to banking panics. Federal deposit insurance in 1934 provided a remedy to this vulnerability. It served to assure the public that their insured deposits would not be lost, but would remain readily available.

Friedman and Schwartz highlight the importance in the pre-FDIC system of timely judgment by strong and responsible leadership in intervening to allay the public's fear. Before the advent of the Fed, the New York Clearing House issued clearing house certificates and suspended convertibility, and, on occasion, the Treasury conducted open market operations. In two episodes, these interventions were successful; in three others, they were not effective in preventing severe monetary contraction. The Federal Reserve System, established in part to provide such leadership, failed dismally in the 1929-33 contraction. According to Friedman and Schwartz, had the Fed conducted open market operations in 1930 and 1931 to provide the reserves needed by the banking system, the series of bank failures that produced the unprecedented decline in the money stock could have been prevented.

Schwartz (1986) argues that all the important financial crises in the United Kingdom and the United States occurred when the monetary authorities failed to demonstrate at the beginning of a disturbance their readiness to meet all demands of sound debtors for loans and of depositors for cash. Finally, she views deposit insurance as not necessary to prevent banking panics. It was successful after 1934 in the U.S. because the lender of last resort was undependable. Had the Fed acted on Bagehot's principles, federal deposit insurance would not have been necessary, as the record of other countries with stable banking systems but no federal deposit insurance attests.

Meltzer (1986) argues that a central bank should allow insolvent banks to fail, for not to do so would encourage financial institutions to take greater risks. Following such an approach would "separate the risk of individual financial failures from aggregate risk by establishing principles that prevent banks' liquidity problems from generating an epidemic of insolvencies" (p. 85). The worst cases of financial panics,

according to Meltzer, “arose because the central bank did not follow Bagehotian principles.”⁶

Goodfriend-King and the Case for Open Market Operations

Goodfriend and King (1988) argue strongly for the exercise of the LLR function solely by the use of open market operations to augment the stock of high-powered money; they define this as monetary policy. Sterilized discount window lending to particular banks, which they refer to as banking policy, does not involve a change in high-powered money. They regard banking policy as redundant because they see sterilized discount window lending as similar to private provision of line-of-credit services; both require monitoring and supervision, and neither affects the stock of high-powered money.⁷ Moreover, they argue that it is not clear that the Fed can provide such services at a lower cost than can the private sector. Goodfriend (1989) suggests that one reason the Fed may currently be able to extend credit at a lower cost is that it can make fully collateralized loans to banks, whereas private lenders cannot do so under current regulations. On the other hand, the availability of these fully collateralized discount window loans to offset funds withdrawals by uninsured depositors and others may on occasion permit delays in the closing of insolvent banks.⁸ Goodfriend regards government-provided deposit insurance as basically a substitute for the portfolio diversification of a nationwide branch banking system. By itself, however, deposit insurance without a LLR commitment

⁶ Meltzer (1986) succinctly restates Bagehot’s four principles: “The central bank is the only lender of last resort in a monetary system such as ours.”

“To prevent illiquid banks from closing, the central bank should lend on any collateral that is marketable in the ordinary course of business when there is a panic . . .”

“Central bank loans, or advances, should be made in large amounts, on demand, at a rate of interest above the market rate.”

“The above three principles of central bank behavior should be stated in advance and followed in a crisis.” (Meltzer, 1986, p. 83)

⁷ Like Goodfriend and King, Friedman (1960) earlier argued for use of open market operations exclusively and against the use of the discount window as an unnecessary form of discretion which “involves special governmental assistance to a particular group of financial institutions” (p. 38). Also see Hirsch (1977) and Goodhart (1988) for the argument that Bagehot’s rule was really designed for a closely knit/cartelized banking system such as the London clearing banks.

⁸ Cagan (1988) in his comment on Goodfriend and King makes the case for retention of discount window lending in the case of “a flight to quality”. In that case, the discount window can be used to provide support to particular sectors of the economy which have had banking services temporarily curtailed.

to provide high-powered money in times of stress is insufficient to protect the banking system as a whole from aggregate shock.

The Case for Central Bank Assistance to Insolvent Banks

Charles Goodhart (1985, 1987) advocates temporary central bank assistance to insolvent banks. He argues that the distinction between illiquidity and insolvency is a myth, since banks requiring LLR support because of “illiquidity will in most cases already be under suspicion about . . . solvency.” Furthermore “because of the difficulty of valuing [the distressed bank’s] assets, a Central Bank will usually have to take a decision on last resort support to meet an immediate liquidity problem when it knows that there is a doubt about solvency, but does not know just how bad the latter position actually is” (Goodhart, 1985, p. 35).

