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The Basis for Lasting Prosperity
Farm Capital and Credit Trends in Virginia
The Supply of Money in the United States

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The Basis For Lasting Prosperity

Remarks by

ARTHUR F. BURNS

Chairman of the Board of Governors of the Federal Reserve System

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Nearly three years ago, in a talk here in Los Angeles, I pointed out that once an economy becomes engulfed by inflation, economic policy makers no longer have any good choices. To regain a lasting prosperity, a nation must have the good sense and fortitude to come to grips with inflation. There is, however, no painless way of getting rid of the injustices, inefficiency, and international complications that normally accompany an inflation.

Events of the past several years have lent poignancy to these simple truths. Recent experience has demonstrated once again that the transition from an overheated economy to an economy of stable markets is a difficult process. Elimination of excess demand was an essential first step to the restoration of stability, but this step has brought with it a period of sluggish economic activity, slow income growth, and rising unemployment. And while we have made some progress in moderating the rate of inflation, our people are still seeing the real value of their wages and savings eroded by rising prices.

The struggle to bring inflationary forces under control, and to return our labor and capital resources to reasonably full employment, is still going on. I am convinced, however, that corrective adjustments in the private sector over the past twelve to eighteen months are creating, in conjunction with governmental stabilization policies, the foundation on which a prolonged and stable prosperity can be constructed.

A cardinal fact about the current economic situation, and one that promises well for our nation's future, is that the imprudent policies and practices pursued by the business and financial community during the latter half of the 1960's are being replaced by more sober and realistic economic judgments. In my remarks to you today, I want first to review some of the key developments that lead me to this conclusion. Then I shall turn to the tasks that must still be faced in order to enhance the prospects for an early resumption of growth in production and employment in an environment of reasonably stable prices.

The current inflation got under way in 1964. Perhaps the best single barometer of the extent to which it served to distort economic decisions and undermine the stability of the economy is found in the behavior of financial markets during the late 1960's. In 1968, well over 3 billion shares of stock exchanged hands on the New York Stock Exchange —about two and one-half times the volume of five years earlier. The prices of many stocks shot upward with little reference to actual or potential earnings. During the two years 1967 and 1968, the average price of a share of stock listed on the New York Exchange rose 40 per cent, while earnings of the listed companies rose only 12 per cent. On the American Exchange the average share price rose during the same two years more than 140 per cent on an earnings base that increased just 7 per cent.

A major source of the speculative ardor came from some parts of the mutual fund industry. Long-term investment in stocks of companies with proven earnings records became an outmoded concept for the new breed of "go-go" funds. The "smart money" was to go into issues of technologically oriented firms—no matter how they were meeting the test of profitability, or into the corporate conglomerates —no matter how eccentric their character.

This mood of speculative exuberance strongly reinforced the upsurge of corporate mergers which occurred during the middle years of the 1960's. No doubt many of these mergers could be justified on grounds of efficiency. But the financial history of mergers—including some of the great conglomerates

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—suggests that many businessmen became so preoccupied with acquiring new companies and promoting the conglomerate image that they lost sight of the primary business objective of seeking larger profits through improved technology, marketing, and management. When talented corporate executives devote their finest hours to arranging speculative maneuvers, the productivity of their businesses inevitably suffers and so too does the nation's productivity.

These speculative excesses had to end, and it is fortunate that they ended before bringing disaster to our nation. Equity values are now being appraised more realistically than a year or two ago. Investors are now more attentive to high quality stocks. Indeed, many of them have discovered or rediscovered that even bonds and time deposits are a fit use of their funds. Not a few of those responsible for the frantic search for "performance stocks" have shifted to other activities or joined the ranks of the unemployed; so also have numbers of security analysts and stock brokers. With speculation giving way to longer-term investment, the stock market is now channeling risk capital to business firms more efficiently.

A searching reappraisal of the economic philosophy of mergers is also underway. Merger activity has slowed materially since mid-1969. To some degree this is a response to the growing concern in governmental circles over the dangers that may inhere in large concentrations of economic power. But it stems mainly from the fact that businessmen are recognizing that time and energy can usually be spent more productively in searching for ways to increase the economic efficiency of their firm than in a scramble for corporate acquisitions.

Businessmen are also reconsidering the wisdom of financial practices that distorted their balance sheets during the late 1960's. In the manufacturing sector, the ratio of debt to equity—which had been approximately stable during the previous decade—began rising in 1964 and was half again as large by 1970. Liquid asset holdings of corporate businesses were trimmed to the bone. On the average, the ratio of prime liquid assets to current liabilities fell by nearly half during those six years. In permitting such a drastic decline in liquidity, many of our corporations openly courted trouble.

Perhaps the most ominous source of instability produced by these financial practices was the huge expansion of the commercial paper market. The volume of commercial paper issued by nonfinancial businesses increased eightfold between the end of 1964 and mid-1970, as an increasing number of firms—some of them with questionable credit standings—began to tap this market. The hazards inherent in the spreading reliance on commercial paper were taken much too lightly. After all, the relations between the buyer and seller of commercial paper are by their very nature distant and impersonal—unlike the close working relationship that normally develops between a bank and its business customers. The buyer—typically an industrial enterprise—rarely has the facilities or the experience to carry out a full investigation of the risks attaching to commercial paper. Moreover, the buyer regards his investment as temporary—to be withdrawn when cash is needed or when questions arise about the quality of the paper. The issuer, therefore, faces considerable uncertainty as to the amount of his maturing obligations that may be renewed on any given day. The risks facing the individual issuer and buyer inevitably pose a problem also for the nation's financial system, since the difficulties experienced by any large issuer of commercial paper may quickly spread to others.

These familiar truths were lost sight of in the inflationary aura of the late 1960's. It took the developments of last summer, when the threat of financial crisis hung for a time over the commercial paper market, to remind the business community that time-honored principles of sound finance are still relevant.

As a result of that experience and the testing of financial markets generally during the past two years, corporate financial policies are now more constructive than in the recent past. This year, new stock issues have continued at a high level—even in the face of unreceptive markets—as corporations have sought to stem the rise in debt-equity ratios. Of late, borrowing by corporations has been concentrated in long-term debt issues, and their rate of accumulation of liquid assets has risen. Liquidity positions of industrial and commercial firms are thus improving, though it will take some time yet to rectify fully the mistakes of the past.

