

FINANCIAL INNOVATION IN THE UNITED STATES- BACKGROUND, CURRENT STATUS AND PROSPECTS*

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The purpose of this paper is to describe recent financial innovation in the United States, outline its principal implications with regard to (1) the structure and behavior of financial markets and (2) the conduct of monetary policy, and speculate on the likely character of further innovation in the near-term future. In the United States as elsewhere, financial innovation has been a continuous but uneven process, where the rate of innovation has varied substantially from one period to the next depending on a variety of circumstances. In particular, there have been a number of periods of accelerated innovation in U. S. financial history, frequently during or following periods of great social and political upheaval such as the Civil War and the Great Depression. It seems clear in retrospect that the 1970s and early 1980s have been years of relatively rapid innovation due largely to (1) higher inflation and its impact on interest rates and (2) rapid technological progress that has significantly reduced the real costs of carrying out financial transactions. This accelerated innovation has already had a profound effect on the competitive structure and risk characteristics of American banking and financial markets, on the way these markets are regulated, and on the conduct of U. S. monetary policy. Further, while there is some reason to believe that the pace of innovation may diminish in the United States in the years immediately ahead, the full impact of the innovations that have already occurred probably has not yet been felt.

The paper is organized as follows. Section I provides background information on the structure and regulation of American financial markets, with

special attention to the regulation of banks and other depository institutions. Section II describes the forces that appear to underlie the accelerated rate of financial innovation in recent years. Sections III and IV discuss the impact of this innovation on financial markets and the conduct of monetary policy, respectively. Finally, Section V speculates briefly on future prospects. In view of the breadth of the topic and the purpose of the symposium for which this paper was prepared, the paper will seek to synthesize available information on recent financial innovation in the United States rather than to break new analytical ground.

I.

BACKGROUND INFORMATION ON THE STRUCTURE AND REGULATION OF U. S. FINANCIAL MARKETS

This section provides background information on the general structure of U. S. financial markets and the regulation of these markets. This perspective is essential to an understanding of the nature of recent financial innovation and the forces underlying it.

A. Structure of U. S. Financial Markets

As is well known, the money and capital markets in the United States are among the largest and most highly developed in the world. Tables I and II provide a general idea of the size, scope and structure of these markets. Table I is a flow of funds table that shows total net new demands for and supplies of funds in U. S. credit markets in recent years in both dollar and percentage terms. In addition, the final column on the right side of the table shows total amounts outstanding at the end of 1983.² As the table indicates, total new credit flows in 1983 amounted to \$515.5 billion. On the demand side,

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¹The paper is organized roughly along the lines of the framework suggested by M. A. Akhtar. See Akhtar, "Financial Innovation and Monetary Policy: A Framework for Analysis," in Bank for International Settlements (1984), pp. 3-25.

²Table I includes only debt instruments and therefore excludes equity funds. The net issuance of corporate stock in 1983 was \$46.2 billion. Total corporate stock outstanding at the end of 1983 was \$2,151.4 billion. See Kaufman, McKeon and Blitz (1984), Table 3C, p. 33.

Table 1

DEMAND FOR AND SUPPLY OF CREDIT IN U. S. CREDIT MARKETS

	1978	1979	1980	1981	1982	1983*	Amount Outstanding December 1983*
A. NET DEMAND							
1. Annual Net Increases in Amounts Outstanding (\$ billions)							
Privately Held Mortgages	\$117.7	\$113.1	\$84.2	\$73.7	\$12.4	\$67.0	\$1,319.5
Corporate and Foreign Bonds	34.4	31.9	39.0	33.9	38.8	35.3	617.5
Total Long-Term Private	152.1	144.9	123.2	107.6	-102.3	51.1	1,937.0
Short-Term Business Borrowing	92.2	98.0	67.6	118.6	55.5	44.9	853.5
Short-Term Household Borrowing	52.4	49.3	9.8	35.1	23.9	49.9	575.4
Total Short-Term Private	144.6	147.3	77.4	153.7	79.4	94.8	1,428.9
Privately Held Federal Debt	86.5	78.6	119.5	128.9	210.9	265.9	1,504.2
Tax-Exempt Notes and Bonds	32.5	27.8	31.9	29.2	63.6	52.6	474.7
Total Government Debt	119.0	106.5	151.3	158.2	274.5	318.5	1,978.9
TOTAL	\$415.7	\$398.7	\$351.9	\$419.4	\$405.0	\$515.5	\$5,344.8
2. Percentages ¹							
Privately Held Mortgages	28.3	28.4	23.9	17.6	3.1	13.0	24.7
Corporate and Foreign Bonds	8.3	8.0	11.1	8.1	9.6	6.8	11.6
Total Long-Term Private	36.6	36.4	35.0	25.7	12.6	19.8	36.2
Short-Term Business Borrowing	22.2	24.6	19.2	38.3	13.7	8.7	16.0
Short-Term Household Borrowing	12.6	12.4	2.8	8.4	5.9	9.7	10.8
Total Short-Term Private	34.8	36.9	22.0	36.6	19.6	18.4	26.7
Privately Held Federal Debt	20.8	19.7	34.0	30.7	52.1	51.6	28.1
Tax-Exempt Notes and Bonds	7.8	7.0	9.1	7.0	15.7	10.2	a.9
Total Government Debt	28.6	26.7	43.0	37.7	67.8	61.8	37.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
B. NET SUPPLY							
1. Annual Net Increases in Amounts Outstanding (\$ billions)							
Total Nonbank Finance	\$174.5	\$175.7	\$152.0	\$199.9	\$178.5	\$267.3	\$2,423.2
Thrift Institutions	72.8	56.7	54.9	27.2	30.6	126.2	949.5
Insurance, Pensions, and Endowments	72.4	62.0	68.2	72.4	91.0	109.1	998.8
Investment Companies	6.6	29.3	15.9	72.4	52.3	8.0	213.2
Other Nonbank Finance	22.7	27.8	12.9	28.0	4.6	24.1	261.7
Commercial Banks	126.1	122.2	101.8	108.9	108.5	146.3	1,600.3
Nonfinancial Corporations	-0.9	7.5	-3.8	5.4	15.5	13.6	120.2
State and Local Governments	16.0	7.1	1.8	0.5	6.4	15.2	77.1
Foreign Investors	38.0	-4.6	23.2	16.0	17.6	12.8	238.5
Residual: Households Direct	61.8	90.6	76.9	88.7	78.5	60.3	885.1
TOTAL	\$415.7	\$398.7	\$351.9	\$419.4	\$405.0	\$515.5	\$5,344.8
2. Percentages ¹							
Total Nonbank Finance	42.0	44.1	43.2	47.7	44.1	51.9	45.3
Thrift Institutions	17.5	14.2	15.6	6.5	7.6	24.5	17.8
Insurance, Pensions, and Endowments	17.4	15.6	19.4	17.3	22.5	21.2	18.7
Investment Companies	1.6	7.3	4.5	17.3	12.9	1.6	4.0
Other Nonbank Finance	5.5	7.0	3.7	6.7	1.1	4.7	4.9
Commercial Banks	30.3	30.6	28.9	26.0	26.8	28.4	29.9
Nonfinancial Corporations	-0.2	1.9	-1.1	1.3	3.8	2.6	2.2
State and Local Governments	3.8	1.8	0.5	0.1	1.6	2.9	1.4
Foreign Investors	9.1	-1.2	6.6	3.8	4.3	2.5	4.5
Residual: Households Direct	14.9	22.7	21.9	21.1	19.4	11.7	16.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Estimated.

¹Details may not add to totals due to rounding.

Source: Kaufman, Henry, James McKeon and Steven Blitz, 1984 Prospects for Financial Markets, New York: Salomon Brothers, Inc., December 1983, p. 28.

new government debt accounted for approximately 62 percent of the total, and new private debt made up the remainder. As section A2 of the table makes clear, the principal development affecting the structure of the demand for credit in the years shown has been the disproportionate growth of government debt and especially the growth of federal debt. The net increase in privately held federal debt rose from a little over 20 percent of total net demand in 1978 to almost 52 percent in 1983. Although part of this increase reflected normal cyclical developments,³ the substantial increase in federal expenditures over the last two decades has produced a strong secular increase in the growth of federal demands for credit. Section B2 of the table shows the breakdown of the supply of funds across various categories of lenders. In 1983, commercial banks provided slightly less than 30 percent of new funds. All depository institutions (commercial banks plus thrift institutions) provided somewhat more than half of all funds.

Table II looks more specifically at the relative size of various classes of financial institutions using data on the stocks of financial assets held in 1983. As the data indicate, depository institutions as a group accounted for over half of the total; commercial banks held approximately a third.

Tables I and II focus on the structure of U. S. financial markets in terms of dollar flows and stocks. To appreciate fully the nature of the American financial system, however, one must take account of the institutional and geographic character of these markets. In general, financial markets are less centralized in the United States than in most other industrial countries. While New York City is clearly the financial center of the country, there are important regional market centers, including regional stock exchanges, in several other major cities. Nowhere is the relative decentralization of U. S. markets more apparent, however, than in the case of commercial banks.⁴ As of the end of 1983 there were 14,454 insured commercial banks in the United States of which 4,751 were national banks chartered by the federal government and the remainder were state banks chartered by the various state governments. Although several major international banking organizations are based in the United States, overall banking resources are

³1978 was the fourth year of the business expansion that followed the recession that ended in the first quarter of 1975. 1983 was the first year of the recovery from the recession that ended in the fourth quarter of 1982.

⁴The historical and regulatory factors that have influenced the structure of the U. S. banking industry are discussed below.

Table II
FINANCIAL ASSETS HELD BY U. S.
FINANCIAL INSTITUTIONS

	1983	
	\$ Billions	Percent of Total
Total Depository Institutions	\$2,526.3	53.4
Commercial banks and affiliates	1,496.3	31.6
Foreign banking offices	67.7	1.4
Savings and loan associations	703.8	14.9
Mutual savings banks	169.4	3.6
Credit unions	89.1	1.9
Life Insurance Companies	514.4	10.9
Private Pension Funds	276.6	5.9
State and Local Government Retirement Funds	216.1	4.6
Finance Companies	254.8	5.4
Mutual Funds	54.1	1.1
Money Market Mutual Funds	102.4	2.2
Sponsored Credit Agencies	236.2	5.0
Mortgage Pools	244.9	5.2
Federal Reserve System	161.2	3.4
Other	141.2	3.0
TOTAL	\$4,728.2	100.0

Source: Board of Governors of the Federal Reserve System.

considerably less concentrated than in most other countries. In December 1982, the 10 largest banking organizations based in the United States held only about 18 percent of total domestic deposits.

B. The Regulation of U. S. Markets

A thorough review of the regulation of the U. S. financial system is beyond the scope of this paper.⁵ The extent and intensity of regulation vary greatly across markets, from the minimal regulation of the market for U. S. government securities to the comprehensive regulation of commercial banks. It is the regulatory system applied to banks and other depository institutions that is most relevant to recent financial innovation in the United States. Therefore, the remainder of this section focuses primarily on banking regulation.

1. Evolution of banking regulation in the United States Banking has been systematically regulated in the United States throughout the nation's history. The character of this regulatory apparatus has changed significantly from one period to the next,

⁵For a comprehensive recent survey see George J. Benston, "The Regulation of Financial Services," in Benston (1983B), pp. 28-63.

and it has been a major source of political controversy since the earliest days of the republic. Indeed, one of the principal political debates in the years immediately following the Revolution centered around the question of whether the federal government or the respective state governments should predominate in the regulation of banks.

This issue has never been fully resolved. The period from the Revolution until 1836 was one of constant tension. The majority of banks were chartered and supervised by the states. The federal government chartered only two banks in this period, the First Bank of the United States (1791-1811) and the Second Bank of the United States (1816-1836). These two banks, however, had branches nationwide, exercised some central banking functions, and, as a result, became principal targets for those who sought to restrict the growth of the power of the federal government.

When President Andrew Jackson vetoed the legislation that would have renewed the charter of the Second Bank, the states temporarily gained ascendancy in banking regulation. Further, between 1837 and 1860 a number of states adopted so-called "free banking" laws under which banks could be freely established as long as certain minimum, well-defined conditions regarding capital and collateralization of notes were met. This period has usually been regarded as an unsuccessful experiment with "laissez-faire" banking during which the absence of regulation led to abuses (by so-called "wildcat" banks) that demonstrated the need for greater regulation.⁶ The extent of regulation began to increase gradually in the 1860s, and the federal government slowly but surely reestablished its participation with the passage of the National Banking Act in 1863 and the Federal Reserve Act in 1913.⁷

2. *Foundation of the present regulatory system*

Although the history of banking regulation prior to the early 1930s has an important bearing on the present regulatory system, especially with regard to geographic restrictions on branching, the major force that shaped the current system was the reaction to

⁶This view of the Free Banking Era has been challenged in an important recent article by Rolnick and Weber (1983).

⁷For more detailed discussions of banking regulation in the nineteenth and early twentieth centuries see Thomas C. Huertas, "The Regulation of Financial Institutions: A Historical Perspective on Current Issues," in Benston (1983B). See also McCarthy (1984). The standard works on the period are Friedman and Schwartz (1963) and Hammond (1957).

the traumatic banking crisis that accompanied the Great Depression. Some monetary historians now attribute the crisis to the failure of the Federal Reserve System to provide adequate reserves to the banking system in the face of an international financial panic and a major worldwide economic contraction.⁸ At the time, however, the upheaval was blamed mainly on (1) excessive competition in the provision of banking services and (2) speculative activity and conflicts of interest that resulted from the active participation of commercial banks in investment banking activities in the 1920s. The comprehensive banking legislation of the early 1930s, which is the foundation of the present regulatory system, was designed to correct these perceived weaknesses.

The main elements of this legislation were as follows :

(a) Separation of commercial and investment banking. The Banking Act of 1933, known popularly as the Glass-Steagall Act, prohibited commercial banks from engaging in most underwriting and other investment banking activities. The idea was that commercial banks would invest primarily in short-term, "self-liquidating" commercial loans and other liquid assets in accordance with the real-bills doctrine that was influential at the time. This effort to keep commercial banking separate from the securities industry and other commercial activities has been extended by more recent legislation, particularly the Bank Holding Company Act of 1956 and the 1970 amendments to that Act.