He also argues that by withdrawing deposits from an insolvent bank in a flight to quality, a borrower severs the valuable relationship with his banker. Loss of this relationship, based both on trust and agent-specific information, adds to the cost of flight, making it less likely to occur. Replacing such a connection requires costly search, a process which imposes losses (and possible bankruptcy) on the borrowers. To protect borrowers, Goodhart would have the central bank recycle funds back to the troubled bank.

Solow (1982) also is sympathetic to assisting insolvent banks. According to him, the Fed is responsible for the stability of the whole financial system. He argues that any bank failure, especially a large one, reduces confidence in the whole system. To prevent a loss of confidence caused by a major bank failure from spreading to the rest of the banking system, the central bank should provide assistance to insolvent banks. However, such a policy creates a moral hazard, as banks respond with greater risk-taking and the public loses its incentive to monitor them.

Free Banking: The Case against Any Public LLR

Proponents of free banking have denied the need for any government authority to serve as lender of last resort. They argue that the only reason for banking panics is legal restrictions on the banking system. In the absence of such restrictions, the free market would produce a panic-proof banking system.

According to Selgin (1988, 1990) two of the most important restrictions are the prohibition of nationwide branch banking in the U.S. and the prohibition everywhere of free currency issue by the commercial banking system. Nationwide branch banking would allow sufficient portfolio diversification to prevent relative price shocks from causing banks to fail. Free note issue would allow banks to supply whatever currency individuals may demand.

Free banking proponents also contend that contagious runs because of incomplete information would not occur because secondary markets in bank notes (note brokers, note detectors) would provide adequate information to note holders about the condition of all banks. True, such markets do not arise for demand deposits because of the agent-specific information involved in the demand deposit contract—it is costly to verify whether the depositor has funds backing his check. But, free banking advocates insist that clearing house associations can offset the information asymmetry involved in deposit banking.

According to Gorton (1985), and Gorton and Mullineaux (1987), clearing houses in the nineteenth century, by quickly organizing all member banks into a cartel-like structure, established a coinsurance scheme that made it difficult for the public to discern the weakness of an individual member bank. The clearing house could also allay a panic by issuing loan certificates which served as a close substitute for gold (assuming that the clearing house itself was financially sound). Finally, a restriction on convertibility of deposits into currency could end a panic. Dowd (1984) regards restrictions as a form of option clause.⁹ In an alternative option (used in pre-1765 Scotland) banks had the legal right to defer redemption till a later date, with interest paid to compensate for the delay.

For Selgin and Dowd, the public LLR evolved because of a monopoly in the issue of currency. The Bank of England's currency monopoly within a 26-mile radius of London until 1826 and its extension to the whole country in 1844 made it more difficult than otherwise for depositors to satisfy their demand for currency in times of stress. This, in turn, created a need for the Bank, as sole provider of high-

⁹ A restriction of convertibility itself could exacerbate a panic because the public, in anticipating such restriction, demands currency sooner.

powered money, to serve as LLR.¹⁰ In the U.S., bond-collateral restrictions on state banks before 1863 and on the national banks thereafter were responsible for the well-known problem of currency inelasticity. Selgin and Dowd do not discuss the case of a major aggregate shock that produces a widespread demand for high-powered money. In that situation, only the monetary authority will suffice.

In sum, the four views—classical, Goodfriend/King, Goodhart, and free banking—have considerably different implications for the role of a LLR. With these views as backdrop, the remaining paragraphs now examine evidence on banking panics and their resolution in the past.

IV. THE HISTORICAL RECORD

In this section, I present historical evidence for a number of countries on the incidence of banking panics, their likely causes, and the role of a LLR in their resolution. I then consider alternative institutional arrangements that served as surrogate LLRs in diverse countries at different times. Finally, I compare the historical experience with the more recent assistance to insolvent banks in the U.S., Great Britain, and Canada. This evidence is then used to shed light on the alternative views of the lender of last resort discussed in section III.

Banking Panics and Their Resolution

The record for the past 200 years for at least 17 countries shows a large number of bank failures, fewer bank runs (but still a considerable number) and a relatively small number of banking panics. According to a chronology compiled by Anna Schwartz (1988), for the U.S. between 1790 and 1930, bank panics occurred in 14 years; Great Britain had the next highest number with panics occurring in 8 years between 1790 and 1866. France and Italy followed with 4 each.