These efforts to restore sound business finances are not without costs to the nation. For example, long-term interest rates, while below their peaks at the end of last year or last spring, are still at unusually high levels because of this year's extraordinary volume of new capital issues. But there can be no doubt that substantial adjustments in the financial practices of our nation's businesses were essential if the basis for a lasting and stable prosperity was to be reestablished.

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By and large, our major financial institutions conducted themselves with prudence during the years when lax practices were spreading in financial markets. There were, however, some individual institutions that overextended loan commitments relative to their resources, others that reduced liquidity positions to unduly low levels, still others that permitted a gradual deterioration in the quality of loan portfolios, and even a few that used funds of depositors to speculate in long-term municipal securities. Fortunately, such institutions were distinctly in the minority. When the chips were down, our major financial institutions proved to be strong and resilient. And they are stronger today. As monetary policy has eased, the liquidity of commercial banks has been increasing. Even so, loan applications are being screened with greater care. The emphasis on investment quality has also increased at other financial institutions, as is evidenced by the recent wide spread between the yields of high and lower grade bonds.

These corrective adjustments in private financial practices have materially improved the prospects for maintaining order and stability in financial markets. But no less important to the establishment of a solid base for a stable and lasting prosperity have been the developments this year in the management of the industrial and commercial aspects of business enterprise.

During the latter half of the 1960's, business profit margins came under severe pressure. The ratio of profits after taxes to income originating in corporations had experienced a prolonged rise during the period of price stability in the early 1960's. But this vital ratio declined rather steadily from the last quarter of 1965 and this year reached its lowest point of the entire postwar period.

Until the autumn of 1969 or thereabouts, the decline in profit margins was widely ignored. This is one of the great perils of inflation. Underlying economic developments tend to be masked by rising prices and the state of euphoria that comes to prevade the business community. Though profit margins were falling and the cost of external funds was rising to astonishing levels, the upward surge of investment in business fixed capital continued. True, much of this investment was undertaken in the interest of economizing on labor costs. Simultaneously, however, serious efforts to bring operating costs under control became more and more rare, labor hoarding developed on a large scale, huge wage increases were granted with little resistance, and some business investments were undertaken in the expectation that inflationary developments would one way or another validate almost any business judgment. While the toll in economic efficiency taken by these loose managerial practices cannot be measured with precision, some notion of its significance can be gained by observing changes in the growth rate of productivity.

From 1947 through 1966, the average rate of advance in output per manhour in the private sector of the economy was about 3 per cent per year. In 1967, the rate of advance slowed to under 2 per cent, and gains in productivity ceased altogether from about the middle of 1968 through the first quarter of this year. The loss of output and the erosion of savings that resulted from this slowdown in productivity growth are frightfully high.

The elimination of excess demand, which the government's anti-inflationary policies brought about, is now forcing business firms to mend their ways. Decisions with regard to production and investment are no longer being made on the assumption that price advances will rectify all but the most imprudent business judgments. In the present environment of intense competition in product markets, business firms are weighing carefully the expected rate of return on capital outlays and the costs of financing. The rate of investment in plant and equipment has therefore flattened out, and advance indicators suggest that business fixed investment will remain moderate in 1971.

Business attitudes toward cost controls have of late also changed dramatically. A cost-cutting process that is more widespread and more intense than at any time in the postwar period is now underway in the business world. Advertising expenditures are being curtailed, unprofitable lines of production discontinued, less efficient offices closed, and research and development expenditures critically reappraised. Layers of superfluous executive and supervisory personnel that were built up over a long period of lax managerial practices are being eliminated. Reductions in employment have occurred among all classes of workers—blue collar, white collar, and professional workers alike. Indeed, employment of so-called nonproduction workers in manufacturing has shown a decline since March that is unparalleled in the postwar period.

Because of these vigorous efforts to cut costs, the growth of productivity has resumed, after two years of stagnation. In the second quarter of this year, output per manhour in the private nonfarm economy rose at a 4 per cent annual rate, and the rate advanced to 5 per cent in the third quarter. These

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productivity gains have served as a sharp brake on the rise in unit labor costs, despite continued rapid increases in wage rates.

In my judgment, these widespread changes in business and financial practices are evidence that genuine progress is being made in the long and arduous task of bringing inflationary forces under control. We may now look forward with some confidence to a future when decisions in the business and financial community will be made more rationally, when managerial talents will be concentrated more intensively on efficiency in processes of production, and when participants in financial markets will avoid the speculative excesses of the recent past.

Let me invite your attention next to the role that government policies have played this year in fostering these and related adjustments in private policies and practices.

The fundamental objective of monetary and fiscal policies this year has been to maintain a climate in which inflationary pressures would continue to moderate, while providing sufficient stimulus to guard against cumulative weakness in economic activity. Inflationary expectations of businessmen and consumers had to be dampened; the American people had to be convinced that the government had no intention of letting inflation run rampant. But it was equally important to follow policies that would help to cushion declines in industrial production stemming from cutbacks in defense and reduced output of business equipment, and to set the economy on a course that would release the latent forces of expansion in our home-building industry and in state and local government construction. I believe we have found this middle course for both fiscal and monetary policy.

A substantial reduction in the degree of fiscal restraint has been accomplished this year with the phasing out of the income tax surcharge and the increase in social security benefits. These sources of stimulus provided support for consumer disposable incomes and spending at a time when manufacturing employment was declining and the length of the work-week was being cut back.

I do not like, but I also am not deeply troubled, by the deficit in the Federal budget during the current fiscal year. If the deficit had originated in a new explosion of governmental spending, I would fear its inflationary consequences. This, however, is not the present case. The deficit in fiscal 1971—though it will prove appreciably larger than originally anticipated—reflects in very large part the shortfall of revenues that has accompanied the recent sluggishness of economic activity. The Federal budget is thus cushioning the slowdown in the economy without releasing a new inflationary wave. The President's determination to keep spending under control is heartening, particularly his plea last July for a rigid legislative ceiling on expenditures that would apply to both the Executive and the Congress. However, pressures for much larger spending in fiscal 1972 are mounting and pose a threat to present fiscal policy.