(b) Restrictions on the payment of interest on deposits. Banks were prohibited from paying interest on demand deposits, and the Federal Reserve was given the authority to set ceiling rates on time deposits. The Fed has regulated time deposit rates over the years through its Regulation Q.

(c) Deposit insurance and restrictions on entry. The Banking Act of 1933 established the Federal Deposit Insurance Corporation to administer a national deposit insurance system. It set specific and generally restrictive conditions for the granting of national charters and indirectly set standards for state charters through the conditions imposed for admission to the insurance system.

(d) Maintenance of geographic restrictions on branching. The banking legislation of the 1930s left the restrictions on branching contained in the Mc-

⁸See Friedman and Schwartz (1963), chapter 7.

Fadden Act of 1927 unchanged. Under these restrictions, interstate branching was prohibited, and nationally chartered banks had to conform to any further restrictions imposed by state law in the states in which they operated.

The general thrust of this regulatory system is clear. Commercial banking was to be insulated from other financial and commercial activities. In order to promote stability, entry into the industry, entry into particular geographic markets, and price competition were to be severely limited. In the Hegelian dialectic, thesis generates forces producing antithesis, and the tension is eventually resolved through synthesis. In U. S. financial markets, the regulatory system established in the 1930s is the thesis, and the extensive financial innovation of recent years is the antithesis. The synthesis of these opposing forces is presently being formed.

II.

FORCES UNDERLYING RECENT FINANCIAL INNOVATION IN THE UNITED STATES

As suggested at the end of the preceding section, recent financial innovation in the United States is largely a reaction to the restrictive and essentially anti-competitive regulatory system established in the 1930s. The forces motivating this innovation have existed since the system came into being, but they have been greatly strengthened over the last 25 years by two essentially external developments: (1) accelerated technological progress in the computer and communications industries and (2) a secular increase in the rate of inflation accompanied by high and volatile interest rates. This section briefly describes these developments.

A. Technological Advances

Technological progress in the computer and communications fields in recent years has led to a truly phenomenal reduction in the real cost of processing and transmitting data. It has been estimated that between the mid-1960s and 1980 computer processing costs declined at an average annual rate of 25 percent, and communications costs fell at a rate of 11 percent.⁹ The impact of these developments has been especially great in banking and financial markets. In particular, the quantum reduction in real transactions costs has made it both feasible and profitable for banks to offer,

⁹See Kaufman, Mote and Rosenblum (1983), p. 9.

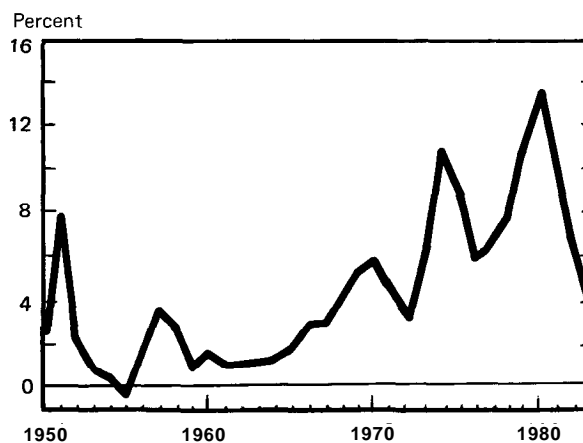
and for business firms and households to use, sophisticated cash management techniques to reduce the proportion of liquid assets held in deposits or other instruments subject to interest rate ceilings. This same technology has made it feasible for nonbank financial institutions such as securities firms to offer financial products that combine their traditional investment services with transactions services that closely resemble those formerly provided exclusively by commercial banks. The Cash Management Account offered by Merrill Lynch, for example, which combines a conventional securities account with a credit line and a money market fund that has a third-party payments capability would not have been feasible in the absence of the ability to process, record and store large volumes of data relatively inexpensively. The same is true of a myriad of other cash management services now offered by both banks and other financial institutions and of the infrastructure that supports them such as electronic funds transfer systems and automated clearinghouses.

B. Inflation and Interest Rates

The technological developments described above would have had a substantial impact on cash management practices in any event, but the incentive to develop these techniques has been greatly increased by the behavior of inflation and interest rates in the United States since roughly 1965. As indicated by Chart 1, the inflation rate was below 3 percent during most of the period between the Korean War and the

Chart 1

INFLATION SINCE 1950 (Annual Changes in Consumer Price Index)



Source: U.S. Department of Labor, Bureau of Labor Statistics.

mid-1960s. After 1964, the expansive fiscal and monetary policies associated with enlarged domestic social programs and the financing of the war in Vietnam and subsequently the petroleum shocks of the 1970s produced a steady if irregular increase in inflation to a peak rate exceeding 13 percent in 1980. While not particularly high by world standards, this was the highest peacetime inflation in modern American history.

The rise in inflation was accompanied by corresponding increases in the level and volatility of interest rates, which can be seen in Chart 2. Through most of the 1950s and early 1960s, the opportunity cost of holding non-interest-bearing demand deposits and savings or other time deposits subject to Regulation Q ceilings was either relatively low or non-existent. The so-called credit crunch of 1966, however, was the first of a series of tight credit episodes during which market rates rose significantly above the Regulation Q ceilings. Initially, these episodes occasioned massive but generally temporary transfers of funds from accounts subject to the ceilings to market instruments such as Treasury bills. This "disintermediation" of funds was both costly and disruptive. In particular, because the majority of mortgage credit in the 1960s and early 1970s was provided by savings and loan associations and other thrift institutions that derived most of their funds from time deposits subject to the ceilings, disintermediation led to severe periodic restrictions of the availability of credit to support residential construc-

tion. The housing and building trades lobbies are powerful political forces in the United States, and the disruption of these industries by disintermediation was an important factor leading to the reevaluation of banking regulation discussed below.

As Chart 2 shows, market interest rates have exceeded the Regulation Q passbook ceiling both substantially and continuously since the end of 1976.¹⁰ As a result, the temporary disintermediation that characterized the period between 1965 and 1977 has been supplanted by the more comprehensive and permanent innovations described in the next section.

Aside from the higher *level* of interest rates and the incentives it has created, Chart 2 shows that the *variability* of rate movements has also increased sharply over the last decade.¹¹ This greater variability has increased uncertainty and risk in financial markets—particularly in markets for long-term securities. This increased interest rate risk has created strong incentives for financial institutions to devise new financial instruments and develop new markets that make it possible for institutional and other investors to reduce their exposure to risk.

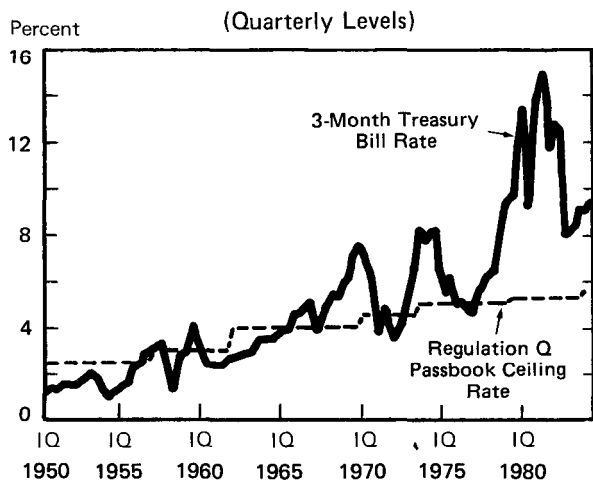
III.

INNOVATION IN FINANCIAL MARKETS

The combination of forces and incentives described in Section II of this paper has produced a series of financial innovations in the United States that have become increasingly visible to the general public since the late 1950s. Rather than attempting an exhaustive inventory,¹² this section will focus on the major innovations. Special attention will be given to innovations in banking and depository markets, since these particular innovations have important implications for the conduct of monetary policy as well as the provision of financial services.¹³ In addition to discussing the innovations themselves, the important movement toward the deregulation of

Chart 2

INTEREST RATES SINCE 1950



Source: Board of Governors of the Federal Reserve System.

¹⁰ Ceiling rates on other time deposits subject to ceilings were scaled upward from the passbook ceiling.

¹¹ This heightened variability may have been due in part to changes in late 1979 in the operating procedures used by the Federal Reserve to implement monetary policy. These changes shifted the short-run operational emphasis from the Federal funds rate to various reserve aggregates. See Axilrod (1982).

¹² A comprehensive listing as of the end of 1982 can be found in Silber (1983), p. 91.

¹³ The monetary policy implications are discussed in Section IV below.

interest rates that is currently in progress will be summarized to date,¹⁴ and the impact of these developments on the quantitative structure of depository markets will be detailed.

A. Innovation in Banking Markets

Innovation in banking and other depository markets has been proceeding at a rapid pace for at least a quarter of a century.¹⁵ The initial developments primarily affected commercial banks and their corporate customers. By the end of the 1970s, however, it involved all depository institutions and a number of nondepository and even nonfinancial firms, and household as well as business customers.

1. ***The 1960s and Early 1970s: The "Cat and Mouse" Game between Banks and Regulators and Initial Steps toward Deregulation*** By the late 1950s it had become apparent to most money center banks in the United States that many major corporate customers had sharpened their cash management practices and found ways to lower their average holdings of non-interest-bearing deposits. Since these deposits were a major source of funds for these banks, it was essential that the banks react to this development, which they did with the introduction of large negotiable CDs in 1961. These CDs bore interest, although they were initially subject to the Regulation Q ceiling. The important thing about the negotiable CD was precisely that it was negotiable. Hence, when it neared maturity, it was essentially a marketable, interest-bearing liquid asset, in contrast to ordinary time deposits, which could not be transferred and could not bear interest at maturities under 30 days. The negotiable CD was a huge success in the early 1960s, and it allowed the money center banks to regain at least temporarily much of the ground they had lost. Beyond that, the negotiable CD introduced the concept of "liability management," which dramatically altered the character of wholesale banking in the United States. Prior to that time, banks had depended primarily on demand deposits as their major funding source. Since banks were prohibited from paying explicit interest on these deposits, they compensated their business customers-and to a

lesser degree their household customers-implicitly by providing them a variety of free services, especially payments services. The negotiable CD substituted explicit interest for implicit interest. By varying the rate of interest, banks could actively influence the volume of deposit inflows rather than merely accepting deposits passively. Further, since negotiable CDs involved no payments services, their introduction moved banks in the direction of pure intermediation.¹⁶ While these changes benefited banks in a number of ways, they also exposed them to the risk of unanticipated short-run swings in the cost of funds due to market forces beyond their control.

The volume of negotiable CDs grew steadily up to

¹⁶ See Heurtes, "The Regulation of Financial Institutions," in Benston (1983B), p. 24.

Table III
MAJOR ACTIONS TO DEREGULATE
INTEREST RATES ON DEPOSITS

Year	Action
1972	Negotiable Order of Withdrawal (NOW) accounts introduced in Massachusetts.
1973	'Wild card' experiment. Initial use of ceiling-free, small denomination time deposits. Deposits had minimum maturity of 4 years. Experiment lasted 4 months.
1978	Introduction of 6-month money market certificates with yields tied to 6-month Treasury bill rate.
1979	Introduction of small saver certificates, with yields tied to U. S. Treasury securities with comparable maturities. Minimum maturity initially 4 years, but subsequently reduced.
1980	Passage of Depository Institutions Deregulation and Monetary Control Act. 1. Set 6-year phase out of interest rate ceilings on time deposits. 2. Authorized NOW accounts nationwide, effective at the end of 1980.
1981	Introduction of nationwide NOW accounts. Introduction of ceiling-free Individual Retirement Accounts (IRAs).
1982	Introduction of several new accounts paying market rates. 1. 91-day money market certificate. 2. 3½-year ceiling-free time deposit. 3. 7-31 day time deposit. Passage of Garn-St. Germain Act, which authorized money market deposit accounts.
1983	Nearly complete deregulation of interest rates on time deposits. 1. Elimination of ceilings on all time deposits with original maturities exceeding 32 days. 2. Elimination of all ceilings on time deposits with original maturities from 7 to 31 days with minimum balance of \$2,500.

¹⁴ Table III lists the principal actions taken to deregulate interest rates between 1972 and 1983.

¹⁵ Several economists have attempted to formulate theoretical models to capture the nature of the process described in this section. See in particular Ben-Horim and Silber (1977) and Kane, "Microeconomic and Macroeconomic Origins of Financial Innovation," in Federal Reserve Bank of St. Louis (1984), pp. 3-20.

1966, but the credit crunch of that year drove market rates well above the Regulation Q ceiling, and this condition persisted through most of the remainder of the decade. As a result, banks again experienced large outflows of funds and were driven to seek alternative sources not subject to the ceiling. There ensued what has been described as a “cat and mouse” game in which banks would first develop either (1) a new source, such as borrowing Eurodollars from offshore affiliates, or (2) new short-term instruments, such as commercial paper issued by holding company affiliates and various forms of RP contracts. After a brief delay, the Federal Reserve would then step in, define the instrument as a deposit and subject it to the Regulation Q ceiling and to reserve requirements. In short, the 1960s illustrated the cycle of banking innovation, regulatory reaction and further innovation in an especially dynamic form.

While this process was fascinating to witness and highly profitable to the lawyers, accountants and other specialists employed by it, it was also costly, both to individual institutions and to society as a whole in terms of its relatively inefficient use of real resources to avoid regulatory constraints. By the early 1970s it had become apparent to financial economists and many public officials that the bank regulatory system that had been built in the 1930s was not an appropriate structure for the financial environment of the 1970s. Several events occurred in this period that were the initial steps in the deregulation process that reached its full stride in the early 1980s. First, in the face of continued disintermediation, the Regulation Q ceiling was lifted in 1970 for CDs over \$100,000. Second, a Presidential Commission on Financial Structure and Regulation (the Hunt Commission) issued an important report at the end of 1971 that recommended among other things that all ceilings on time deposits be phased out over a five-year period and that both thrift institutions and banks be granted somewhat broader powers. Banks, in particular, would be allowed to underwrite some municipal revenue bonds and sell mutual funds.¹⁷ Finally, so-called NOW (for negotiable order of withdrawal) accounts were introduced in several New England states beginning in 1972. These essentially transactions accounts were functionally equivalent to demand deposits but they bore explicit interest. NOW accounts were originally devised by thrift

¹⁷For an interesting retrospective on the influence of the Hunt Commission's report written by the Commission's co-directors, see Almarin Phillips and Donald P. Jacobs, “Reflections on the Hunt Commission,” in Benston (1983B), chapter 9.

institutions as a means of competing more effectively with commercial banks for retail customers, but their broader significance was that they were the first financial innovation to have a direct (and beneficial) effect on ordinary retail customers as opposed to corporations and wealthy individuals.