An alternative chronology that I prepared (Bordo, 1986, Table 1) for 6 countries (the U.S., Great Britain, France, Germany, Sweden, and Canada) over the period 1870-1933 lists 16 banking crises (defined as bank runs and/or failures), and 4 banking

¹⁰ Selgin (1990) argues that the Bank Charter Act of 1844 exacerbated the problem of panics because it imposed tight constraints on the issue of bank notes by the Issue Department. However, the Banking Department surely could have discounted commercial paper from correspondent banks without requiring further note issue. That is one of Bagehot's main points in *Lombard Street*.

panics (runs, failures, and suspensions of payments), all of which occurred in the U.S. It also lists 30 such crises, based on Kindleberger's definition of financial crises as comprising manias, panics, and crashes and 71 stock market crises, based on Morgenstern's (1959) definition.

The similar failure rates for banks and nonfinancial firms in many countries largely reflect that individual banks, like other firms, are susceptible to market vagaries and to mismanagement. Internal factors were important, as were the external factors of relative price changes, banking structure, and changes in the overall price level. The relatively few instances of banking panics in the past two centuries suggests that either (1) monetary authorities in time developed the procedures and expertise to supply the funds needed to meet depositors' demands for cash or (2) the problem of banking panics is exaggerated.

A comparison of the performances of Great Britain and the U.S. in the past century serves to illustrate the importance of the lender of last resort in preventing banking panics. In the first half of the nineteenth century, Great Britain experienced banking panics when the insolvency of an important financial institution precipitated runs on other banks, and a scramble for high-powered money ensued. In a number of instances, the reaction of the Bank of England to protect its own gold reserves worsened the panic. Eventually, the Bank supplied funds to the market, but often too late to prevent many unnecessary bank failures. The last such panic followed the failure of the Overend Gurney Company in 1866. Thereafter, the Bank accepted its responsibility as lender of last resort, observing Bagehot's Rule "to lend freely but at a penalty rate". It prevented incipient financial crises in 1878, 1890, and 1914 from developing into full-blown panics by timely announcements and action.

The United States in the antebellum period experienced 11 banking panics (according to Schwartz's chronology) of which the panics of 1837, 1839, and 1857 were most notable.¹¹ The First and Second Banks of the United States possessed some central banking powers in part of the period; some states

¹¹ Selgin (1990), based on evidence by Rolnick and Weber (1986), argues that the episodes designated as panics in the antebellum Free Banking era are not comparable to these in the National Banking era because they did not involve contagion effects. Evidence to the contrary, however, is presented by Hasan and Dwyer (1988).

developed early deposit insurance schemes (see Benston, 1983; Calomiris, 1989), and the New York Clearing House Association began issuing clearing house loan certificates in 1857. None of these arrangements sufficed to prevent the panics.

In the national banking era, the U.S. experienced three serious banking panics — 1873, 1893, and 1907-08. In these episodes, the Clearing Houses of New York, Chicago, and other central reserve cities issued emergency reserve currency in the form of clearing house loan certificates collateralized by member banks' assets and even issued small denomination hand-to-hand currency. But these lender of last resort actions were ineffective. In contrast to successful intervention in 1884 and 1890, the issue of emergency currency was too little and too late to prevent panic from spreading. The panics ended upon the suspension of convertibility of deposits into currency. During suspension, both currency and deposits circulated freely at flexible exchange rates, thereby relieving the pressure on bank reserves. The panics of 1893 and especially 1907 precipitated a movement to establish an agency to satisfy the public's demand for currency in times of distrust of deposit convertibility. The interim Aldrich-Vreeland Act of 1908 allowed ten or more national banks to form national currency associations and issue emergency currency; it was successful in preventing a panic in 1914.

The Federal Reserve System was created in 1914 to serve as a lender of last resort. The U.S. did not experience a banking panic until 1930, but as Friedman and Schwartz point out, during the ensuing three years, a succession of nationwide banking panics accounted for the destruction of one-third of the money stock and the permanent closing of 40 percent of the nation's banks. Only with the establishment of federal deposit insurance in 1934 did the threat of banking panics recede.

Table I compares American and British evidence on factors commonly believed to be related to banking panics, as well as a chronology of banking panics and banking crises for severe NBER business cycle recessions (peak to trough) in the period 1870-1933.¹² The variables isolated include: deviations from trend of the average annual growth rate of real output; the absolute difference of the average annual rate of change in the price level during the preceding

¹² For similar evidence for the remaining cyclical downturns in this period, see Bordo (1986, Table 6, 1A).