Monetary policy this year has also demonstrated, I believe, that it could find a middle course between the policy of extreme restraint followed in 1969 and the policies of aggressive ease pursued in some earlier years. Interest rates have come down, and liquidity positions of banks, other financial institutions, and nonfinancial businesses have been rebuilt—though not by amounts that threaten a reemergence of excess aggregate demand. A more tranquil atmosphere now prevails in financial markets. Market participants have come to realize that temporary stresses and strains in financial markets could be alleviated without resort to excessive rates of monetary expansion. Growth of the money supply thus far this year—averaging about a 5½ per cent annual rate—has been rather high by historical standards. This is not, however, an excessive rate for a period in which precautionary demands for liquidity have at times been quite strong.

The precautionary demands for liquidity that were in evidence earlier in 1970 reflected to a large degree the business and financial uncertainties on which I have already commented. It was the clear duty of the nation's central bank to accommodate such demands. Of particular importance were the actions of the Federal Reserve in connection with the commercial paper market last June. This market, following the announcement on Sunday, June 21, of the Penn Central's petition for relief under the Bankruptcy Act, posed a serious threat to financial stability. The firm in question had large amounts of maturing commercial paper that could not be renewed, and it could not obtain credit elsewhere. The danger existed that a wave of fear would pass through the financial community, engulf other issuers of commercial paper, and cast doubt on a wide range of other securities.

By Monday, June 22—the first business day following announcement of the bankruptcy petition—the Federal Reserve had already taken the virtually unprecedented step of advising the larger banks across the country that the discount window would be available to help the banks meet unusual borrow-

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ing requirements of firms that could not roll over their maturing commercial paper. In addition, the Board of Governors reviewed its regulations governing ceiling rates of interest on certificates of deposit, and on June 23 announced a suspension of ceilings in the maturity range in which most large certificates of deposit are sold. This action gave banks the freedom to bid for funds in the market and make loans available to necessitous borrowers.

As a result of these prompt actions, a sigh of relief passed through the financial and business communities. The actions, in themselves, did not provide automatic solutions to the many problems that arose in the ensuing days and weeks. But the financial community was reassured that the Federal Reserve understood the seriousness of the situation, and that it would stand ready to use its intellectual and financial resources, as well as its instruments of monetary policy, to assist the financial markets through any period of stress. Confidence was thus bolstered, with the country's large banks playing their part by mobilizing available funds to meet the needs of sound borrowers caught temporarily in a liquidity squeeze.

The role that confidence plays as a cornerstone of the foundation for prosperity cannot, I think, be overstressed. Much has been done over recent months by private businesses and by the government to strengthen this foundation. If we ask what tasks still lie ahead, the answer I believe must be: full restoration of confidence among consumers and businessmen that inflationary pressures will continue to moderate, while the awaited recovery in production and employment becomes a reality.

The implications of this answer for the general course of monetary and fiscal policies over the near term seem to me clear. The thrust of monetary and fiscal policies must be sufficiently stimulative to assure a satisfactory recovery in production and employment. But we must be careful to avoid excessive monetary expansion or unduly stimulative fiscal policies. Past experience indicates that efforts to regain our full output potential overnight would almost surely be self-defeating. The improvements in productivity that we have struggled so hard to achieve would be lost if we found ourselves engulfed once again in the inflationary excesses that inevitably occur in an overheated economy.

As I look back on the latter years of the 1960's, and consider the havoc wrought by the inflation of that period, I am convinced that we as a people need to assign greater prominence to the goal of price stability in the hierarchy of stabilization objectives. I have recommended on earlier occasions that the Employment Act of 1946 be amended to include explicit reference to the objective of general price stability. Such a change in that law will not, of course, assure better economic policies. But it would call the nation's attention dramatically to the vital role of reasonable price stability in the maintenance of our national economic health.

At the present time, governmental efforts to achieve price stability continue to be thwarted by the continuance of wage increases substantially in excess of productivity gains. Unfortunately, the corrective adjustments in wage settlements that are needed to bring inflationary forces under control have yet to occur. The inflation that we are still experiencing is no longer due to excess demand. It rests rather on the upward push of costs—mainly, sharply rising wage rates.

Wage increases have not moderated. The average rate of increase of labor compensation per hour has been about 7 per cent this year—roughly the same as last year. Moreover, wage costs under new collective bargaining contracts have actually been accelerating despite the rise in unemployment. In the third quarter of this year, major collective bargaining agreements called for annual increases in wage rates averaging 10 per cent over the life of the contract. Negotiated settlements in the construction industry during the same three months provided for wage increases averaging 16 per cent over the life of the contract, and 22 per cent in the first year of the contract. Nor is the end of this explosive round of wage increases yet in sight. Next year, contracts expire in such major industries as steel, aluminum, copper, and cans. If contracts in those industries are patterned on recent agreements in the construction industry—or, for that matter, in the trucking and automobile industries—heavy upward pressures on prices will continue.

I fully understand the frustration of workers who have seen inflation erode the real value of past wage increases. But it is clearly in the interest of labor to recognize that economic recovery as well as the battle against inflation will be impeded by wage settlements that greatly exceed probable productivity gains.

In a society such as ours, which rightly values full employment, monetary and fiscal tools are inadequate for dealing with sources of price inflation such as are plaguing us now—that is, pressures on costs arising from excessive wage increases. As the experience of our neighbors to the north indicates, inflationary wage settlements may continue

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for extended periods even in the face of rising unemployment. In Canada, unemployment has been moving up since early 1966. New wage settlements in major industries, however, averaged in the 7 to 8 per cent range until the spring of 1969, then rose still further. This year, with unemployment moving above 6½ per cent, negotiated settlements have been in the 8 to 9 per cent range.

Many of our citizens, including some respected labor leaders, are troubled by the failure of collective bargaining settlements in the United States to respond to the anti-inflationary measures adopted to date. They have come to the conclusion, as I have, that it would be desirable to supplement our monetary and fiscal policies with an incomes policy, in the hope of thus shortening the period between suppression of excess demand and the restoration of reasonable relations of wages, productivity, and prices.

To make significant progress in slowing the rise in wages and prices, we should consider the scope of an incomes policy quite broadly. The essence of incomes policies is that they are market-oriented; in other words, their aim is to change the structure and functioning of commodity and labor markets in ways that reduce upward pressures on costs and prices.

The additional anti-inflationary measures announced by the President last Friday will make a constructive contribution to that end. The actions to increase the supply of oil will dampen the mounting cost of fuels, and the recommendations made by the President to improve the structure of collective bargaining in the construction industry strike at the heart of a serious source of our current inflationary problem.