2. 1975-1983: Accelerated Innovation, Increased Competition and Deregulation As indicated in Chart 2, the sustained rise in market interest rates well above Regulation Q ceilings after 1976 greatly increased the incentive for banks to devise means to circumvent the restriction. The rise in rates also increased the opportunity cost of the non-interest-bearing reserves that banks that were members of the Federal Reserve System were required to hold, which caused many banks to drop their membership and created strong incentives to devise instruments not subject to reserve requirements. Finally, as suggested above, technological advances coupled with the relatively high profitability of banking activities created powerful incentives for nonbank institutions to enter banking markets and provide bank and quasi-bank services. These conditions ignited an explosion of financial innovation and subsequent deregulation in depository markets over the eight-year period between 1975 and 1983.

A key innovation in this period was the money market mutual fund (MMMF).¹⁸ These funds are pools of liquid assets managed by investment companies that sell small denomination shares in the funds to the public. Although the funds are not covered by deposit insurance, they are backed fully by high quality liquid assets, are not subject to rate ceilings or reserve requirements, and in some cases allow limited third-party transactions. Aggregate MMMF assets grew rapidly after 1976, from \$3.3 billion in 1977 to \$76.3 billion in 1980 to \$186.9 billion in 1981. (See Chart 3.)

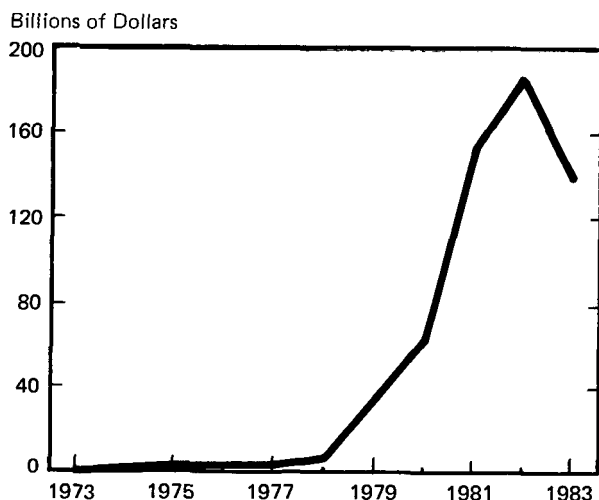
The growth of MMMFs put enormous competitive pressure on U. S. banks. The banks, in turn, put substantial pressure on the regulatory agencies and Congress for relief. The first response to this pressure was the authorization of so-called money market certificates (MMC) by the regulatory agencies. These certificates had no third-party payment capability, but they were covered by deposit insurance, and they had a rate ceiling that floated with the 6-month Treasury bill rate.

The MMCs were generally well received, but they

¹⁸See Cook and Duffield (1979) for an extensive description and analysis of MMMFs.

Chart 3

GROWTH OF MONEY MARKET MUTUAL FUND (MMMF) BALANCES IN THE U.S., 1973-1983



Source: Board of Governors of the Federal Reserve System.

did not significantly reduce the growth of MMMFs. Intense political pressure for further deregulation developed and culminated in the passage of the Depository Institutions Deregulation and Monetary Control Act in March 1980. This watershed legislation was the most comprehensive banking law enacted by Congress since the Banking Acts of 1933 and 1935. It had a large number of diverse provisions, but the critical ones were the following:

1. All interest rate ceilings on time deposits were to be phased out over a six-year period.
2. NOW accounts were authorized for all banks and thrift institutions nationwide, effective December 31, 1980. (The accounts can be offered to individuals but not to corporations.)
3. State usury laws that put ceilings on mortgage rates were to be eliminated unless a state government specifically passed a law reinstating the ceiling.
4. The restrictions on the ability of thrift institutions such as savings and loan associations to invest in assets other than residential mortgages were eased somewhat.
5. All depository institutions were given access to the Federal Reserve discount window and to other Fed services, but they were also subjected to Federal Reserve reserve requirements.

The importance of this legislation in the context of the historical perspective developed earlier in this article should be apparent. In particular, the lifting of interest rate restrictions in items 1, 2, and 3 above reversed a fundamental element-and, implicitly, a fundamental premise-of the 1930s legislation: that price (i.e., interest rate) competition in banking markets is unhealthy.

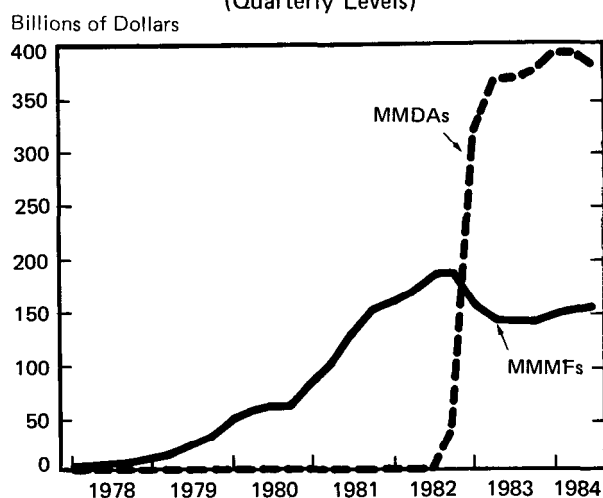
The final steps in the process of deregulation to date were taken in 1982 and 1983 following passage of the Garn-St. Germain Act in late 1982. Like the 1980 law, this Act contained numerous detailed provisions, but the most important authorized banks and other depository institutions to offer accounts with characteristics similar to those of MMMFs. In accordance with this legislation, banks and thrifts introduced money market deposit accounts (MMDAs) in December 1982. Subsequently, so-called Super NOW accounts were introduced in January 1983. Neither of these instruments is subject to a rate ceiling. The principal difference between the two accounts is that there are no limits on the number of third-party payments transactions that can be made with a Super NOW account, while there are limits in the case of MMDA accounts. Since Super NOWs have more of the characteristics of pure transactions accounts than MMDAs, they are subject to the same reserve requirements as ordinary demand deposits and other transactions accounts. MMDAs are considered savings deposits, which are not subject to reserve requirements. Further, Super NOWs, because of their greater transactions powers, typically have lower yields than MMDAs.¹⁹ Unlike MMMFs, both MMDAs and Super NOWs are covered by federal deposit insurance. At present, however, both instruments require a \$1,000 minimum balance.

The authorization of MMDAs and Super NOWs has done much to restore the competitive position of commercial banks and thrifts in depository markets. Since most MMMFs, like MMDAs, limit the number of third-party payments the holder of an account can make, these two instruments are generally similar, and it is appropriate to compare their growth since the introduction of MMDAs. As Chart 4 shows, MMDAs grew explosively immediately following their introduction to a dollar level of approximately \$350 billion, well above the peak level attained by

¹⁹MMDAs permit up to six transfers per month other than by appearing in person, but no more than three of these can be by check. In recent months, MMDA yields have exceeded Super NOW yields by approximately 2 percentage points.

Chart 4

**COMPARISON OF
THE GROWTH OF MMMFs AND MMDAs**
(Quarterly Levels)



Source: Board of Governors of the Federal Reserve System.

MMMFs.²⁰ The level of MMMFs declined markedly in this period, and some market professionals predicted their eventual demise. The funds have made a strong effort to restore their competitive position by improving their products, however, and as the chart shows, the funds appear to be maintaining their position in 1984.

3. The Quantitative Impact of Innovation and Deregulation on the Structure of Depository Markets
The innovations and resulting deregulation in depository markets have had a profound impact on the structure and cost of bank and thrift liabilities. Table IV shows the principal instruments as percentages of the total from 1959 through 1983. In 1959, non-interest-bearing demand deposits accounted for 41.1 percent of the liabilities shown in the table.

²⁰ The considerably stronger response to MMDAs is believed to be due primarily to the insurance feature and the general public's greater familiarity with the banks and thrifts issuing MMDAs than the investment companies issuing MMMFs.

Table IV

PRINCIPAL LIABILITIES OF DEPOSITORY INSTITUTIONS, YEAR-END 1959-1983

(Percentage of Total)

(1) Year	(2) Demand Deposits	(3) Other Checkable Deposits ¹	(4) MMDAs	(5) Savings Deposits	(6) Small Time Deposits	(7) Large Time Deposits	(8) Term RPS	(9) Term Eurodollars	(10) Total
1959	41.1	0.0	0.0	54.0	4.2	0.4	0.0	0.3	100.0
1960	39.2	0.0	0.0	55.5	4.4	0.7	0.0	0.3	100.0
1961	37.3	0.0	0.0	56.2	4.7	1.2	0.0	0.4	100.0
1962	34.6	0.0	0.0	57.0	5.9	2.0	0.0	0.5	100.0
1963	32.5	0.0	0.0	57.3	6.8	2.9	0.0	0.5	100.0
1964	31.0	0.0	0.0	57.5	7.1	3.7	0.0	0.6	100.0
1965	29.6	0.0	0.0	57.5	7.7	4.7	0.0	0.4	100.0
1966	28.8	0.0	0.0	54.1	11.8	4.9	0.0	0.4	100.0
1967	27.8	0.0	0.0	50.9	15.0	6.0	0.0	0.4	100.0
1968	27.5	0.0	0.0	47.6	17.8	6.6	0.0	0.5	100.0
1969	27.9	0.0	0.0	46.4	21.2	3.6	0.5	0.5	100.0
1970	26.5	0.0	0.0	41.5	24.2	7.2	0.3	0.3	100.0
1971	24.5	0.0	0.0	40.4	26.4	8.0	0.4	0.4	100.0
1972	23.4	0.0	0.0	38.8	28.0	8.9	0.4	0.4	100.0
1973	22.0	0.0	0.0	35.6	29.0	12.1	0.7	0.6	100.0
1974	20.9	0.0	0.0	34.0	28.9	14.5	0.8	0.8	100.0
1975	19.7	0.1	0.0	35.7	31.0	11.9	0.8	0.9	100.0
1976	18.4	0.2	0.0	37.2	32.1	9.7	1.2	1.2	100.0
1977	17.5	0.3	0.0	36.0	32.7	10.6	1.4	1.5	100.0
1978	16.7	0.6	0.0	31.7	34.4	12.9	1.8	2.1	100.0
1979	16.0	1.0	0.0	25.9	38.9	13.6	1.8	2.7	100.0
1980	15.1	1.6	0.0	22.7	41.3	14.6	2.0	2.8	100.0
1981	12.5	4.1	0.0	18.3	43.7	15.9	2.0	3.6	100.0
1982	11.7	5.0	2.1	17.6	41.7	16.0	2.0	4.0	100.0
1983	10.5	5.5	16.1	13.4	34.0	14.0	2.4	4.0	100.0

¹ Details may not add to totals due to rounding.

² Other Checkable Deposits includes negotiable order of withdrawal (NOW) and automatic transfer service (ATS) accounts at depository institutions, credit union share draft accounts and demand deposits at thrift institutions.

Source: Board of Governors of the Federal Reserve System.

Passbook savings deposits subject to a ceiling rate accounted for most of the remainder. By 1975, just prior to the accelerated deregulation of the late 1970s, the demand deposit share had declined to 19.7 percent. By 1983, the share had dropped further to 10.5 percent, and the Regulation Q ceilings had been lifted on all time deposits with the exception of passbook savings accounts. Of particular importance in the current situation, the category of "other checkable deposits" (column 3 in the table), which includes ordinary NOW accounts, Super NOWs and other interest-bearing transactions accounts, has been rising rapidly since 1980, while the demand deposit category has been declining. This trend will almost certainly continue in the years ahead.

The changes manifested in Table IV have obvious implications for U. S. depository institutions. First, although in the past banks and other depositories paid implicit interest in a variety of forms on demand deposits and other liabilities that did not yield explicit interest, there can be little doubt that deregulation has raised the average cost of funds for many of these institutions, especially in recent years. This increase has forced the adoption of more systematic and explicit pricing policies for loans and other services and has probably reduced cross-subsidization across various categories of customers. Second, the trend toward explicit interest has increased short-run variations in the cost of funds. This has made it necessary for depository institutions, like other financial and nonfinancial firms, to "manage" interest rate risk to a much greater extent than formerly, by either shortening loan maturities, making loan rates variable, or hedging the risk in futures markets.

4. The Present Situation: Further Increases in Competition from Nondepository Institutions, Consolidation in the Supply of Financial Services, and the Demise of Geographic Restrictions While changes in the level and variability of the cost of funds have had important effects on depository institutions in recent years, the increased competition from nondepository institutions has been equally significant. In addition to the competition from MMMFs, there have been several mergers involving large investment banks and insurance companies, and some of the largest nonfinancial companies in the nation have recently added an array of additional financial service activities to their existing installment credit operations. The purpose of these consolidations is the creation of financial service conglomerates capable of providing comprehensive financial services including banking services to business

firms and households. As an example, Sears, Roebuck and Company, the country's largest retail chain, has recently acquired a large investment bank and a large real estate finance company and linked these operations to its existing insurance, credit card and other financial services. By offering these services through its vast chain of retail stores, Sears can reach virtually every geographic market in the United States. Merrill Lynch, American Express, and other large companies are rapidly building similar financial service conglomerates.