Table I
Banking Panics (1870-1933): Related Factors, Incidence, and Resolution

	Reference Cycle		Deviations from Trend of Average Annual Real Output Growth ^a (peak to trough)**				Absolute Difference of Average Annual Rate of Price Level Change (trough to peak minus peak to trough)*		Deviations from Trend of Average Annual Monetary Growth ^b (specific cycle peak to trough)**		Change in Money due to Change in Deposit-Currency Ratio (specific cycle peak to trough)**		Banking Crisis ^c **		Banking Panic ^d **		Existence of Clear and Credible LLR Policy***		Agency***			
	Peak	Trough																				
United States	1873	1879	0.5%	-7.1%	-4.7%	2.7%																
	1882	1885	-3.2%	-12.2%	2.6%	5.2%							5/84			Yes	Successful LLR			Clearing Houses/Treasury		
	1893	1894	-9.5%	-9.0%	-9.3%	-4.3%										Yes	Restriction of Payments			Clearing Houses/Treasury		
	1907	1908	-14.7%	-6.1%	-1.7%	-2.7%										No	Restriction of Payments			Clearing Houses/Treasury		
	1920	1921	-7.6%	-56.7%	-2.5%	2.8%										(?)						
	1929	1932	-16.7%	-12.5%	-11.7%	-27.4%								1930,1931,1932	1933	No	Unsuccessful LLR				Federal Reserve	
Great Britain	1873	1879	0.9%	-7.1%	-3.1%	5.2%										Yes						
	1883	1886	-1.2%	-5.4%	-2.8%	2.3%										Yes						
	1890	1894	-0.2%	-4.4%	-2.5%	-2.2%										Yes	Successful				Bank of England	
	1907	1908	-4.7%	-13.6%	-1.6%	-1.0%										Yes						
	1920	1921	-6.9%	-68.0%	-5.1%	4.5%										Yes						
	1929	1932	-3.7%	-7.9%	-4.3%	-1.3%										Yes						

Data Sources: * See Data Appendix in Bordo (1981).

** See Data Appendix in Bordo (1986).

*** Judgmental, based on this paper and other research.

Notes: (a) The trend growth rates of real output were 3.22% for the U.S. (1870-1941) and 1.48% for Great Britain (1870-1939). Each was calculated as the difference between the natural logs of real output in terminal and initial years divided by the number of years.

(b) The trend monetary growth rates were 5.40% for the U.S. (1870-1941) and 2.71% for Great Britain (1870-1939). Each was calculated as in footnote (a).

(c) Banking crisis—runs and/or failures. Source Bordo (1986).

(d) Banking panic—runs, failures, suspension of payments. Ibid.

trough to peak and the current peak to trough as a measure of the effect of changes in the overall price level; deviations from trend of the average annual rate of monetary growth; and the percentage change in the money stock due to changes in the deposit-currency ratio.¹³

The table reveals some striking similarities in the behavior of variables often related to panics but a remarkable difference between the two countries in the incidence of panics. Virtually all six business cycle downturns designated by the NBER as severe were marked in both countries by significant declines in output, large price level reversals, and large declines in money-growth. Also, in both countries, falls in the deposit-currency ratio produced declines in the money stock in the three most severe downturns: 1893-94 (U.S.); 1890-1894 (G.B.); 1907-08; and 1929-32.

¹³ In relating the changes in the money stock to changes in the deposit-currency ratio, we hold constant the influence of the other two proximate determinants of the money supply: the deposit-reserve ratio and the stock of high-powered money. It is calculated using the formula developed in Friedman and Schwartz (1963), Appendix B.

However, the difference in the incidence of panics is striking—the U.S. had four while Britain had none. Both countries experienced frequent stock market crashes (see Bordo, 1986, Table 6.1). They were buffeted by the same international financial crises. Although Britain faced threats to the banking system in 1878, 1890, and 1914, the key difference between the two countries (see the last three columns of Table I) was successful LLR action by the British authorities in defusing incipient crises.

Similar evidence over the 1870-1933 period for France, Germany, Sweden, and Canada is available in Bordo (1986). In all four countries, the quantitative variables move similarly during severe recessions to those displayed here for the U.S. and Great Britain, yet there were no banking panics. In France, appropriate actions by the Bank of France in 1882, 1889, and 1930 prevented incipient banking crises from developing into panics. Similar behavior occurred in Germany in 1901 and 1931 and in Canada in 1907 and 1914.