I would hope that every citizen will support the President's stern warning to business and labor to exercise restraint in pricing and wage demands. A full measure of success in the effort to restore our nation's economic health is, I believe, within our grasp, once we as a people demonstrate a greater concern for the public interest in our private decisions.

If further steps should prove necessary to reduce upward pressures on costs and prices, numerous other measures might be taken to improve the functioning of our markets. For example, liberalization of import quotas on oil and other commodities would serve this purpose. So also would a more vigorous enforcement of the anti-trust laws, or an expansion of Federal training programs to increase the supply of skilled workers where wages are rising with exceptional rapidity, or the creation on a nation-wide scale of local productivity councils to seek ways of increasing efficiency, or a more aggressive pace in establishing computerized job banks, or the liberalization of depreciation allowances to stimulate plant modernization, or suspension of the Davis-Bacon Act to help restore order in the construction trades, or modification of the minimum wage laws in the interest of improving job opportunities for teenagers, or the establishment of national building codes to break down barriers to the adoption of modern production techniques in the construction industry, or compulsory arbitration of labor disputes in industries that vitally involve the public interest, and so on. We might bring under an incomes policy, also, the establishment of a high-level Price and Wage Review Board which, while lacking enforcement power, would have broad authority to investigate, advise, and recommend on price and wage changes.

Such additional measures as may be required can, of course, be determined best by the President and the Congress. What I see clearly is the need for our nation to recognize that we are dealing, practically speaking, with a new problem—namely, persistent inflation in the face of substantial unemployment—and that the classical remedies may not work well enough or fast enough in this case. Monetary and fiscal policies can readily cope with inflation alone or with recession alone; but, within the limits of our national patience, they cannot by themselves now be counted on to restore full employment, without at the same time releasing a new wave of inflation. We therefore need to explore with an open mind what steps beyond monetary and fiscal policies may need to be taken by government to strengthen confidence of consumers and businessmen in the nation's future.

In the past two years we have come a long way, I believe, towards the creation of a foundation for a lasting and stable prosperity. Confidence has been restored in financial markets. Businesses have turned away from the imprudent practices of the past. Productivity gains have resumed. Our balance of trade has improved. The stage has been set for a recovery in production and employment—a recovery in which our needs for housing and public construction can be more fully met.

To make this foundation firm, however, we must find ways to bring an end to the pressures of costs on prices. There are no easy choices open to us to accomplish this objective. But that, as I indicated at the outset, is the tough legacy of inflation.

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Farm Capital and Credit Trends in Virginia*

The farming sector of our economy is unusually dynamic. Changes taking place in farming have important implications for farm operators and related businesses including financial institutions. This article describes the capital and credit trends on Virginia farms and discusses their implications for financial institutions.

Many of the changes affecting farming increase capital requirements. Capital investment in farming is at an all-time high, and indications are that it will continue to increase. Several important factors account for the increase:

1. Consolidation has created fewer and larger farms. The number of farms in the United States decreased from 6.1 million in 1940 to approximately 2.9 million in 1968. Production assets per farm increased from $6,158 in 1940 to $79,223 in 1968.[1]

2. Capital is a substitute for labor and land in farming. Lower unit costs available through newer and larger machines and other forms of technology have forced farmers to move to larger scale operations. Most of this mechanization and other technology is capital intensive. Production assets per farm worker increased from $3,326 in 1940 to $45,872 in 1968.[2]

3. The use of purchased inputs such as fertilizers and pesticides has increased. As farms become more mechanized and specialized, they rely more on purchased inputs. The index of purchased farm inputs increased from 91 in 1950 to 124 in 1967.[3]

4. Operating costs per dollar of farm sales have increased because of expanding use of purchased inputs and rising prices for these inputs. The index of prices paid by farmers has risen more than one-third since 1950. Net farm income declined from 40% of cash receipts in 1950 to 33% in 1967.[4]

These trends are likely to continue. Thus, farmers and others interested in agriculture are concerned about the availability of capital to support future adjustment and growth in the farm sector.

There are basically two types of capital with which a business can be financed—equity capital and debt capital. Traditionally, farm growth has been financed largely with retained earnings. From 1900 to 1950, more than 85% of the new capital invested in United States agriculture came from farm savings.[5] Recently, however, farmers have financed fewer of the increasing capital requirements from savings, and they have turned more to debt capital for financing. Farm debt has grown much more rapidly than investment in assets or production expenses since 1950.[6] Total farm debt rose from $10.8 billion in 1950 to $49 billion in 1968—an increase of 350%.

Changes in Virginia Farming Virginia farming has followed the national trend. The average farm size in Virginia increased from 103.1 acres to 149.4 acres between 1950 and 1964, while the number of farms decreased from 150,997 to 80,354. During the same period, average value of land and buildings per farm increased 226%—from $8,458 to $27,572.

Between 1950 and 1964, realized net farm income in Virginia increased from $1,527 to $2,253 per farm, an increase of only 48% in contrast to a 226% increase in investment per farm in land and buildings. Thus, farmers have had to use more and more debt capital to finance farm growth. Average outstanding debt per farm, excluding trade credit, rose from $728 in 1950 to $3,880 in 1964, an increase of 443%.

While these data encompass farms of all sizes, the changes are even more striking when commercial farms—the larger, more dynamic units—are considered separately. Farms are classified by the Bureau of the Census into economic classes on the basis of the value of farm products sold as follows:

Economic Class	Value of Farm Products Sold
I	$40,000 and over
II	20,000 to 39,999
III	10,000 to 19,999
IV	5,000 to 9,999
V	2,500 to 4,999
VI	50 to 2,499

* This article is an abridgement of an earlier paper by the author, "Farm Capital Formation and Financing in Virginia," Research Report A.E.4, Department of Agricultural Economics, Virginia Polytechnic Institute and State University (Blacksburg, Virginia: October 1970).

[1] USDA, ERS, Agriculture Information Bulletin 334, *Balance Sheet of Agriculture, 1968* (Washington, January 1969), p. 23.

[2] *Ibid.*, p. 24.

[3] USDA, Statistical Bulletin 223, *Changes in Farm Production and Efficiency, 1968* (Washington, June 1968), p. 16.

[4] *Balance Sheet of Agriculture, op. cit.*, p. 20.