Although it is difficult to quantify the degree of this competition in the aggregate, some idea of the order of magnitude is conveyed by diverse statistics. At the end of 1981, the financial service subsidiaries of three large manufacturing companies (General Electric, Ford, and General Motors) held \$45.8 billion of consumer installment credit compared to the \$27.7 billion held worldwide by Citicorp, the Bank of America and Chase Manhattan. At the end of the same year, total business lending (commercial and industrial loans, commercial mortgage loans, and lease financing) by 32 nonbank companies was slightly over \$100 billion, one-third of the total outstanding at the 15 largest bank holding companies.²¹

In their effort to compete still more directly with banks and other depositories, a number of nonbank financial service providers have acquired commercial banks in recent years. In order to avoid being classified legally as bank holding companies and therefore subjected to banking regulation, the acquiring companies have then taken advantage of a provision in the current bank holding company law that defines a bank as an institution that both (1) offers demand deposits and (2) makes commercial loans. After the elimination of one of these two activities from the acquired bank's operations, the bank is no longer a bank in the eyes of the law, and the acquiring company is not a bank holding company. These affiliates, thus transformed, have earned the awkward designation "nonbank banks." Since nonbank banks are not banks, they are not subject to the remaining restrictions on banks, notably geographic branching restrictions. Therefore, there is no legal barrier to prevent a nonbank financial service provider from establishing a national network of nonbank banks, which enormously increases the deposit base on which the company can draw. In the view of many observers, nonbank banks constitute a rather blatant circumvention of the Glass-Steagall Act, and they were the subject

²¹ See Rosenblum and Siegel (1983), Chart 1B, p. 16 and Table 10, p. 26.

of much regulatory and legislative attention in the United States in 1984. Both houses of Congress passed bills that would have redefined a bank in such a way as to include most existing nonbank banks. For various reasons, no final bill was enacted, but the issue is almost certain to surface again in 1985.

The trend toward consolidation in the supply of financial services has not been restricted to nonbank and nondepository companies. Both banks and bank holding companies have sought to enter a variety of nonbanking industries throughout the postwar period, and their efforts have intensified in recent years.²² Although Congress does not appear to be prepared to repeal the main provisions of the Glass-Steagall Act, an omnibus bill passed by the Senate in the summer of 1984 would have permitted bank holding companies to underwrite municipal revenue bonds and engage in several other previously proscribed activities. In addition, the Federal Reserve has approved the acquisition of discount brokerage companies (which trade but do not underwrite securities) by bank holding companies, and this action has been upheld in the federal courts.²³

Apart from their efforts to expand into nonbanking activities, the larger bank holding companies are presently strengthening their effort to dismantle, de facto if not de jure, the remaining restrictions on geographic expansion. As noted earlier, banks and bank holding companies have not generally been permitted to carry on full banking operations across state lines. Many bank holding companies, however, operate numerous nonbank affiliates such as consumer finance companies in several states,²⁴ and in a somewhat ironic twist, several bank holding companies have recently announced their intention to establish interstate chains of retail-oriented nonbank banks known as "consumer banks." Finally, in ac-

cordance with a provision of the bank holding company law that allows bank holding companies based in one state to operate banks in another state if the government of the second state specifically permits it, a number of states in particular regions are presently establishing or attempting to establish reciprocal regional interstate banking agreements. These agreements would permit bank holding companies based in the region to operate banks in any state in the region but would preclude entry by banks based outside the region.²⁵ In the absence of specific legislation halting these various developments, an acceleration of the growth of interstate banking activities appears likely in the years immediately ahead.

5. **Summary** The powerful innovative forces unleashed by rising inflation and advancing technology have substantially eroded the restrictive bank regulatory structure that emerged from the Great Depression. This erosion has had three principal effects. First, the structure of bank funds, the average cost of these funds, and the stability of the cost of funds have all changed dramatically since 1960. These changes have greatly altered the character of banking operations in the United States. Second, although the legal separation of banking and other lines of commerce remains in force, the actual boundary has become increasingly blurred due to the ability of nonbank institutions to offer deposit-like products and services and the expansion of bank holding companies into nonbanking activities. Finally, geographic restrictions on banking operations have lost much of their force in recent years.

It is still too early to determine whether these developments have strengthened American banking markets or weakened them, and what the longer run effect on the welfare of the general public will be. Although the overall profitability of U. S. banks is still relatively high, the current strains in the American banking and thrift industries are well known. The number of insured banks closed due to financial difficulties in 1983 (48) was the highest in any year since the 1930s. The extent to which these strains are the result of innovation and deregulation is not clear, nor is it clear how these difficulties will affect innovation and deregulation in the future. The final section of this article will speculate briefly on the prospects.

²² A major reason for the emergence of the bank holding company as the dominant corporate form in U. S. banking markets has been the effort to circumvent restrictions on bank entry into nonbanking activities. Both the Bank Holding Company Act of 1956 and the Amendments to that Act in 1970 sought to close this loophole.

²³ Space does not permit a discussion of the international activities of large U. S.-based banks. These banks are engaged in a number of nonbank activities via overseas affiliates that they are not permitted to enter in the United States. They would therefore be able to establish domestic operations in many of these activities rather quickly if the restrictions were lifted.

²⁴ As of 1981, for example, Citicorp, which is based in New York, operated 422 nonbanking offices in 40 states and the District of Columbia.

²⁵ A principal objective of these regional compacts appears to be to restrict entry into regional and local markets by the large money center banks.

B. Other Innovations

The innovations in banking markets just described have been particularly visible to the average American citizen, and they have far-reaching implications. The same forces driving innovation in banking, however, have also produced important innovations in other financial markets. Developments in the securities markets and in mortgage markets have been especially dramatic, in the form of both new instruments and markets and changes in the character of existing instruments and markets. The common theme in nearly all of these innovations has been the effort to reduce the risk occasioned by the heightened volatility of interest rates. It would be difficult to list all of these developments, but some of the more important are the following.

1. **Bond markets** A sizable proportion of corporate bonds issued in domestic U. S. markets currently are floating-rate bonds, and the remaining fixed-rate issues frequently have early call or put provisions. Further, the volume of zero-coupon bonds, which pay their return in the form of price appreciation rather than coupon interest payments and therefore present no reinvestment risk, has grown significantly since 1980.

2. **Mortgage markets** A majority of the residential mortgages issued in the United States at present are adjustable rate mortgages (ARMs), which permit the lender to vary the interest rate during the term of the loan, usually on specified dates and subject to specified restrictions. Also, a large and active market for securities backed by pools of mortgages has developed, which has increased the volume of mortgage lending by insurance companies and pension funds and thus insulated the market to some extent from the difficulties currently plaguing the thrift industry as a result of the secular rise in interest rates. On balance, these innovations appear to have benefited both the residential construction industry and home buyers, since the recovery of the homebuilding sector of the economy following the 1981-1982 recession was strong. There is presently considerable concern, however, that the existence of a large stock of variable rate mortgage debt will increase the incidence of default if and when interest rates come under renewed upward pressure.

3. **Futures markets** Trading in interest rate futures in the United States has grown rapidly since the first market opened in 1975. There are currently markets for six instruments: mortgage-backed securities guaranteed by the Government National Mort-

gage Association (GNMA), U. S. Treasury bonds, U. S. Treasury bills, domestic bank CDs, Eurodollars, and U. S. Treasury notes. The existence of these markets and their increasing depth make it possible for both institutions and individuals to hedge their exposure to interest rate movements considerably more cheaply than is possible in cash markets.²⁶ Because it is possible, however, for market participants motivated by a desire to speculate rather than a desire to hedge to engage in futures transactions with relatively small cash outlays, it is not yet clear whether the existence of futures markets has reduced or increased the overall level of risk in financial markets.

This section has focused on the impact of recent financial innovation on the structure and behavior of markets. The next section examines the implications for monetary policy.

IV.

THE EFFECT OF INNOVATION ON U. S. MONETARY POLICY

In addition to their impact on markets, innovation and deregulation have led to an intensive and extensive reexamination of the conduct of monetary policy in the United States, and this reexamination in turn has clearly affected the substance of policy actions in some recent years. This section will briefly describe the present strategy of U. S. monetary policy and then indicate some of the principal questions and operational problems that innovation and deregulation have raised regarding this strategy.

A. The Current Strategy of U. S. Monetary Policy

The evolution of U. S. monetary policy in the postwar period has been a long and rather diffuse process. Although there has always been some attention to monetary conditions—as opposed to credit conditions—and the behavior of monetary aggregates, it is probably accurate to say that most of the emphasis in the actual conduct of policy in the 1950s and 1960s was on the effect of the Federal Reserve's policy actions on the availability and cost of credit in short-term credit markets.

Since about 1970, however, increased attention has been given to monetary conditions and specifically

²⁶The recent development of options markets for several financial futures contracts has significantly broadened the range of hedging strategies available to investors.

to the growth rates of various measures of the money supply. This increased focus on money, which has also developed in several other industrial countries in the same period, has resulted partly from the rise of "monetarism" to prominence in the academic literature on monetary policy in the late 1960s and early 1970s and partly from dissatisfaction with the perceived failure of credit- and interest-rate oriented policies to deal effectively with the secular rise in inflation.

As a result of these developments, the present stated strategy of Federal Reserve policy centers around control of the monetary aggregates.²⁷ At the beginning of each year, the Fed establishes a target range for the growth rate of each monetary aggregate from the fourth quarter of the preceding year to the fourth quarter of the current year. It then monitors the actual growth of the aggregates in relation to the targets and acts to correct deviations from the targets unless it feels that unanticipated economic or financial developments warrant the deviation. The ultimate objective of this strategy is to contribute to the stabilization of both economic conditions in general and the behavior of prices in particular. For this reason, the strategy is often referred to as one of using monetary aggregates as "intermediate" targets of policy.

It is obvious that the successful implementation of this strategy requires a stable and predictable relationship between the monetary aggregates targeted and the ultimate objectives of monetary policy such as the rate of growth of nominal GNP and the behavior of the price level. It is widely asserted that recent financial innovation and deregulation have weakened this relationship in the United States and made it less predictable. Further, some monetary economists believe that innovation and deregulation have reduced the ability of the Fed to control the growth of the aggregates effectively. The remainder of this section summarizes the evidence supporting these contentions.

B. Evidence of Instability in the Relationship Between the Monetary Aggregates and Nominal GNP in the United States

1. Possible downward shifts in money demand, 1975 and 1980-1981

The problems encountered in

²⁷ The Humphrey-Hawkins Act of 1978 requires the Federal Reserve to report its objectives for the growth of the monetary and credit aggregates each year. The current formal definitions of the monetary aggregates are published each month in the notes to statistical table 1.21 in the Federal Reserve Bulletin.

the conduct of U. S. monetary policy have stimulated considerable new research over the last decade on the relationship between money and GNP. Much of this research has taken the form of empirical estimation and re-estimation of conventional Goldfeld-type money demand equations or variations of these equations using the M1 aggregate, coupled with tests of the ability of the equations to predict the longer run growth of the monetary aggregates in the out-of-sample period.²⁸ Table V reproduces a table from a recent article by Porter and Offenbacher²⁹ that presents empirical evidence typical of that produced by much of this research. The table shows both the annual and cumulative errors in the predicted growth of M1³⁰ from a standard money demand equation over the 1967-1974 and 1974-1981 periods, respectively. The annual growth rate errors suggest that there may have been downward shifts in the demand for money in relation to income in 1975 and again in 1980 and 1981. Economists who believe that such shifts in fact occurred generally attribute them to financial innovation and deregulation. Improved cash management techniques in the corporate sector are thought to be mainly responsible for the shift in 1975. More careful management in the household sector—made possible by the introduction of MMMFs—is thought to have contributed significantly to the shift in 1980 and 1981.³¹

²⁸ Following Goldfeld (1973), these money demand functions have the following general form:

$$\ln \frac{M^D}{P_t} = a_0 + a_1 \ln(r_{1t}) + a_2 \ln(r_{2t}) + a_3 \ln(y_t) + a_4 \ln \frac{M}{P_{t-1}}$$

where M^D = money demand

P = price level

r_1 = a nominal short-term market interest rate

r_2 = a nominal short-term regulated interest rate

y = real income.

For a review of much of this research, see Judd and Scadding (1982B).

²⁹ See Richard D. Porter and Edward K. Offenbacher, "Financial Innovations and Measurement of Monetary Aggregates," in Federal Reserve Bank of St. Louis (1984), Table 3-1, pp. 53-54.

³⁰ The M1 series used in constructing the table was adjusted to eliminate the effects of institutional changes on this aggregate. See footnote 2 of the Porter-Offenbacher article.

³¹ For specific evidence on the impact of MMMFs see Dotsey, Englander and Partlan (1981-82). It should be noted that although the view that a downward shift in money demand occurred in the mid-1970s is widely held, there is much less agreement regarding the possible shift in 1980-1981. For an argument that no shift occurred in the latter period, see Pierce (1982).

Table V

OUT-OF-SAMPLE ERRORS¹ FROM A GOLDFELD M1 EQUATION
FOR 1967:1 TO 1974:2 AND 1974:3 TO 1981:4

Date	Cumulative Percentage Error	Annual Growth Rate Errors	Date	Cumulative Percentage Error	Annual Growth Rate Errors
1967:1	-.2		1974:3	1.2	
:2	-.3		:4	3.0	
:3	-1.0		1975:1	5.1	
:4	-1.0	-1.1	:2	5.4	
1968:1	-.8		:3	5.9	
:2	-.9		:4	7.6	4.8
:3	-1.5		1976:1	7.8	
:4	-1.9	-.9	:2	7.5	
1969:1	-2.3		:3	8.2	
:2	-1.6		:4	8.6	.9
:3	-.5		1977:1	8.3	
:4	-.3	1.7	:2	8.9	
1970:1	-.1		:3	9.2	
:2	.1		:4	8.9	.3
:3	-.2		1978:1	8.5	
:4	-.1	.2	:2	9.4	
1971:1	.9		:3	9.9	
:2	.8		:4	10.6	1.7
:3	.4		1979:1	11.9	
:4	1.2	1.4	:2	11.7	
1972:1	1.7		:3	11.5	
:2	1.7		:4	11.9	1.2
:3	1.2		1980:1	12.6	
:4	.5	-.8	:2	16.3	
1973:1	.2		:3	15.3	
:2	.7		:4	14.8	2.8
:3	.7		1981:1	18.0	
:4	.7	1.0	:2	18.1	
1974:1	1.4		:3	20.8	
:2	2.6		:4	22.1	6.4

	1967:1 to 1974:2		1974:3 to 1981:4	
	Annualized Quarterly Growth Rates	Annual Growth Rates	Annualized Quarterly Growth Rates	Annual Growth Rates
Mean Error	.4	.2	2.6	2.6
Root Mean Square Error	2.1	1.1	4.7	3.3

¹Error is predicted value minus actual value.

Source: Porter, Richard D. and Edward K. Offenbacher, "Financial Innovation and Measurement of Monetary Aggregates," in Federal Reserve Bank of St. Louis (1984), Table 3-1, pp. 53-4.