One other key difference was that all five countries had nationwide branch banking whereas the U.S.

had unit banking. That difference likely goes a long way to explain the larger number of bank failures in the U.S.

Alternative LLR Arrangements

In the traditional view, the LLR role is synonymous with that of a central bank. Goodhart's explanation for the evolution of central banking in England and other European countries is that the first central banks evolved from commercial banks which had the special privilege of being their governments' banks. Because of its sound reputation, position as holder of its nation's gold reserves, ability to obtain economies by pooling reserves through a correspondent banking system, and ability to provide extra cash by rediscounting, such a bank would evolve into a bankers' bank and lender of last resort in liquidity crises. Once such banks began to act as lenders of last resort, "moral hazard" on the part of member banks (following riskier strategies than they would otherwise) provided a rationale for some form of supervision or legislation. Further, Goodhart argues that the conflict between the public duties of such an institution and its responsibilities to its shareholders made the transition from a competitive bank to a central bank lengthy and painful.

Though Goodhart (1985 Annex B) demonstrates that a number of central banks evolved in this fashion, the experiences of other countries suggests that alternative arrangements were possible. In the U.S. before the advent of the Fed, a variety of institutional arrangements were used on occasion in hopes of allaying banking panics, including:

- * Deposit insurance schemes: relatively successful in a number of states before the Civil War (Benston, 1983; Calomiris, 1989);
- * A variety of early twentieth century deposit insurance arrangements which were not successful (White, 1981);
- * Clearing houses and the issue of clearing house loan certificates (Timberlake, 1984; Gorton, 1985);
- * Restriction of convertibility of deposits into currency by the clearing house associations in the national banking era;
- * Various U.S. Treasury operations between 1890 and 1907 (Timberlake, 1978);
- * The Aldrich-Vreeland Act of 1908.

Two countries which managed successfully for long periods without central banks were Scotland and

Canada. Scotland had a system of free banking from 1727 to 1844. The key features of this system were a) free entry into banking and free issue of bank notes, b) bank notes that were fully convertible into full-bodied coin, and c) unlimited liability of bank shareholders.

Scotland's record under such a system was one of remarkable monetary stability. That country experienced very few bank failures and very few financial crises. One reason, according to White (1984), was the unlimited liability of bank stockholders and strict bankruptcy laws that instilled a sense of confidence in noteholders.¹⁴ Indeed, the Scottish banks would take over at par the issue of failed banks (e.g., the Ayr bank, 1772) to increase their own business. A second reason was the absence of restrictions on bank capital and of other impediments to the development of extensive branching systems that allowed banks to diversify risk and withstand shocks.¹⁵ Faced with a nationwide scramble for liquidity, however, Scottish banks were always able to turn to the Bank of England as a lender of last resort (Goodhart 1985).

Although Canada had a competitive fractional reserve banking system throughout the nineteenth century, no central bank evolved (Bordo and Redish, 1987). By the beginning of the twentieth century, though, virtually all the elements of traditional central banking were being undertaken either by private institutions or directly by the government.

By 1890, the chartered banks, with the compliance of the Government, had established an effective self-policing agency, the Canadian Bankers Association. Acting in the absence of a central bank, it succeeded in insulating the Canadian banks from the deleterious effects of the U.S. banking panics of 1893 and 1907. It did so by quickly arranging mergers between sound and failing banks, by encouraging cooperation between strong and weaker banks in times of stringency, and by establishing a reserve fund to be used to compensate note holders in the event of failure.

In addition, the nationwide branch system overcame the problem of seasonal liquidity crises that characterized the United States after the Civil War,

¹⁴ Sweden from 1830 to 1902 had a system of competitive note issue and unlimited liability. According to Jonung (1985), there is evidence neither of overissue nor of bank runs.

¹⁵ Switzerland also had a successful experience with free banks 1826-1850 (Weber, 1988) but like Scotland's dependence on the Bank of England, she depended on the Bank of France as lender of last resort (Goodhart, 1985).

characterized the United States after the Civil War, thus lessening the need for a lender of last resort. However, the Bank of Montreal (founded in 1817) very early became the government's bank and performed many central bank functions.