[5] Alvin S. Tostlebe, *Capital in Agriculture: Its Formation and Financing Since 1870*, A study by the National Bureau of Economic Research (Princeton, New Jersey: Princeton University Press, 1957), p. 146.

[6] Gene L. Swackhamer and Raymond J. Doll, *Financing Modern Agriculture: Banking's Problems and Challenges* (Kansas City, Missouri: Federal Reserve Bank of Kansas City, 1969), p. 10.

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Table I

SELECTED CHARACTERISTICS OF FARMS BY ECONOMIC CLASS

Virginia, 1964

Item	Economic Class I	Economic Class II	Economic Class III	All Other Farms[1]
	Percent	Percent	Percent	Percent
Number of farms	2.2	3.7	6.9	87.2
Acreage in farms	11.0	11.2	14.1	63.7
Expenditures on selected inputs:				
Feed for livestock and				
Total farm products sold	33.1	17.5	16.3	33.1
poultry	44.8	19.6	12.2	23.4
Seeds, plants, and rtees	3.4	5.8	9.5	81.2
Fertilizer materials, gasoline, oil, and petroleum	18.3	15.9	18.2	47.6

[1] Includes Class IV, V, and VI farms, part-time farms, part-retirement farms, and abnormal farms.

Source: **U. S. Census of Agriculture: 1964,** Vol. 1, Part 24 (Washington, 1967), State Table 17.

Table I shows data for the Virginia farm sector by economic class and permits the identification of commercial farms as defined below.

Class I and Class II farms—those generally considered the most economically viable in the present economic setting—contained only 5.9% of the farms but accounted for 50.6% of the value of all products sold and 22.2% of the land in farms. In 1964, Class I and Class II farms accounted for 64.4% of the feed, 59.3% of the livestock, 40.4% of the fertilizer materials, and 34.2% of the petroleum products purchased by all farms. Conversely, Virginia farms with gross sales of less than $10,000 accounted for 87% of all farms and 64% of the land in farms. They accounted for 33% of gross farm sales, 23% of feed, 27% of livestock, and 41% of fertilizer materials purchased.

Average investment in production assets in 1964 was $330,160 for Class I farms compared to $36,270 for Class V farms. The number of acres per farm averaged 739 and 147 for these classes, respectively.

Clearly, the capital and credit needs of the larger commercial farms which control most of the assets in farming and account for a large proportion of the purchased inputs are different from those of the smaller farms. According to the 1964 Census of Agriculture, more than 75% of the farms in the United States with gross sales of $20,000 or more had debts averaging $40,425, while less than 60% of the farms with gross sales of $5,000 or less had debts averaging $5,178.[7]

Capital Requirements on Virginia Farms Requirements for both investment capital and operating capital have been increasing for commercial farming in Virginia. Moreover, this trend is likely to continue. A study by the Virginia Commission of the Industry of Agriculture estimated that the number of farms in the state with gross sales of $20,000 or more will increase 58% between 1964 and 1980 and that the average value of production assets for these farms will increase 21%. The Commission estimated that average production assets for Class I and Class II farms will be $425,000 and $150,000, respectively, in 1980.[8]

Loans to Virginia Farmers Increased capital requirements have had an impact on the size of loans and the use of credit by Virginia farmers. The experience of the Production Credit Associations reflects the increase in the size of loans (Table II). Only 4.8% of the volume of outstanding PCA loans in 1960 was to borrowers with loan balances exceeding $50,000 compared to 16.3% in 1968. Borrowers with loan balances under $25,000 decreased from 86.1% of the total in 1960 to 62.7% in 1968.

Between 1950 and 1964 debt as a percent of cash farm income and non-real estate debt as a proportion of production expenses more than doubled. As agriculture in Virginia becomes more commercial, more debt capital will be used and loan size will continue to increase.

Table II

SIZE OF LOAN BALANCES FOR PCA BORROWERS

Virginia, June 30, 1960 and 1968

Size of Loan Balances	1960 Total Credit Outstanding	1960 Percentage of Total	1968 Total Credit Outstanding	1968 Total Percentage of
	1,000 dollars	Percent	1,000 dollars	Percent
$25,000 and under	15,421	86.1	28,234	62.7
25,001 to 50,000	1,621	9.1	9,475	21.0
50,001 to 100,000	762	4.3	5,587	12.4
Over 100,000	105	0.5	1,738	3.9
Total	17,909	100.0	45,034	100.0

Source: Federal Intermediate Credit Bank of Baltimore.

[7] Bureau of the Census, *U. S. Census of Agriculture: 1964,* Vol. III, Part 4, "Farm Debt" (Washington, 1968), Table 13.

[8] A Report by the Commission of the Industry of Agriculture, *Opportunities for Virginia Agriculture* (Richmond, Virginia: Commonwealth of Virginia, 1969), p. 25.

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Table III

LEGAL LENDING LIMITS OF COMMERCIAL BANKS INCLUDING BRANCHES IN LOCATIONS OTHER THAN THAT OF THE HOME BANK

Virginia, December 31, 1968

Legal Lending Limit to an Individual Borrower	Banks in Towns with Population of:			
	5,500 and under		Over 5,500	
	Number	Percent	Number	Percent
$25,000 and under	22	8.7	4	1.5
25,001 to 50,000	48	18.9	15	5.5
50,001 to 100,000	59	23.2	54	19.9
Over 100,000	125	49.2	198	73.1
Total	254	100.0	271	100.0

Source: **Southern Bankers Directory, Virginia, 1969.**

Availability of Credit General economic conditions affect the availability of credit to farmers in Virginia. With the exception of the Farm Credit System and the Farmers Home Administration (FmHA), institutions that lend to farmers also lend to other borrowers. When these institutions can make loans more advantageously to nonfarm borrowers, the flow of credit to farmers may be reduced.

The Farm Credit System obtains loan funds from the sale of bonds on the national financial markets. Through this system, the farmer has access to the national financial markets. If conditions in the capital markets and the general economy make alternative investments more attractive, funds available to the Farm Credit System will be reduced. Of course, the Farm Credit System can make its bonds more attractive by raising the interest rate, but this is reflected in higher rates to borrowers.

The FmHA makes direct loans to farmers from Congressional appropriations. It also insures loans to farmers made by other lenders. The types of FmHA loans and the funds available can be changed at any time by Congress.