2. The unusual behavior of M1 velocity, 1982-1983 A further instance of apparent instability in the relationship between M1 and nominal GNP occurred during the recession in 1982 and the recovery from that recession in 1983. In contrast to the possible downward shifts in money demand in 1975 and 1980-1981, M1 grew unusually rapidly in relation to nominal GNP in the 1982-1983 period. This can be depicted by charting the growth of M1 velocity, i.e., the ratio of nominal GNP to M1, as in Chart 5. As the chart makes clear, while velocity

typically declines or grows more slowly in recessions than in other stages of the business cycle, the decline was much sharper in the 1981-1982 recession than in any other cycle since the 1950s. Research done by the staff of the Board of Governors of the Federal Reserve suggests that the introduction of interest-bearing NOW accounts (which are included in M1 as it is presently defined) has increased the interest elasticity of M1 demand in a manner that could not have been easily predicted in advance.³² An implication of this view is that further deregulation may also change the parameters of the M1 money demand function in ways that cannot be anticipated. Research done at the Federal Reserve Bank of San Francisco, however, indicates that the unusual behavior of velocity in 1982 and 1983 can be explained by (1) the decline in inflation in 1982 and (2) the precipitous drop in interest rates in the third quarter of 1982 in the context of a stable money demand function.³³

C. Effect of the Evidence of Instability on the Recent Conduct of Monetary Policy and Policy Research

As one might expect, the evidence of possible instability in the money-GNP relationship has raised doubts regarding the feasibility of continuing to use intermediate money supply targets as a central element in the strategy of U. S. policy. In this regard, it should be noted that much of this evidence pertains to M1. M1, which is the narrowest of the aggregates, is intended to be a measure of transactions balances, and it has generally received more attention than the broader monetary aggregates from the general public. One of the results of the events in 1982 and 1983 just described was a temporary change in the operational emphasis of policy away from M1 in the direction of the broader measures. In particular, the Fed announced in late 1982 that it was deemphasizing M1 and giving greater weight to M2 and M3 in its operations. Further, in 1983 the Fed established a range for the growth of a broad measure of total credit for the first time, partly in response to arguments that M1 had lost its meaning.³⁴ The emergence of a more normal pattern in the behavior of M1 velocity in the

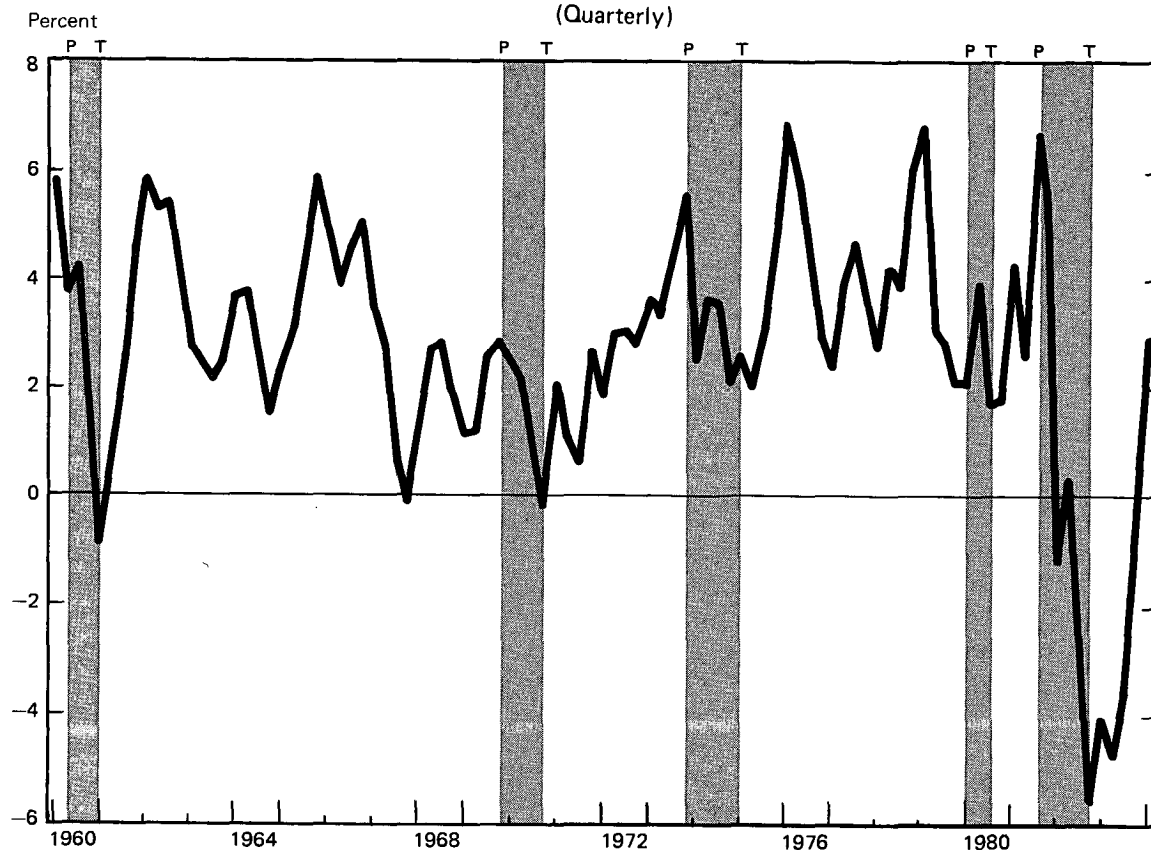
³² See Brayton, Farr and Porter (1983).

³³ See Judd (1983). See also Broaddus and Goodfriend (1984), pp. 11-14.

³⁴ The case for focusing on credit rather than monetary aggregates has been advanced especially strongly by Frank E. Morris, the president of the Federal Reserve Bank of Boston. See Morris (1982).

Chart 5

FOUR-QUARTER GROWTH RATES OF THE VELOCITY OF M1 (Quarterly)



Note: Shaded areas are recessions.

Source: Board of Governors of the Federal Reserve System and U.S. Department of Commerce, Bureau of Economic Analysis.

latter part of 1983 and the first half of 1984, however, led to the restoration of M1 to target status in July 1984.

As noted in the discussion of prospects for monetary policy in the next section of this article, the Fed has come under pressure from several quarters recently to drop its money supply targets in favor of one of several alternative strategies. To date, the Fed itself has given no indication that it is planning to take such a step. Indeed, much of the research done by the staff of the Board of Governors of the Fed in recent years has been aimed at improving the technical foundation for the continued use of a monetary aggregates strategy.

This research has taken two separate directions. First, an effort has been made to improve the specification of money demand equations in order to im-

prove their performance. An example of this research is the Simpson-Porter model of money demand, which includes a so-called "ratchet" variable designed to capture the impact of cash management innovations induced by the successively higher interest rate peaks in the 1970s and early 1980s.³⁵ Although inclusion of this variable does not eliminate the overprediction of money demand shown in Table V, it reduces it significantly.

The second area of research has focused on the construction of alternative monetary aggregates known as Divisia aggregates using the theory of index numbers.³⁶ Conventional monetary aggregates such

³⁵ See Simpson and Porter (1980). For a more recent example of further research on the money demand function see Brayton, Farr and Porter (1983).

³⁶ See Barnett and Spindt (1982).

as M1 are simple summations of their various components with no attention given in the aggregation process to differences in the monetary services provided by the components. For example, M1 as it is currently defined includes (1) currency and demand deposits, which pay no explicit interest but provide a wide range of transactions services, and (2) several interest-bearing accounts such as conventional NOW accounts and Super NOW accounts, which are also partly transactions instruments, but which provide some savings services-i.e., store of value services-as well. Divisia aggregation takes account of these differences by assigning different weights to the components of an aggregate in constructing the aggregate. To be specific, the weight attached to each component is determined by the spread between the market yield paid on a nonmonetary asset such as commercial paper and the explicit own yield paid on the component in question. This spread is the opportunity cost of holding the component (in terms of explicit interest foregone) and is assumed to be a reasonable proxy for the rental cost of the monetary services provided by the component and therefore for the flow of services themselves. In this way, the highest weights are assigned to assets like currency that have the highest spreads and therefore presumably yield the greatest flow of monetary services.

Although Divisia aggregation would appear to be superior in principle to conventional simple-sum aggregation, empirical results using these aggregates have been mixed. In recent dynamic simulations using two money demand specifications,³⁷ the Divisia aggregates generally outperformed their conventional counterparts in the case of the broader aggregates, but they yielded inferior results in the case of the narrower aggregates such as M1. For this reason, and in view of the obvious difficulties the Fed would encounter in communicating its objectives to the public if it were to substitute the Divisia aggregates for the standard aggregates in setting its monetary targets, it is unlikely that the Divisia measures will play a major operational role in the actual implementation of policy in the foreseeable future. Continued research with these measures, however, and informal monitoring of their behavior may help the Fed avoid being misled by temporarily aberrant behavior of the conventional aggregates due to innovation and deregulation.

³⁷ See Porter and Offenbacher (1984), pp. 72-6.

V.

PROSPECTS AND CONCLUSIONS³⁸

To this point this article has dealt with the past and the present. This section will look to the future and speculate on how the lingering effects of the innovation that has already occurred and the effects of further innovation may influence the structure and functioning of financial markets and the conduct of monetary policy in the years ahead. Long and sometimes unhappy experience has taught the author that forecasting is the most dangerous of all the professional activities economists engage in. Accordingly, the speculative comments that follow will focus primarily on the relatively near-term future through the remainder of the 1980s.

A. Prospects for the Financial Markets and the Provision of Financial Services

As noted above, American financial institutions-especially commercial banks and thrift institutions-have come under severe pressure in recent years due to rising competition from external sources, the impact of deregulation on the cost of funding, the apparent deterioration in the quality of some bank loan portfolios, and the increased incidence of bank failures. As a result of these developments and the concern they have stimulated both in the political arena and among regulatory agencies, the pace of deregulation slowed in 1984, and it may well remain lower in the near-term future.

The forces driving the longer run process of innovation and deregulation, however, are still very much alive, and the process is therefore likely to continue in the absence of a major financial catastrophe. Several developments seem probable in the years immediately ahead. First, one of the measures available to deal with the current weakness of some thrift institutions and the associated risk is a more lenient stance by the regulators toward acquisitions of thrifts by bank holding companies. Such consolidations would further blur the distinctions between various categories of depository institutions. Second, the breakdown of the barriers to interstate banking is almost certain to continue. At the moment, it appears that the next stage of this process will take the form of regional agreements that exclude the money center banks, but the latter can be expected to press hard

³⁸ It should be emphasized that the somewhat speculative views presented in this section are the author's and do not necessarily reflect the views of the Federal Reserve Bank of Richmond or the Federal Reserve System.

for equitable access to these markets, and it is possible they will receive judicial relief under the anti-trust laws. Finally, the line of separation between (1) banking and (2) other financial and nonfinancial activities is likely to be eroded further as banks and nonbank institutions both seek to expand further into the other group's territory. In particular, there is a fairly high probability that legislation will be passed in the relatively near future allowing banks to underwrite municipal revenue bonds and perhaps securities backed by mortgage pools, since the potential for abuse seems minimal in these areas.

The examples just given relate to near-term prospects and are relatively narrow in scope. The larger and more important issue is: What will the structure of U. S. banking and financial markets look like in 1990? Will there be significant further erosion of product-line barriers so that banks and other companies meld into "department stores" of finance? Will small banks and other small financial institutions be swallowed up by larger institutions? It is impossible to do more than guess at the answers to these questions. Some further consolidation across product lines may occur. But many of the conflicts of interest and other risks that the Glass-Steagall Act attempted to prevent are still perceived to be real dangers, so it is unlikely that the basic legal barrier between banking and commerce will be dismantled in the foreseeable future. Perhaps more fundamentally, the microeconomics of such consolidations is not well understood at present. Specifically, the extent of joint economies in the production and consumption of diverse financial services is not known. In these circumstances, it seems likely that a substantial degree of specialization in the provision of financial services will persist even if a further dismantling of the regulatory barriers occurs. In a similar way, since there is no clear evidence of significant economies of scale in banking, the specter of large bank holding companies absorbing most small, community-oriented banks seems far-fetched, although there will probably be some reduction in the number of independent banking organizations operating in the country.

Two final comments should be made regarding the prospects for change in (1) the structure of the financial regulatory agencies and (2) the system of federal deposit insurance. Suggestions have been made for many years for changes that would simplify the currently cumbersome structure of U. S. financial regulatory agencies, which involves a mixture of federal and state agencies and the existence of several agencies with somewhat overlapping responsibilities

at the federal level. The most recent formal recommendations were announced in early 1984 by the Task Group on Regulation of Financial Institutions chaired by Vice President Bush.³⁹ Among other things, these recommendations called for simplifying the structure at the federal level by assigning the responsibility for regulating and supervising all but the largest banking organizations to a new agency built around the present Office of the Comptroller of the Currency. Responsibility for the largest organizations would be vested in the Federal Reserve. If past experience is any guide, resistance by the affected agencies and their constituencies will prevent the early adoption of these recommendations.

Regarding the deposit insurance system, the failure of the Continental Illinois Bank and the events leading up to that failure have brought earlier recommendations for reform of the system to the attention of both the Congress and the public.⁴⁰ Many of these recommendations are for changes that would reduce the danger that the existence of deposit insurance might tempt banks to take risks they would otherwise avoid. Examples of the suggested changes are reductions in the coverage of time deposits, permitting private insurance companies to compete with government agencies in providing insurance, and permitting graduated premiums that reflect the relative risk of failure of individual institutions. Despite their logical appeal, these recommendations raise a number of questions. What criteria, for example, would be used to determine relative risk in administering graduated premiums? These kinds of questions plus the broad public support for the present insurance system make it unlikely that wholesale changes will be forthcoming at an early date unless further disruptions in banking markets force them.

B. Prospects Regarding Monetary Policy

As pointed out in Section IV of this paper, the evidence of a reduction in the stability of the empirical relationship between the U. S. money supply and nominal GNP has caused some observers to question whether the Federal Reserve should continue to follow a strategy of using monetary aggregates as intermediate policy targets. The conventional theory of short-run economic stabilization⁴¹ implies that if the monetary sector of the economy is less stable and

³⁹ See Office of the Press Secretary to the Vice President of the United States (1984).