Because Canadian banks kept most of their reserves on "call" in the New York money market, they were able in this way to satisfy the public's demand for liquidity, again precluding the need for a central bank. On two occasions, 1907 and 1914, however, these reserves proved inadequate to prevent a liquidity crisis and the Government of Canada had to step in to supplement the reserves.

The Finance Act, passed in 1914 to facilitate wartime finance, provided the chartered banks with a liberal rediscounting facility. By pledging appropriate collateral (this was broadly defined) banks could borrow Dominion notes from the Treasury Board. The Finance Act clause, which was extended after the wartime emergency by the Amendment of 1923, provided a discount window/lender of last resort for the Canadian banking system.

In sum, though Canada, Scotland, and several other countries did not have formal central banks serving as LLRs, all had access to a governmental authority which could provide high-powered money in the event of such a crisis.

LLR Assistance to Insolvent Banks

The classical prescription for LLR action is to lend freely but at a penalty rate to illiquid but solvent banks. Both Thornton and Bagehot advised strongly against assistance to insolvent financial institutions. They opposed them because they would encourage future risk-taking without even eradicating the threat of runs on other sound financial institutions. Bagehot also advocated lending at a penalty rate to discourage all but those truly in need from applying and to limit the expansion in liquidity to the minimum necessary to end the panic.

Between 1870 and 1970, European countries generally observed the classical strictures. In the Baring Crisis of 1890, the Bank of England successfully prevented panic. It arranged (with the Bank of France and the leading Clearing Banks) to advance the necessary sums to meet the Barings' immediate maturing liability. These other institutions effectively became part of a joint LLR by guaranteeing to cover losses sustained by the Bank of England in the pro-

cess (Schwartz, 1986, p. 19). The German Reichsbank in 1901 prevented panic by purchasing prime bills on the open market and expanding its excess note issue, but it did not intervene to prevent the failure of the Leipziger and other banks (Goodhart, 1985, p. 96). The Bank of France also followed classical precepts in crises in 1881 and 1889.

The Austrian National Bank, however, ignored the classical advice during the Credit Anstalt crisis of 1931 by providing liberal assistance to the Credit Anstalt at low interest rates (Schubert, 1987). Then, a run on the Credit Anstalt and other Viennese banks in May 1931 followed the disclosure of the Credit Anstalt's insolvency and a government financial rescue package. The run degenerated into a speculative attack on the fixed price of gold of the Austrian Schilling.

The U.S. record over the same period is less favorable than that of the major European countries. Before the advent of the Federal Reserve System and during the banking panics of the early 1930s, LLR action was insufficient to prevent panics. By contrast, over the past two decades, panics may have been prevented, but LLR assistance has been provided on a temporary basis to insolvent banks and, prior to the Continental Illinois crisis in 1984, no penalty rate was charged. In the U.S. on three notable occasions, the Fed (along with the FDIC) provided liberal assistance to major banks whose solvency was doubtful at the time of the assistance: Franklin National in 1974, First Pennsylvania in 1980, and Continental Illinois in 1984. Further, in the first case, loans were advanced at below-market rates (Garcia and Plautz, 1988). This Federal Reserve policy toward large banks of doubtful solvency differs significantly from the classical doctrine.

The Bank of England followed similar policies in the 1974 Fringe Bank rescue and the 1982 Johnson Matthey affair. In 1985, the Bank of Canada arranged for the major chartered banks to purchase the assets of two small insolvent Alberta banks and fully compensate all depositors. In contrast to the Anglo-Saxon experience, the German Bundesbank allowed the Herstatt Bank to be liquidated in 1974 but provided LLR assistance to the market. Thus, although the classical doctrine has been long understood and successfully applied, recent experience suggests that its basic message is no longer always adhered to.

V. CONCLUSION: SOME LESSONS FROM HISTORY

One can draw a number of conclusions from the historical record.

(1) Banking panics are rare events. They occurred more often in the U.S. than in other countries. They usually occurred during serious recessions associated with declines in the money supply and sharp price level reversals. The likelihood of their occurrence would be greatly diminished in a diversified nationwide branch banking system.

(2) Successful LLR actions prevented panics on numerous occasions. On those occasions when panics were not prevented, either the requisite institutions did not exist or the authorities did not understand the proper actions to take. Most countries developed an effective LLR mechanism by the last one-third of the nineteenth century. The U.S. was the principal exception.

(3) Some public authority must provide the lender of last resort function. The incidence of major international financial crises in 1837, 1857, 1873, 1890-93, 1907, 1914, 1930-33 suggests that in such episodes aggregate shocks can set in train a series of events leading to a nationwide scramble for high-powered money.