Characteristics of Major Farm Lending Agencies

Commercial Banks There were 233 state and national banks in Virginia in 1969 operating 998 offices. At the end of the year 189 of these banks held some farm loans. Most banks make both real estate and non-real estate loans to farmers. Generally, real estate loans are those loans secured by mortgages on farmland including improvements and used to purchase farm units, additional land, or to finance capital improvements. Non-real estate loans are all those not secured by real estate. They may be either short or intermediate term. Short-term loans are repayable within 12 months and are used to meet current operating and living expenses. Intermediate-term loans require more than 12 months to repay and are used for investments such as livestock and machinery.

Many banks in rural America have encountered problems because farms have grown faster than the size of banks serving them. These banks often receive farm loan requests that exceed the amount they can lend under legal limits. The legal limit for national banks is 10% of the bank's capital and surplus (except for livestock loans, which may go to an additional 15%). State banks in Virginia can lend up to 15% of their capital and surplus to a single borrower.

A request for a loan exceeding the legal lending limit is called an overline request. In 1966, a national survey of banks making agricultural loans revealed that 14% of all banks had overline requests from farm customers.[9] This problem, however, does not appear to be serious in Virginia. Only 4 of 259 Virginia banks reported overline requests. Moreover, in 1968 only 22 offices of 254 banks and branches located in rural towns—towns with a population less than 5,500—had legal lending limits of less than $25,000, and 184 of these had legal lending limits of $50,000 or more (Table III). According to the 1966 survey very few bank loans to farmers were for $25,000 or more. In 1968 all but 4 Virginia counties had at least one banking office with a legal lending limit of $25,000 or more, and all but 8 had at least one banking office with a legal lending limit of $50,000 or more.

In 1962, Virginia banking law was amended to permit limited statewide branching.[10] As a result,

Table IV

LEGAL LENDING LIMITS OF COMMERCIAL BANKS EXCLUDING BRANCHES

Virginia, December 31, 1968

Legal Lending Limit to an Individual Borrower	Banks in Towns with Population of:			
	5,500 and under		Over 5,500	
	Number	Percent	Number	Percent
$25,000 and under	19	17.0	3	2.4
25,001 to 50,000	37	33.0	13	10.4
50,001 to 100,000	34	30.4	31	24.8
Over 100,000	22	19.6	78	62.4
Total	112	100.0	125	100.0

Source: **Southern Bankers Directory, Virginia, 1969.**

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[9] Emanuel Melichar, "Bank Financing of Agriculture," *Federal Reserve Bulletin*, Board of Governors of the Federal Reserve System (Washington, June 1967), p. 929.

[10] For a detailed discussion of Virginia banking laws, see Harmon H. Haymes, *A Study of Banking in Virginia*, A report prepared for the Rural Affairs Study Commission (Richmond, Virginia: Commonwealth of Virginia, n.d.).

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the structure of Virginia banking changed significantly, which is the primary reason that legal lending limits are not a serious limitation in Virginia.

A branch office has the same legal lending limit as its home office. Thus, one of the major advantages of branch banking as far as rural areas are concerned is that the legal limit on the size of a loan a bank can make to a single borrower is increased. The impact of branch banking on legal lending limits in rural Virginia is suggested by a comparison of Tables III and IV.

When banks and branches outside the parent bank's area are considered, only 8.7% of the banking offices in rural towns have a legal lending limit of $25,000 or less and 27.6% have a legal lending limit of $50,000 or less. When the consideration of branches is excluded, 17% of the banks in communities with a population of 5,500 or less have legal lending limits of $25,000 or less and 50% have legal lending limits of $50,000 or less (Table IV). Excluding branches, only 22 banks in rural areas had a legal lending limit of $100,000 or more compared to 125 when branches were included. These data highlight the importance of branch banking to the growth of farm firms, especially in view of the large average investment projected for Class I farms in Virginia.

Production Credit Associations There are 13 Production Credit Association (PCA) offices in Virginia. PCA's are federally-sponsored credit cooperatives owned entirely by the member borrowers. They make both short-term (less than one year) and intermediate-term loans (up to seven years) to farmers for any agricultural purpose. Most PCA loans are secured by real estate mortgages and first mortgages on chattel property. Any farmer is eligible to borrow from a PCA, but he must become a member of the association by purchasing stock equal to 5% of the value of the loan. When the loan is repaid, the stock may be sold back to the association.

Federal Land Banks Like Production Credit Associations, Federal Land Bank Associations (FLBA's) are federally-sponsored credit cooperatives. In Virginia, the 13 FLBA's and PCA's are housed together.

FLBA's are limited by law to making real estate loans. Loans can be made for any constructive purpose and may be for periods up to 35 years. An FLBA borrower must derive the principal part of his income from farming. A farmer has to purchase stock equal to 5% of the value of his loan and become a member of the association.

Insurance Companies Insurance companies are a major institutional supplier of farm real estate loans in the United States. In Virginia both commercial banks and FLBA's extend more real estate credit than do insurance companies. Nine life insurance companies accounted for approximately 80% of all life insurance farm real estate loans in Virginia in 1968.

Farmers Home Administration The Farmers Home Administration is an agency of the U. S. Department of Agriculture, which has 35 county offices in Virginia, established to make a wide variety of low cost loans to farmers and rural residents. The FmHA can make loans only to farmers who cannot obtain credit from other sources on reasonable terms, and FmHA borrowers agree to obtain credit from other lenders when their financial situation improves. FmHA loans may be larger relative to security value than loans by commercial lenders. For example, with direct farm ownership loans, FmHA may lend up to 100% of the normal value of the farm.

The Farmers Home Administration has three objectives: (1) to strengthen the economic position of individual family farmers, (2) to improve rural communities, including towns with populations of less than 5,500, and (3) to alleviate rural poverty.[11]

As a government agency, the FmHA has three sources of funds to lend: (1) a direct loan account appropriated by Congress, (2) a revolving fund established by Congress for emergency loans, and (3) funds furnished by commercial banks and other lenders and insured by the FmHA. FmHA makes five types of loans: (1) operating loans for current expenses, (2) long-term loans to buy and improve farmland, including residence improvements, (3) emergency loans in designated dis-

Table V

SELECTED CHARACTERISTICS OF PCA AND BANK BORROWERS

Virginia, 1966

Item	PCA's	Commercial Banks
Number of farm borrowers	5,950	51,345
Average assets per farm	$85,362	$50,835
Average net worth per farm	62,859	38,413
Average total debt per farm	22,503	12,326

Source: Compiled from data provided by the Farm Credit Administration and the Federal Reserve System.