⁴⁰ See, for example, Benston (1983A).

⁴¹ See Poole (1970).

predictable than other sectors-in terms of a conventional Hicksian model, the position of the LM curve is less stable and predictable than the position of the IS curve-targeting interest rates will yield a better policy performance than targeting the money supply. Against this background, some economists have concluded that innovation has in fact reduced the predictability of the money-GNP relationship to such an extent that targeting money supply growth is no longer appropriate, at least as long as significant innovation and deregulation are occurring. Several alternative targets have been suggested including nominal GNP and real interest rates.

Others, however, favor retention of the present strategy at least for the present. They point out that the instability that has been observed in recent years has resulted from (1) concerted efforts in the 1970s to circumvent regulations in the face of high inflation and high interest rates and (2) the disruptions caused by subsequent deregulation. With the deregulation process now well advanced, future innovation may be more gradual and more predictable. Further, while innovation and deregulation may have temporarily affected the relationship between the conventional measures of money such as M1 and the economy, they have not necessarily destabilized the monetary sector in any fundamental way. Therefore, targeting the monetary base or some other measure of high-powered money might still be feasible even if empirical problems with other monetary aggregates persisted.

A related issue that has received attention recently concerns the feasibility of monetary control if remaining interest rate ceilings are removed. A control procedure the Fed has used frequently in the past involves the direct or indirect manipulation of short-term interest rates in order to affect the opportunity cost of holding money balances and therefore the demand for money. It is sometimes argued that with interest rate ceilings removed, yields on the components of the money supply will vary with market interest rates, thereby reducing the elasticity of money demand with respect to interest rates and increasing the change in interest rates required to produce any desired change in the growth of money. Even in a completely deregulated environment, however, explicit yields on assets providing significant monetary services are likely to vary less than market yields. Therefore, the interest elasticity of money demand--especially the demand for M1, which includes currency and other transactions instruments--may remain sufficiently high for the purposes of monetary control.

This rather technical discussion regarding intermediate targets and monetary control is important, but it is only a relatively narrow aspect of the broader public debate about monetary policy that is currently going on in the United States. The experience in recent years of historically high peace-time inflation, high and extremely volatile interest rates, two severe and protracted recessions, and wide swings in the value of the dollar in foreign exchange markets has produced demands from some quarters for far-reaching changes in the strategy of monetary policy and in the responsibilities and authority of the Federal Reserve. In particular, a small but vocal group is pressing for a return to the gold standard or some alternative commodity standard.

Although another sharp rise in interest rates or inflation or another recession might motivate the Congress to require fundamental changes in the conduct of monetary policy, the more likely outcome over the remainder of the 1980s is continuation of the present monetary aggregates strategy coupled with an effort to change the institutional regime in which the strategy is pursued in ways that will make it more likely to succeed. Some of these changes are already in place. The Monetary Control Act of 1980 extended Federal Reserve reserve requirements to all depository institutions,⁴² which reduces variations in the aggregate required reserve ratio due to shifts of deposits across classes of institutions. Further, a change in the reserve accounting mechanism in early 1984 from a lagged system to a (nearly) contemporaneous system has made it feasible for the Fed to change its procedure for controlling the monetary aggregates from one that operates through changes in short-term interest rates to one that operates through the supply of total reserves.⁴³ It should be emphasized, however, that although the current strategy of U. S. policy is formally one of controlling monetary aggregates, there is considerable room within this strategy for discretionary changes in the emphasis actually given to monetary control--especially short-run monetary control--as against other objectives such as stabilizing interest rates in particular time periods. Because it regards such flexibility as desirable, the Fed is likely to resist committing itself to a monetary control regime that

⁴²The requirements had previously been applied only to the minority of commercial banks that were members of the Federal Reserve System.

⁴³Many monetary economists believe that control via a reserve instrument is more efficient than control through interest rates, even though there is relatively little historical experience on which to base a test of the proposition.

significantly restricts the range of its discretionary actions in the short run.

C. Concluding Comment

This paper has presented an overview of recent financial innovation in the United States, the deregulation it has helped to force, and some of the major effects of this process on financial institutions and markets and on monetary policy. As the discussion has indicated, these developments are extremely diverse when they are considered individually. Nonetheless, there are certain unifying themes. In broadest terms, the last ten years have witnessed the

collapse of an important part of the regulatory regime erected in the 1930s and the erosion of at least part of the philosophy of banking and financial regulation that sustained it. The forces that produced this change had been building since at least the 1950s, but they attained a certain critical mass in the 1970s that accelerated the process of change. It is of course possible that the process will continue at this same accelerated pace in the years immediately ahead. But it is also possible—and perhaps more likely—that the remainder of this decade will be a welcome period of consolidation characterized by a slower rate of innovation and change.

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FORECASTS 1985

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The projections in this article are those of the various forecasters and should not be attributed to this Bank or the Federal Reserve System.

The Current Forecast

Moderate economic growth and moderate inflation are predicted for 1985 by economic forecasters, according to a survey of forecasts collected for this Bank's ***Business Forecasts 1985***. Summaries of the forecasts are presented in Tables I and II ; however, a much more detailed summary can be found in ***Business Forecasts 1985*** itself.

An important feature of this year's survey is that only one of forty-eight forecasters predicts that a recession will begin in 1985. The median forecast calls for 3.4 percent growth of real gross national product (GNP) in 1985, as indicated in Table I. That rate of growth would be below recent growth rates, 6.3 percent in 1983 and 5.6 percent in 1984. Of course, such high rates of growth of real activity would be unusual for the third year of a cyclical expansion. Projected growth would indicate generally rising levels of income, production, and employment; however, little reduction in the rate of unemployment is predicted.

The predicted growth in nominal expenditure shown in Table I is somewhat uneven. Consumer spending is expected to rise by 7.6 percent, slightly below GNP growth. Business fixed investment is expected to rise by 8.2 percent, slightly faster than GNP, while residential investment is expected to be relatively strong, rising by 10.6 percent. As has frequently occurred in recent years, Federal spending is expected to rise more rapidly than GNP, increasing by 9.5 percent. Finally, net exports are expected to continue to decline, falling by almost \$20 billion from the end-of-1984 value.

Only moderate increases in inflation are expected in 1985. Consumer prices are expected to rise by 4.5 percent and producer prices by 3.5 percent. Those rates, although slightly higher than in 1984, would nevertheless remain well below the high rates experienced in the late seventies. The projected in-

crease in inflation would also be relatively moderate for the third year in a cyclical expansion.

Underlying this scenario, however, are two major imbalances in the economy. First, many observers argue that the nation's fiscal policy is unsustainable. One symptom is that interest on the national debt is rising much faster than the nation's ability to pay that interest. For example, over the last seven years, interest payments on the federal debt have risen at a 22 percent annual rate, while the gross national product has risen at only a 9.5 percent rate.

Another imbalance is the large foreign trade deficit, which grew by \$34.5 billion in 1984. Corresponding to that excess of imports over exports was a capital inflow into the United States, as foreigners accumulated U. S. financial assets. The rapid accumulation of those assets has led some analysts to believe that current trade and asset flows are unsustainable. For example, from the first quarter of 1983 to the third quarter of 1984, foreign holdings of U. S. financial assets rose by 29 percent, whereas total U. S. financial assets grew by only 18 percent. Again, some analysts maintain that such a trend cannot be sustained indefinitely.

Forecasters generally expect these imbalances to continue in 1985, but not to severely disrupt the economy. Some of the more pessimistic forecasters do see strains developing. For example, one predicted that rising interest rates due to the large federal deficit will choke off economic expansion. Others believe that a sharp reduction of net exports will stifle domestic demand. However, other forecasters looking at those same difficulties see reasons for optimism. Examples include the expectation that meaningful fiscal reform will occur, or that foreign economic growth will spur exports. Thus the median forecast conceals a wide range of possible outcomes, in large part due to the obvious fiscal and trade problems.

A notable omission from the forecasters' list of major uncertainties is monetary policy. Perhaps due to the Federal Reserve's success in hitting its announced targets for growth in the money supply

Table I
 MEDIAN QUARTERLY CHANGES FORECAST FOR 1985
 Percentage Changes at Annual Rates Unless Otherwise Noted

	Actual Change ^a 4Q 83- 4Q 84	Forecasts 1985*				4Q 84- 4Q 85
		I	II	III	IV	
Gross national product_____	9.3	7.6	7.8	8.1	8.0	7.9
Personal consumption expenditures____	7.6	7.5	7.4	7.7	7.8	7.6
Durables _____	8.3	8.6	8.7	6.4	6.3	7.5
Nondurables _____	6.0	5.2	5.7	6.4	6.1	5.9
Services_____	8.5	8.6	9.0	8.6	9.0	8.8
Gross private domestic investment _____	17.7	2.1	6.4	10.3	10.4	7.3
Fixed investment:						
Nonresidential _____	16.9	10.6	7.9	7.2	7.1	8.2
Residential _____	8.4	7.4	12.0	11.7	11.1	10.6
Change in business inventories ^b _____	31.1 ^c	34.7	33.0	34.9	38.8	
Net exports ^b _____	-64.3 ^c	-80.9	-81.2	-87.1	-84.0	
Government purchases _____	13.2	9.9	8.3	8.4	8.4	8.8
Federal _____	18.7	12.6	8.3	8.5	8.4	9.5
State and local _____	9.8	8.1	8.0	7.6	7.3	7.8
Gross national product (1972 dollars) ____	5.6	3.4	3.4	3.4	3.3	3.4
Corporate profits after taxes _____		4.6	10.0	11.2	6.2	8.0
Private housing starts _____	-8.2	10.0	8.3	0	1.2	4.9
Domestic automobile sales _____	0.1	12.2	2.4	4.8	3.9	5.8
Rate of unemployment ^d _____	7.2 ^c	7.3	7.2	7.2	7.2	
Industrial production index _____	6.3	4.0	4.4	3.1	3.5	3.8
Consumer price index _____	4.1	4.1	4.3	4.6	4.8	4.5
Producer price index _____	1.7	2.9	3.3	3.6	4.3	3.5
GNP implicit price deflator _____	3.5	4.2	4.3	4.5	4.5	4.4

* Median quarterly percentage change forecast for each quarter for each category, incorporating 30 forecasts.

^a National income and Product Account data for the fourth quarter of 1984 are preliminary and subject to revision.

^b Quarterly levels, billions of dollars at annual rates.

^c Level, 4Q 1984.

^d Quarterly levels, percent.

(M1) in 1984 and the last half of 1983, most forecasters predict that monetary growth in 1985 will be within the Fed's tentative range announced in July. The median projection for M1 growth is 6.1 percent, while the announced range for M1 growth is 4 to 7 percent.

Past Forecasts

As indicated in Table III, the median forecast was unusually accurate in 1984. Although real growth

was underestimated and inflation overpredicted, the misses were smaller than in recent years. Most striking, however, was that the interest rate paid on Treasury bills was forecast exactly for the fourth quarter of 1984.

While forecasts for the year as a whole were unusually accurate, the pattern of economic activity within the year was not predicted well. During 1984, real GNP was predicted to grow between 4.0 and 4.5 percent during each quarter. Yet during the first

Table II
MEDIAN ANNUAL AVERAGES FORECAST FOR 1985

	Unit or Base	Preliminary 1984*	Forecast 1985**	Percentage Change	
				Preliminary 1984/1983	Forecast 1985/1984
Gross national product _____	\$ billions	3661.3	3936	10.8	7.5
Personal consumption expenditures _____	\$ billions	2342.3	2523	8.6	7.7
Durables _____	\$ billions	318.4	344	13.8	7.9
Nondurables _____	\$ billions	858.3	905	7.1	5.4
Services _____	\$ billions	1165.7	1275	8.5	9.4
Gross private domestic investment _____	\$ billions	637.3	674	35.1	5.8
Fixed investment:					
Nonresidential _____	\$ billions	426.0	472	20.7	10.8
Residential _____	\$ billions	154.4	164	16.8	6.0
Change in business inventories _____	\$ billions	56.8	38	—	—
Net exports _____	\$ billions	-66.3	-84	—	—
Government purchases _____	\$ billions	748.0	823	9.1	10.0
Federal _____	\$ billions	295.5	331	9.6	11.9
State and local _____	\$ billions	452.4	492	8.8	8.7
Gross national product (1972 dollars) _____	\$ billions	1639.0	1693	6.8	3.3
Private housing starts _____	thousands	1745	1696	2.4	-2.8
Domestic automobile sales _____	millions	8.0	7.7	17.6	-3.8
Rate of unemployment _____	percent	7.5	7.2	—	—
Industrial production index _____	1967= 100	163.5	168.9	10.8	3.3
Consumer price index _____	1967= 100	311.1	324.5	4.3	4.3
Producer price index _____	1967= 100	291.2	298.5	2.1	2.5
GNP implicit price deflator _____	1972= 100	223.39	232.55	3.7	4.1

* Data available as of January 1985.

** These data are constructed using preliminary 1984 data and the median annual percentage change forecast for each category, incorporating 45 forecasts.

two quarters the economy boomed, with real GNP growing at 10.1 and 7.1 percent annual rates. Then real activity decelerated, with real GNP rising by only 1.6 percent in the third quarter. Neither the boom nor the deceleration was generally forecast. In addition, the intrayearly patterns of inflation and interest rates differed from the median forecasts.

In many ways, therefore, 1954 furnishes a good

illustration of both the benefits and the hazards of economic forecasts. Relatively accurate forecasts for the year as a whole were undoubtedly valuable for many users. But even in such a relatively good year, forecasters were generally unable to predict short-run changes. Users looking for guidance on the exact timing of particular events, such as the onset of a recession, should keep that record in mind.