(4) Such an authority does not have to be a central bank. This is evident from the experience of Canada and other countries (including the U.S. experience under the Aldrich-Vreeland Act in 1914). In these cases, lender of last resort functions were provided by other forms of monetary authority, including the U.S. Treasury, Canadian Department of Finance, and foreign monetary authorities.

(5) The advent of federal deposit insurance in 1934 solved the problem of banking panics in the U.S. The absence of government deposit insurance in other countries that were panic-free before the 1960s and 1970s, however, suggests that such insurance is not required to prevent banking panics.

(6) Assistance to insolvent banks was the exception rather than the rule until the 1970s.¹⁶ The monetary authorities in earlier times erred on the side of deficiency rather than excess. Goodhart's view is certainly not a description of past practice. The recent experience with assistance to insolvent banks is inconsistent with the classical prescription. Liberal assistance to insolvent banks, combined with deposit insurance which is not priced according to risk, encourages excessive risk-taking, creating the conditions for even greater assistance to insolvent banks in the future.

In sum, the historical record for a number of countries suggests that monetary authorities following the classical precepts of Thornton and Bagehot can prevent banking panics. Against the free banking view, the record suggests that such a role must be provided by a public authority. Moreover, contrary to Goodhart's view, successful LLR actions in the past did not require assistance to insolvent banks. Finally, the record suggests that the monetary authority's task would be eased considerably by allowing nationwide branch banking and by following a policy geared towards price level stability. Under such a regime, as Goodfriend and King argue, open market operations would be sufficient to offset unexpected scrambles for liquidity.

¹⁶ Although in the U.S., the policy of purchase and assumption carried out by the FDIC and FSLIC before that date incorporated elements of public subsidy.