[11] Aaron G. Nelson and William G. Murray, *Agricultural Finance*, Fifth Edition (Ames, Iowa: Iowa State University Press, 1967), p. 320.

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aster areas, (4) loans to finance recreational enterprises as a part of operating and farm ownership loans, and (5) rural housing loans.

Trade Credit While the total amount of trade credit extended by suppliers of farm inputs in Virginia is unknown, evidence suggests that it is substantial. Merchant credit may be short term or intermediate term, and loans may be secured by the item purchased or they may be unsecured, open-account loans.

Trends in Credit Sources The proportion of total farm real estate credit held by different financial institutions in Virginia has changed considerably since 1950. The FLBA's increased their relative market share of such loans from 12% in 1950 to 29.5% in 1970; life insurance companies' share decreased from 11.2% to 10% over this period. The relative market share of banks declined from 37.7% to 23%.

Non-real estate farm debt provided by institutions in Virginia increased from $35.2 million in 1950 to $152.1 million in 1970. Contrary to the situation in real estate credit, banks have long been the major institutional source of non-real estate credit in Virginia. Their proportion of this type of credit declined from 74.4% in 1950 to 62% in 1970. The PCA's held 33.5% of the non-real estate credit in 1970 compared to 15.1% in 1950.

Reliable trend data on trade credit are not available on a state basis. The 1960 Sample Survey of Agriculture, however, indicated that merchant credit accounted for approximately 22% of non-real estate debt of farm operators in the United States.[12] Moreover, available evidence indicates that this is a growing source of credit.[13]

Characteristics of Bank and PCA Loans In 1966, the Federal Reserve System and the Farm Credit Administration conducted an agricultural loan survey. The Federal Reserve sample survey of 44 banks indicated that Virginia banks had 81,281 loans outstanding to 51,345 farm borrowers. The PCA's collected data from a 10% random sample of their borrowers which indicated that PCA's had made 7,810 loans to 5,950 borrowers.

The survey showed that the PCA's serviced larger farm operations than did banks (Table V). Assets per farm averaged $85,362 for PCA borrowers and $50,835 for bank borrowers, and average total debt per farm was 83% greater for PCA borrowers than for bank borrowers. Average total debt varied widely by type of farm among both bank and PCA borrowers. General, tobacco, and meat animal farms were the three most important types.

Important differences in the types of farms operated by PCA and bank borrowers help explain borrowing differences. One-fourth of PCA borrowers operated meat animal farms, about twice the proportion found among bank borrowers. Dairy farmers accounted for 15.5% of PCA borrowers, also a much higher proportion than at banks. General farmers comprised a higher proportion of bank customers.

Approximately one-third of PCA loans and more than two-fifths of bank loans were used for current operating expenses other than the purchase of livestock. Loans to purchase machinery and equipment made up a fourth of bank loans but only 13% of PCA loans.

The largest loans made by both institutions were for purchasing farm real estate. Approximately 10% of bank loans were for this purpose compared to only 2.6% of PCA loans.

Loans with maturities of one year or less accounted for approximately 60% of both bank loans and PCA loans. The percentage of loans with a maturity of over three years was considerably higher for PCA's than it was for banks.

There is a marked difference in the maturity of loans for machinery and equipment between the two institutions. Most bank loans for this purpose were for three years or less, compared to 61% of the PCA loans. This comparison suggests that banks are relatively conservative on such loans considering that the economic life of most farm machinery is greater than three years.

Over one-half of the farm borrowers at both banks and PCA's were full owners of the land they operated. Both institutions had about the same proportion of tenant farmers and landlords among their customers. However, part owners accounted for almost 24% of the PCA borrowers compared to only a tenth of the bank borrowers.

Conclusion The capital needs of Virginia farmers have increased dramatically in recent years, and the evidence indicates that this trend will continue. Lending institutions can expect to face a rising demand for credit. As farms continue to increase in size, the demand for credit and the average size loan per farm will increase.

Thomas E. Snider

[12] Willellyn Morelle, Leon Hesser, and Emanuel Melichar, *Merchant and Dealer Credit in Agriculture*, Board of Governors of the Federal Reserve System (Washington, 1966), p. 17.

[13] John A. Hopkin and Thomas Frey, *Problems Faced by Commercial Banks of Illinois in Meeting the Financial Requirements of a Dynamic Agriculture*, Agricultural Economics Report 99, Department of Agricultural Economics, Agricultural Experiment Station, University of Illinois (Urbana-Champaign, April 1969), p. 9.

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The Supply of Money in the United States

Part I — The Institutional Development

"The primary purpose of the Federal Reserve Act . . .," wrote Harvard economist O. M. W. Sprague in 1914, "is to make certain that there will always be an available supply of money and credit in this country with which to meet unusual banking requirements." An article of encyclopedic length could be written in an attempt to answer the questions prompted by this statement. For example: What is an "available supply"? Why money *and* credit? What are "unusual" banking requirements? Did a source of supply exist before the Federal Reserve System? If so, what happened to it that a new institution was called for?

Sprague gave answers to some of these questions in the long article he wrote (41 pages) for the *Quarterly Journal of Economics* (February 1914) in elaboration of the original topic sentence cited above. Other economists, as well as bankers and central bankers, also have tried their hands at these questions. The product has been an extensive literature.

Paradoxically enough, the Federal Reserve has not emphasized strict control over the money supply during most of its 50-odd-year history. It has put more emphasis on the cost and availability of *credit*. Only in recent years has the supply of money proper come into its own as a matter for critical discussion, analysis, and investigation.

From Metallic Standards to Central Banking Inattention to the money supply is more than a central bank oversight; it has roots and precedent in monetary history. Through most of the late 18th and early 19th centuries, when central banking was in its formative stages, the basic money commonly in use was primarily metallic. The earth supplies such money at a cost, and anyone willing to give up the necessary resources can get as much of it out of the earth as he wishes. Precious metals are scarce commodities, and the decision to prospect for them is not fundamentally different from the decision to acquire them by engaging in some other kind of business venture. Like other business activities, prospecting and mining activities are equilibrated by forces of demand and supply working through markets. In metallic monetary systems, therefore, the quantity of standard money in existence at any given time is determined by market forces.