Table III

THE RECORD OF MEDIAN FORECASTS

	Real GNP (Growth Rate)			Inflation Rate (GNP Deflator)			Treasury Bill Rate		
	Actual	Predicted	Error	Actual	Predicted	Error	Actual	Predicted	Error
1971 _____	4.7	3.8	0.9	4.7	3.6	1.1			
1972 _____	7.0	5.6	1.4	4.3	3.2	1.1			
1973 _____	4.3	6.0	-1.7	7.0	3.3	3.7			
1974 _____	-2.7	1.2	-3.9	10.1	5.5	4.6	7.3	6.0	1.3
1975 _____	2.2	-0.6	2.8	7.7	7.1	0.6	5.7	7.1	-1.4
1976 _____	4.4	6.0	-1.6	4.7	5.4	-0.7	4.7	7.1	-2.4
1977 _____	5.8	5.0	0.8	6.1	5.7	0.4	6.1	5.8	0.3
1978 _____	5.3	4.2	1.1	8.5	5.9	2.6	8.7	6.5	2.2
1979 _____	1.7	1.5	0.2	8.1	7.1	1.0	11.8	8.1	3.7
1980 _____	-0.3	-0.8	0.5	9.8	8.2	1.6	13.7	8.6	5.1
1981 _____	0.9	2.4	-1.5	8.9	9.1	-0.2	11.8	10.8	1.0
1982 _____	-1.7	2.8	-4.5	4.4	7.1	-2.7	8.0	11.2	-3.2
1983 _____	6.1	3.9	2.2	4.1	5.4	-1.3	8.8	8.1	0.7
1984 (preliminary) _____	5.6	4.3	1.3	3.5	4.9	-1.4	9.0	9.0	0
Mean Absolute Error ____			1.7			1.6			1.9

Note: Predictions are from Business Forecasts, published annually by the Federal Reserve Bank of Richmond. The error is the actual value minus the predicted value. Real GNP and the GNP deflator are expressed as percentage changes from the fourth quarter of the previous year to the fourth quarter of the stated year. The Treasury bill rate is the average yield on three-month bills in the fourth quarter.

BUSINESS FORECASTS 1985

Edited by Sandra D. Baker

The Federal Reserve Bank of Richmond is pleased to announce the publication of *Business Forecasts 1985*, a compilation of representative business forecasts for the current year. A consensus forecast for 1985 also is included. Copies may be obtained free of charge by writing to Public Services Department, Federal Reserve Bank of Richmond, P. O. Box 27622, Richmond, Virginia 23261.

THE AGRICULTURAL OUTLOOK FOR 1985

. . . LITTLE PROMISE SEEN

Raymond E. Owens

Economists from the U. S. Department of Agriculture as well as agricultural industry and trade analysts attended the 1985 Outlook Conference held in Washington, D. C. in early December. Their appraisal of the agricultural economy for 1985 is summarized here.

Overview

Entering 1985, the farm sector continues to be plagued by a variety of economic and financial problems. Farm income levels have exhibited weakness for the last five years. Farmland, a significant component of total farm assets, has fallen in value in response to weak income levels and has thereby reduced the equity positions of many farmers. Highly leveraged farmers (i.e., those with high debt to asset ratios) have been most adversely affected by the economic weakness. Agribusiness industries have also suffered substantial financial hardship as lower farm incomes have led to reduced purchases of farm production inputs.

On balance, 1985 offers little promise either to our nation's farmers or those engaged in the agribusiness industries. That is the conclusion reached by analysts who participated in the U. S. Department of Agriculture's annual Outlook Conference in December. According to these analysts, 1985 can be characterized as a year of continuing adjustment, with agricultural commodity supplies growing more rapidly than demand. Conference participants indicated that agricultural prices will remain under downward pressure throughout this year, although food prices are expected to increase modestly, probably less than the rise of prices generally as measured by the CPI.

Agricultural output rebounded in 1984 after being held down in 1983 by the payment-in-kind (PIK)

program¹ and a severe drought. Output should continue to increase through the current year, participants concluded.

They also noted that while domestic agricultural demand has been buoyed by the vigorous U. S. economic recovery, foreign demand has been dampened by a sluggish worldwide recovery and a strong dollar. The emergence of new foreign producers of exportable grains has further hindered U. S. agricultural exports. In light of these obstacles, the volume of exports for the United States is expected to continue its downward slide in 1985.

Cash receipts from farm marketings should rise this year as increased production outweighs lower prices. But reductions in government payments should offset these increases, resulting in an unchanged gross income figure. Production expenses will rise only modestly, leaving the net cash income of farmers in the \$31 to \$36 billion range, 5 to 9 percent below the 1984 level.

Food price increases are expected to moderate for the current year, finishing probably somewhat below the 4 percent increase of 1984. Since the farm value component of food prices should show no increase, hikes in marketing costs will likely be responsible for most of the expected rise in the food price level.

As always, the outlook for agriculture involves a high degree of uncertainty. Domestic farm output levels are dependent on weather conditions as well as

¹Payment-in-kind was a "one time" U. S. Department of Agriculture (USDA) program enacted in 1983 designed to reduce the large grain stocks accumulated during 1981 and 1982. Under the terms of this program, producers received the title to government held grain stocks in exchange for limiting their plantings. Farmer participation was strong, leading to a removal of 78 million acres of cropland from production that year.

foreign production levels. On the export side, trade agreement announcements can significantly affect demand and price levels. Apart from these uncertain influences, other factors, including the U. S. economic recovery, the strength of the dollar, and the development of the 1985 farm bill are all expected to affect the performance of the agricultural economy in 1985 and beyond. The discussion below provides a more detailed account of participants' forecasts for agriculture in 1985.

Farm Income to Fall

As noted above, downward pressures on agricultural prices, increases in output, and lower government payments are all likely to dominate the outlook for farm income in 1985. After reaching a record high of \$40.1 billion in 1983, agricultural net cash income levels have been declining. The expected 1985 level shown in Table I should total between \$31 and \$36 billion in nominal terms, the lowest net cash income level since 1980.

On the crop side, analysts indicated that anticipated rises in production levels should outweigh an overall price decline of up to 4 percent leading to slightly higher crop cash receipt levels. Crop output should rise 1 to 3 percent in 1985 with crop cash receipts projected to reach \$70 to \$74 billion, compared to the estimated 1984 total of \$68 to \$72 billion.

Both food grains and feed grains should post higher cash receipt figures in 1985 as increased output dominates lower prices. Soybean prices may fall sharply this year while peanut production and prices are also anticipated to be lower. Cash receipts for both will likely fall.

Livestock output and price levels will probably be unchanged to slightly higher in 1985 producing a modest improvement in livestock cash receipts. Overall livestock cash receipts will likely total \$71 to \$75 billion this year, an increase of \$1 billion over estimates for 1984.

Lower cattle supplies should result in higher beef prices and slightly higher cash receipts from cattle marketings. Hog output is expected to remain flat in 1985, but higher prices should improve hog cash receipt figures. Broiler production will likely expand this year with lower prices and unchanged cash receipts anticipated. Milk prices should trend downward, leaving the cash receipts from milk somewhat below 1984 levels.

While total cash receipts from the marketings of crops and livestock shown in line one of Table I are expected to rise \$3 to \$4 billion in 1985, an anticipated decline of \$3 billion in direct government payments should result in a largely unchanged gross cash income figure for farmers. In contrast to the \$6 to \$10 billion increase in farm inventories in 1984, adjustments for agricultural commodities are expected to show little change this year, pointing to a total gross income figure about \$7 to \$8 billion below last year.

Production expenses should rise moderately as indicated by lines nine and ten of Table I. The increase is likely to be attributable equally to a rise in inputs used (a result of higher planted acreage and a buildup of livestock inventories) and small increases in the price levels of replacement livestock and fertilizer. Overall, a rise of up to 4 percent is expected in total production expenses, with the total forecast in the \$142 to \$147 billion range.

From line 18 of Table I, it is indicated that the net cash flow position of farmers will continue to deteriorate in the coming 12 months.² More precisely, the table shows that combination of the lower estimated 1985 net cash income and very modest loan growth will likely result in a net cash flow of \$26 to \$31 billion, down from the \$29 to \$33 billion in 1984.

The lower net cash income and tighter net cash flow will probably result in increasing financial problems for many farmers in 1985. Although conference participants predict modest increases in the total cash receipts of farmers this year, the increase will probably be insufficient to counter a combination of higher production costs and reduced government payments.

1985 Farm Bill to Challenge Tradition

As stressed by the conference's analysts, potentially the most important aspect of the 1985 agricultural economic outlook concerns the fate of agricultural legislation that will come before Congress this session. The Agriculture and Food Act of 1981, usually referred to as the Farm Bill, is due to expire on September 30, 1985. The Farm Bill embodies the legislation that provides for the wide spectrum of federal

²The net cash flow position is an indicator of the farmers' abilities to pay current expenses and service debt. The net cash flow has been trending downward for several years.

Table I

FARM INCOME AND CASH FLOW STATEMENT

(Billion dollars)

Item	1981	1982	1983	1984F	1985F
Farm income sources					
1. Cash receipts _____	142.6	144.8	138.7	139-143	142-147
Crops ¹ _____	73.3	74.6	69.5	68-72	70-74
Livestock _____	69.2	70.1	69.2	70-74	71-75
2. Direct Government payments	1.9	3.5	9.3	7-10	4-7
Cash Government payments	1.9	3.5	4.1	3-5	4-7
Value of PIK commodities _____	0.0	0.0	5.2	4-6	0
3. Other cash income ² _____	1.9	2.0	1.5	1-3	1-3
4. Gross cash income (1+2+3) ³	146.4	150.2	149.6	150-154	150-155
5. Nonmoney income ⁴ _____	13.6	14.2	13.6	12-14	12-14
6. Realized gross income (4+5)	160.0	164.4	163.2	163-167	163-168
7. Value of inventory change _____	7.9	-2.6	-11.7	6-10	-2-2
8. Total gross income (6+7) _____	167.9	161.8	151.4	171-175	163-168
Production expenses					
9. Cash expense ^{5,6} _____	111.4	113.4	109.5	115-117	118-122
10. Total expenses _____	136.9	139.5	135.3	141-143	142-147
Income Statement					
11. Net cash income: ^{1,6}					
Nominal (4-9) _____	35.0	36.8	40.1	34-38	31-36
Deflated (1972\$) ⁷ _____	17.9	17.8	18.6	15-17	13-15
12. Net farm income ¹					
Nominal total net (8-10) _____	31.0	22.3	16.1	29-33	19-24
Total net (1972\$) ⁷ _____	15.9	10.8	7.5	13-15	8-10
Total net (1967\$) ⁸ _____	11.4	7.7	5.4	9-11	6-8
13. Off-farm income _____	39.8	39.4	41.0	41-45	43-47
Other sources and uses of funds					
14. Change in loans outstanding ⁹	15.5	6.8	2.9	0-4	0-4
Real estate _____	9.3	3.7	2.1	-2-2	-2-2
Nonreal estate ⁹ _____	6.2	3.1	0.8	0-4	0-4
15. Rental income _____	5.7	5.6	4.3	4-6	4-6
16. Gross cash flow (11+14+15)	56.1	49.3	47.3	41-45	38-43
17. Capital expenditures ⁶ _____	16.8	13.6	13.1	12-14	11-15
18. Net cash flow ^{1,6} (16-17) _____	39.3	35.6	34.2	29-33	26-31

F = Forecast.

¹Includes net CCC loans.²Income from custom work, machine hire, and farm recreational activities.³Numbers in parentheses indicate the combination of items required to calculate a given total.⁴Value of home consumption of farm products and imputed rental value of farm dwellings.⁵Excludes depreciation and prerequisites to hired labor.⁶Excludes farm dwellings.⁷Deflated by the GNP implicit price deflator.⁸Deflated by the CPI-U.⁹Excludes CCC loans.

Source: U. S. Department of Agriculture, Economic Research Service.

programs pertaining to agriculture. Components of this legislative package include price supports and quotas for tobacco and sugar, dairy supports, peanut quotas, and grain target prices. It is estimated that the farm bill legislation covers almost half of the total U. S. agricultural production. But the current interest in the 1985 Farm Bill focuses not in the breadth of its coverage but rather in its proposed changes in the basic emphasis of U. S. farm policy.

Since its inception in 1930, farm commodity legislation has sought to emphasize improvement in the income of U. S. farmers. Over the years, the legislation has employed a variety of programs designed to accomplish this goal by either reducing commodity supplies or by influencing commodity prices through price supports, target pricing, and loan rates. Although farm programs can claim some success in supporting domestic farm income levels over short periods of time, the income support has often proved to be costly to taxpayers and consumers in the long run.

Opponents of the current policy direction advocate a less regulated market structure in the agricultural sector. They argue that commodity price supports have created artificially high U. S. price levels which have seriously eroded this country's position in global agricultural trade by pricing domestic producers out of world markets. Participation in these markets is vital to the economic survival of substantial portions of the agricultural sector as indicated by the fact that fully one third of the crops grown in the United States are destined for foreign markets. In addition, opponents contend that the restriction of domestic agricultural production through land banks or programs such as PIK induce more foreign suppliers to enter the world market, creating a situation with unfavorable long-run consequences for American farmers.

Furthermore, the PIK program of 1983 was enacted coincidentally with a severe drought and contributed to a massive reduction in grain stocks which boosted grain prices and squeezed the profit margins of livestock producers. Agricultural suppliers were also adversely affected by the program, as grain producers required less seed, fertilizer, and chemicals. Moreover, the cost of farm programs had reached an alarming \$21.7 billion in 1983 at a time when federal budget deficits were already under increasing scrutiny.

Many conference participants indicated that the 1981 farm commodity legislation appears likely to undergo a major change in direction in 1985. Not only is USDA on record as favoring a modification of some farm programs over a multiple-year time period, but support for a return to freer markets in agriculture has also come from agribusiness interests, farm producer groups, and Congress. Support for a return to free agricultural markets, however, is far from unanimous. With the farm economy in a weakened state, proponents of an unchanged agricultural policy maintain that the elimination of federal programs at this time would severely disrupt the agricultural sector, causing unwarranted harm to thousands of farmers. All considered, conference participants felt it likely that the policies that have governed U. S. agricultural production for the last 55 years are destined to shift toward a closer orientation to the constraints imposed by world agricultural markets.

Agricultural Financial Conditions Weaken

Attendees of the Outlook Conference expect continued difficulties to dominate the current outlook for the financial conditions of farmers in 1985. The trends that have plagued the agricultural sector since 1980—namely, declining farmland prices, low income, and inadequate cash flow—are expected to continue this year and may in fact worsen. Furthermore, the increasing debt-to-asset ratio and declining equity position experienced by the farm sector for the past four years will likely continue.