REFERENCES

- Bagehot, W. (1873). *Lombard Street: A Description of the Money Market*. London: H.S. King.
- Benston, G. J. (1983). "Deposit Insurance and Bank Failures." Federal Reserve Bank of Atlanta *Economic Review*. (March), pp. 4-17.
- Benston, G. J., et al. (1986). *Perspectives on Safe and Sound Banking: Past, Present, and Future*. Cambridge: MIT Press.
- Bordo, M. D. (1981). "The Classical Gold Standard: Some Lessons for Today." Federal Reserve Bank of St. Louis *Review*. (May), 63: 2-17.
- (1986). "Financial Crises, Banking Crises, Stock Market Crashes and the Money Supply: Some International Evidence, 1870-1933." In F. Capie and G. E. Wood (eds.), *Financial Crises and the World Banking System*. London: MacMillan.
- Bordo, M. D. and A. Redish (1987). "Why did the Bank of Canada Emerge in 1935?" *Journal of Economic History*. (June), 47(2): 401-17.
- Cagan, P. (1965). *Determinants and Effects of Changes in the Stock of Money, 1875-1960*. New York: Columbia University Press.
- (1988). "Commentary." In W. S. Haraf and R. M. Kushmeider, (eds.) *Restructuring Banking and Financial Services in America*. Washington: American Enterprise Institute.
- Calomiris, C. (1989). "Deposit Insurance: Lessons from the Record." Federal Reserve Bank of Chicago *Economic Perspectives*. (May-June), pp. 10-30.
- Cowen, T. and R. Kroszner (1989). "Scottish Banking Before 1845: A Model for Laissez-Faire." *Journal of Money, Credit and Banking*. (May), 21(2): 221-31.
- Dowd, K. (1988). *Private Money: The Path to Monetary Stability*. Institute of Economic Affairs Hobart Paper 112. London.
- Friedman, M. (1960). *A Program for Monetary Stability*. New York: Fordham University Press.
- Friedman, M. and A. J. Schwartz (1963). *A Monetary History of the United States*. Princeton: Princeton University Press.
- Garcia, G. and E. Plautz (1988). *The Federal Reserve: Lender of Last Resort*. Cambridge: Ballinger Publishing Company.
- Goodfriend, M. (1989). "Money, Credit, Banking, and Payments System Policy." In D. B. Humphrey (ed.), *The U.S. Payments Systems: Efficiency, Risk and the Role of the Federal Reserve*. Boston: Kluwer Academic Publishers.
- Goodfriend, M. and R. A. King, (1988). "Financial Deregulation, Monetary Policy, and Central Banking." In W. S. Haraf and R. M. Kushmeider (eds.), *Restructuring Banking and Financial Services in America*. Washington: American Enterprise Institute.
- Goodhart, C. A. E. (1985). *The Evolution of Central Banks*. London: London School of Economics and Political Science.
- (1987). "Why Do Banks Need a Central Bank?" *Oxford Economic Papers*. (March), 39:75-89.
- Gorton, G. (1985). "Clearing houses and the Origins of Central Banking in the U.S." *Journal of Economic History*. (June), 45: 277-84.
- Gorton, G. and D. J. Mullineaux (1987). "Joint Production of Confidence: Endogenous Regulation and 19th Century Commercial Bank Clearinghouses." *Journal of Money, Credit and Banking*. (November), 19(4): 457-68.
- Hasan, I. and G. P. Dwyer, Jr. (1988). "Contagious Bank Runs in the Free Banking Period." (mimeo). Cliometrics Conference, Oxford, Ohio.
- Hirsch, F. (1977). "The Bagehot Problem." *Manchester School of Economics and Social Studies*. (September), 45(3): 241-57.
- Humphrey, T. (1975). "The Classical Concept of the Lender of Last Resort." Federal Reserve Bank of Richmond *Economic Review*. (January/February), 61:2-9.
- (1989). "Lender of Last Resort: The Concept in History." Federal Reserve Bank of Richmond *Economic Review*. (March/April), 75: 8-16.
- Jonung, L. (1985). "The Economics of Private Money: the Experience of Private Notes in Sweden, 1831-1902." (mimeo) Lund University.
- Kaufman, G. G. (1988). "The Truth about Bank Runs." In C. England and T. Huertas (eds.), *The Financial Services Revolution*. Boston: Kluwer Academic Publishers.
- Kindleberger, C. (1978). *Manias, Panics and Crashes*. London: MacMillan.
- Meltzer, A. (1986). "Financial Failures and Financial Policies." In G. G. Kaufman and R. C. Kormendi (eds.), *Deregulating Financial Service: Public Policy in Flux*. Cambridge: Ballinger Publishing Company.
- Morgenstern, O. (1959). *International Financial Transactions and Business Cycles*. Princeton: Princeton University Press.
- Rockoff, H. (1986). "Walter Bagehot and the Theory of Central Banking." In F. Capie and G. E. Wood (eds.), *Financial Crises and the World Banking System*. London: MacMillan.
- Rolnick, A. and W. Weber. (1985). "Inherent Instability in Banking: The Free Banking Experience." *Cato Journal*, May.
- Schubert, A. (1987). "The Creditanstalt Crisis of 1931—A Financial Crisis Revisited." *Journal of Economic History*. (June), 47(2).
- Schwartz, A. J. (1988). "Financial Stability and the Federal Safety Act." In W. S. Haraf and R. M. Kushmeider (eds.), *Restructuring Banking and Financial Services in America*. Washington: American Enterprise Institute.
- (1986). "Real and Pseudo—Financial Crises." In F. Capie and G. E. Wood (eds.), *Financial Crises and the World Banking System*. London: MacMillan.
- Selgin, G. A. (1988). *The Theory of Free Banking: Money Supply Under Competitive Note Issue*. Totowa, N. J.: Rowman and Littlefield.
- (1990). "Legal Restrictions, Financial Weakening, and the Lender of Last Resort." *Cato Journal*. forthcoming.

- Solow, R. M. (1982). "On the Lender of Last Resort." In C. P. Kindleberger and J. P. Laffargue (eds.), *Financial Crises: Theory, History and Policy*. Cambridge: Cambridge University Press.
- Thornton, H. (1802). *An Enquiry into the Nature and Effects of the Paper Credit of Great Britain*. Edited by F. A. Hayek. Fairfield: Augustus M. Kelley.
- Timberlake, R., Jr. (1984). "The Central Banking Role of Clearing House Associations." *Journal of Money, Credit and Banking*. (February), 16:1-5.
- (1978). *The Origins of Central Banking in the United States*. Cambridge: Harvard University Press.
- Weber, E. J. (1988). "Currency Competition in Switzerland, 1826-1850." *Kyklos*. 41.4 (3):459-78.
- White, E. N. (1981). "State Sponsored Insurance of Bank Deposits in the United States, 1907-20." *Journal of Economic History*. (March), 13(1): 33-42.
- White, L. H. (1984). *Free Banking in Britain: Theory, Experience, and Debate 1800-1945*. Cambridge: Cambridge University Press.