Farmland has traditionally been the financial pillar of the agricultural sector. Almost all long-term or secured credit in agriculture is backed by farmland, a fact which worked heavily in the favor of farmers during the 1970s when farmland prices regularly increased faster than the overall rate of inflation. However, by 1980 high interest rates and low farm incomes combined to halt and reverse the upward price trend of farmland. The resulting downward trend in farmland prices over the last few years will probably continue throughout 1985. As a result, it will be increasingly difficult for farmers to secure additional long-term debt. In fact, real estate backed debt may show no growth in 1985.

Conference participants expect farm income and cash flow to fall this year. Net cash income could fall 8 to 10 percent while the net cash flow may be reduced by more than 10 percent. This will limit the

ability of farmers to service existing debt, and will tend to reduce the growth rate of new short- and long-term debt. Already at the limits of their debt servicing ability, financially leveraged farmers will find 1985 to be particularly difficult.³ Many farmers will postpone the purchases of farm equipment and other capital items, further hampering the profitability of farm related industries. Slow growth of short-term and intermediate-term debt is anticipated in 1985.

Downward pressures on farm asset values combined with flat or slow debt growth should lead to a further weakening of the equity position of farmers in 1985. The debt-to-asset ratio, which has been increasing in recent years, is likely to rise further, although agriculture still enjoys a low average ratio compared to many other industries.

Overall, farm financial stress is likely to increase in the current year. Both farm foreclosure rates and involuntary bankruptcy rates are projected to rise. Financial institutions, already holding large amounts of farmland, are finding the market saturated and are reluctant to release more on the depressed market. As a result, efforts to restructure existing loans are widespread.

In an effort to assist the commercial banking sector in the restructuring process, the Farmers Home Administration (FmHA) proposed a loan guarantee plan last October. Under the original proposal, farm lenders were asked to write off permanently 10 percent of the total outstanding principal and interest on their farm loans in exchange for a FmHA administration guarantee against default on the remaining balance. Subsequent modifications of the original proposal have been aimed at encouraging farm lenders to step up their participation in the program. Under later proposals, such lenders could choose to write off either principal, interest, or a combination of the two in order to fulfill the 10 percent requirement. In addition, beginning in fiscal 1986 the administration intends to phase out direct FmHA

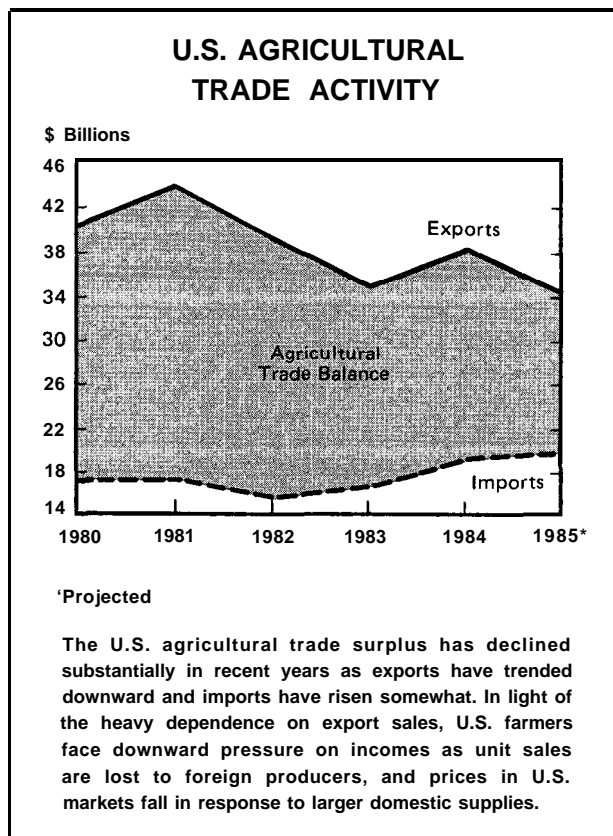
³ While the majority of U. S. agricultural producers are experiencing no financial difficulties, the highly leveraged operators continue to have financial problems. These operators (who have debt to asset ratios of 40 percent or greater) owe an estimated 60 percent of the total outstanding. To service their sizable debt loads, highly leveraged operators require higher and more stable income flows than their non-highly leveraged counterparts and are therefore more vulnerable to loan default in years of low farm income.

loans by shifting farm loans to the commercial banking sector and by reducing the FmHA role to one of guaranteeing loans only.

Agricultural Export Outlook Mixed

Decreased export volume combined with expected increased import levels will lower the agricultural trade balance again in 1985. Agricultural export volume should reach 142.5 million tons in 1985, down slightly from the 143.6-million-ton level of 1984. The expected decrease in export volume combined with declining farm prices will cause downward pressure on cash receipts from export sales. As a result, the total value of agricultural exports is expected to decline to \$34.5 billion. The value of agricultural imports is likely to rise for the third consecutive year to a total of \$19.5 billion. The agricultural trade balance for the United States is projected to decline to \$15 billion, 44 percent below the 1981 level.

The current increase in export volume will stem primarily from the substantially higher usage of United States corn in such drought stricken areas as the USSR and Middle East. Northern Africa is also



expected to increase the importation of U. S. feed grains to support the build up of livestock numbers in that region. Additionally, oilseed exports should recover somewhat from last year's 19 million tons. Also, horticultural items should exhibit a small increase, and U. S. livestock product exports are expected to be stronger this year.

The export volume of wheat and wheat flour should fall in 1985 due to stiff competition from the European Economic Community and a strong dollar. Cotton exports are expected to drop sharply as the world supply has shown a significant expansion.

For several years U. S. agricultural export volume has been trending downward as an appreciating dollar has made U. S. farm goods relatively more expensive to foreign countries. Other factors contributing to limit potential foreign demand have been the sluggish world economic recovery and severe international debt problems.⁴ Downward pressure on exports should continue through 1985 unless world economic growth accelerates.

Food Price Outlook

Retail food prices are expected to exhibit only a modest gain in 1985. After experiencing a rise in food prices of 4 percent in 1984, consumers may see a 2 to 5 percent increase at the supermarket this year. Adverse weather conditions could, of course, dramatically alter the food price outlook, causing price increases to exceed the projected levels. In the absence of such shocks, however, rises in the farm value of domestically produced foods are expected to contribute little to food price gains this year. The forecasters expect that abundant supplies of farm produced foods will continue throughout 1985, limiting upward pressure on farm price levels overall. Food marketing costs are likely to rise only 4 percent over the same period. Increases in the processing, distribution, and marketing cost of food have moderated in recent years with the deceleration of inflation.

⁴As a result of the strong dollar, foreign producers have found themselves at an advantage relative to U. S. farmers. In some instances foreign producers have increased production and entered the world agricultural markets. This has created an expanded world supply of grains. World demand has, at the same time, grown less rapidly as many potential net grain importing countries have experienced economic hardships that have sharply reduced their incomes and hence power to purchase imports. The United States remains the dominant figure in worldwide grain trade, but has nevertheless seen its share of export markets diminish since the late 1970s.

The prices of red meats and fish are expected to increase in 1985. Beef and pork producers began to cut inventories in 1984, but abundant supplies of red meats should continue to be marketed through the first quarter of this year. Inventory reductions will likely result in lower marketings in the latter half of 1985, however, causing upward pressure on prices. Nevertheless, the red meat price levels should post a gain of only 1 to 4 percent over the year. Fish and seafood prices are expected to rise somewhat as a result of increasing consumer demand.

Poultry and egg prices are expected to exhibit sharp drops this year. Poultry output is predicted to be higher than in 1984. However, lower feed input costs will ensure that poultry producers maintain profit margins in spite of lower prices. Egg production should be well above the 1984 total, with the price of eggs averaging 14 to 17 percent below 1984 levels.

The price of fruit should average higher in 1985 as a result of low inventory levels. Adverse weather conditions in 1984 caused a drawdown of fruit inventories which will probably not be offset this year. Fruit prices will continue to be very sensitive to weather conditions throughout the remainder of 1985.

Vegetable prices are expected to remain stable throughout 1985. A large potato crop in 1984 is expected to be a key factor in limiting any substantial upward pressure on vegetable prices.

1985 OUTLOOK FOR MAJOR COMMODITIES

Commodity analysts attending the Outlook Conference outlined their predictions for individual farm commodities for 1985. A summary of their comments for some of the major commodities produced in the Fifth District is presented below.

Tobacco

Uncertainty surrounding the direction of government programs will dominate the tobacco picture in 1985, although other longer term problems are likely to persist. The domestic market for tobacco products remains weak, while the export of U. S. leaf also continues to trend downward. Domestic leaf output has outrun demand growth in recent years, resulting in lower quotas for growers and higher government held inventories. Since cigarette sales dominate the demand for tobacco, declining consumption in the

United States-per capita and total-is an ominous sign for the industry. In addition, larger health warning labels on tobacco products in 1985 will probably limit demand further. At the processing level, higher quality foreign tobaccos and a strong dollar have caused tobacco manufacturers to rely increasingly on foreign leaf to meet their needs. In 1983, foreign tobacco made up 33 percent of the total used for cigarette manufacturing in the United States; since then the foreign share has probably grown.

In contrast to a weakening demand for domestic leaf, tobacco supplies have been growing steadily over the past two years. The 1984 production of tobacco was 22 percent above the previous year with much of the crop going under government loan. Despite the plentiful supplies, 1984 prices averaged 3-cents-a-pound higher for flue-cured, primarily because of the high quality of the crop.

The poundage quota and acreage allotment for flue-cured will be lower in 1985. Although the flue-cured poundage quota will be set at a level 3.7 percent below the 1984 base, the effective quota will be even lower because tobacco growers sold more poundage in 1984 than their allotment allowed. These surplus marketings, or overmarketings, are deducted from the poundage quota the following year, resulting in a 9 percent drop in the effective quota this year. The 1985 national acreage allotment has been reduced 4 percent to 389,643 acres. The price support for flue-cured tobacco will likely be unchanged from the 1984 level.

The quota for burley tobacco will be set at 525 million pounds for 1985. This level is a 10 percent reduction from the 1984 quota and represents the maximum quota reduction allowed by law. The effective quota will total 520 million pounds however, as 5 million pounds were overmarketed in 1984. Burley price supports will likely rise about 2 percent in 1985.

Cotton

Weaker demand in both the domestic and foreign markets is likely to be the key factor affecting cotton this year. The strong recent increase in textile imports has significantly reduced domestic mill usage of U. S. produced cotton. The export of cotton is also trending downward as the world cotton supply expands. China has been a major contributor to the increased world supply.

Cotton production and prices will likely be under downward pressure throughout 1985. Planted acreage is predicted to total 9.5 to 11.0 million acres while production is expected to fall to between 10.0 and 12.5 million bales. This compares to 11.1 million acres and 13.3 million bales in 1984. Domestic usage may run 4.5 to 5.5 million bales while exports will likely total 4 to 6.5 million bales.

Lower price expectations for cotton could substantially increase participation in USDA's Upland Cotton Program in 1985. Participants will be required to hold 30 percent of their cotton base acreage idle but will receive a price of 81 cents per pound for their production on the remaining acreage. The price support remains unchanged from the 1984 level.

Poultry and Egg Outlook

Increased production and lower prices characterize the outlook for both poultry and eggs this year. Lower red meat production, which encourages poultry consumption, and an abundance of grain, which lowers feed costs, should result in expanded broiler and turkey production in 1985. Growth in the economy and expanded poultry marketings by fast food outlets are also expected to spur poultry demand.

Broiler output is projected to increase 4 to 6 percent over 1984, but prices should average lower with wholesale broiler prices likely to range between 48 to 54 cents per pound, down from the 54 to 56 cent range of last year. Broiler producers are expected to at least break even or do slightly better owing to the decreased feed costs.

A sharp increase in the production of turkeys is also likely this year. Output may increase 10 to 12 percent in the first six months of this year compared to the first half of 1984, but average only 2 to 4 percent above 1984 levels in the second half of 1985 as red meat production picks up. Turkey prices should remain relatively strong, despite the large supplies, averaging 65 to 69 cents per pound in the first half of this year and 63 to 67 cents in the latter half.

Egg producers received record returns in 1984 when fear of avian flu spurred the demand for eggs, but this year promises higher output and sharply lower prices for eggs. Low returns to egg producers in 1983 limited new pullet placements in early 1984. As a result, the avian flu outbreak occurred at a time when no surplus eggs were available to limit egg

price hikes in 1984. The higher returns to producers in the latter half of last year caused an expansion in pullet placements and will boost egg production by 2 to 4 percent in the first six months of 1985, and by 2 percent in the second half. Egg prices are expected to average between 64 and 69 cents per dozen this year, down from 93 cents in 1984.

Dairy Outlook

The dairy industry will continue to face an excess supply problem this year. Production of milk should rise about 1 percent in 1985, but marketings may be up 2 percent as the farm usage of milk declines. Overall, removals of milk by USDA will likely total 8.5 billion pounds, about equal to the 1984 removals, but one-half the 1983 level.

The increase in milk production this year should occur despite a reduction in dairy herd numbers. After peaking in November 1983, the dairy cow number had fallen by 329,000 head a year later. A further decline is anticipated for 1985, although this year's reduction will probably be small. Higher output per cow in 1985 should offset the smaller herd size.

The large quantity of milk subject to removal by USDA will likely keep downward pressure on farm level milk prices in the coming year. As a result, wholesale prices may average near the Commodity

Credit Corporation (CCC) purchase prices which are generally below the market price. A decline of 35 to 70 cents is anticipated in the overall price level of all milk in 1985, but a government deduction of 50 cents per hundredweight which pays for part of the milk diversion program is scheduled to end in March, leaving the effective price level unchanged to 35 cents lower than the 1984 average of \$13.37 per hundredweight.

Meat Animals

Lower cattle numbers are expected to exert upward pressure on beef prices this year. As of January 1 of this year, cattle inventory figures showed a decline of 2 to 3 percent over year earlier totals. Lower inventory figures combined with declining breeding herd numbers point to a lower level of cattle slaughter this year, with the decline in beef production totaling 3 to 4 percent. Beef prices should strengthen for the year, probably averaging \$65 to \$69 per hundredweight.

The production of hogs should not change from 1984 levels, although commercial production is expected to be below last year's levels for the first 6 months, followed by expansion in the second half of 1985. Hog prices are expected to peak in the summer, but average in the low \$50s per hundredweight in the fall as larger supplies are marketed.