The use of metallic money, however, involves real costs to society, and these costs could be and were economized—but not eliminated—by the substitution of paper money for coin. Then, both paper and metallic currency were economized by checkbook banking; and the prediction is now that checkbook banking probably will be replaced by electronic machinery and credit cards.

The development of paper currency and checkbook money provoked the first social concern over control of the quantity of money. Banks that issued or created demand obligations were constrained to redeem these notes or checks in metal—gold or silver; so bank paper simply extended or economized the existing quantity of precious metal. Governments also issued paper money; but this kind of act required political license, which was given neither easily nor often. Effective constraints were the political checks-and-balances between factions or branches of the government and constitutional proscriptions.

Central bank machinery took the separation of money and metal even further. Central banks were bankers' banks, and ordinary commercial banks were encouraged to deposit their metallic reserves in the central bank. This deposit served as a base on which the banks could extend credit and create deposits. The separation of media of exchange and metal was by this time almost a full estrangement; and while a final decree has yet to be granted, the divorce is all but complete. However, money still exists; in fact, it is more important to the functioning of economic society than ever before.

At times in the past, the link between the quantity of gold and the quantity of money has been broken

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temporarily. (One example is the period in the United States between 1862 and 1879.) Always this phenomenon called forth principles from governing bodies—Congress and the Executive—on how the quantity of money should and could be regulated until the metallic connection was reestablished. Now that the relationship is forever gone, principles for regulating the quantity of money are even more compelling. Economists have responded with intensified research on various aspects of the linkages and lags of money creation, and on the question of whether the creation of money begins with the central bank or by indirect stimulus from the commercial banking system and the private economy.

The Definition of Money In recent years, monetary thought and research has examined at length the demand for money and, as a corollary, the definition of what to include in the category of "money." While all the returns on these issues are not in, two principles have been fairly well established: (1) Changes in the stock of money have been established empirically as a fundamental factor initiating changes in general spending; and (2) The definition of money must include currency and demand deposits subject to check, and it may include as well time deposits in commercial banks. Other principles describing and defining the behavior of money have been conjectured and still others are being formed—for example, the demand for money in the framework of inflation; but the provisional conclusions summarized above bring the status and knowledge of the demand-for-money function to the point where similar knowledge and principles for the supply function are necessary and pertinent.

Discussions of the supply of money necessarily presume a definition of money. For the sake of simplicity if nothing else, the classification adopted here rests on a narrow definition of money, one that includes: (a) currency outside commercial banks, the central bank, and the federal government, and (b) private demand deposits subject to check, exclusive of interbank deposits. The principles governing the supply of this stock can be applied without much qualification to "wider" stocks of money that include some amount of time deposits.

Central Bank Control Any specification of the supply of money must be circumscribed by principles governing the creation of money. Money cannot be supplied in an institutional vacuum. A gold or bimetallic standard is such a set of principles. It is in the first place a formal framework that operates automatically. When such systems are abandoned, some other arrangement must be made. Central banks are one such alternative arrangement.

The function of a central bank in today's world is to supply money to the economy even though the original purpose of such institutions was largely to make the money stock more responsive to seasonal variations in the demand for money. Once a central bank is in a position to supply new money without reference to the rules of a gold standard, some other rules should be established to govern its operations.

That the supply of money should be under the general control of government is specified in Section 8 of the Constitution (Powers of Congress) where it states: "The Congress shall have power . . . to coin money [and] regulate the value thereof. . . ." This principle was established further by Supreme Court decisions, and was made even more explicit in the great debates on monetary affairs in Congress during the 19th century. John C. Calhoun, whose ability as a monetary policy theorist has been overshadowed by the drama of other social issues in which he took part, stated authoritatively in 1834:

> Whatever the Government receives and treats as money, is money; and if it be money, then they have the right, under the constitution, to regulate it. Nay, they are bound, by a high obligation, to adopt the most efficient means, according to the nature of that which they have recognized as money, to give to it the utmost stability and uniformity of value.

No present day economist or jurist could state the matter more clearly or more logically.

Early Central Banking Institutions A great deal of controversy developed in Congress over the constitutionality of chartering the First and Second Banks of the United States—the first institutions that came to have some central banking characteristics. The Whig view, which was generally favorable to the creation of these Banks, was that Congress could commission other institutions to assist it with specific duties, such as, in this case, regulation of the monetary system. The opposing view, espoused by the Jacksonian Democrats during the sensational struggle between Jackson and the Second Bank, was nowhere better given than in Jackson's veto message on the bill to recharter the Second

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Bank in 1832. The constitutional power of Congress, he held, could not be delegated. "It was conferred to be exercised [by Congress]," he concluded, "and not to be transferred to a corporation." While the charters of the First and the Second Banks were allowed to lapse, subsequent Congresses have never shown much eagerness to exercise direct responsibility over the supply and value of money. As a practical matter, Congress has been content to specify rules for policymaking agencies to follow and goals for them to aspire to.

Soon after the demise of the Second Bank, Congress created the Independent Treasury. This institution was supposed to be what its name implied—independent of banks and the monetary system. It could not remain aloof for long, however, and ultimately grew into central banking clothes of an advanced order. It was the Treasury Department extended to include enough sub-Treasury offices to carry out all the fiscal affairs of the federal government without recourse to commercial banks or a central bank. It was under the direction of the Secretary of the Treasury who, in effect, became a policymaking central banker. But the Secretary was and is an Executive appointee. His intervention into monetary affairs, was regarded as exceeding the prerogatives of his office.

Some 25 years after the Treasury was declared to be "independent" of banks and the monetary system, Congress attempted to reform the banking system by passing the National Bank Act. This Act was begun as a Civil War measure by the federal government but did not become fully operational until after the War ended. It was designed to bring all banks under federal charter so that the currency they issued would have uniform appearance and value. Since not even half of all commercial banks came into this system, a prohibitive tax on state bank note issues was added to the original Act. The state banks thereupon eschewed note issues, but they continued to operate outside the national banking system by issuing demand deposits for all of their commercial lending activities.

The national banks thereafter exclusively issued currency (National Bank notes). They also served as depository banks for the Treasury thus reintroducing some interdependence between the commercial banking system and the government. Finally, the national banks in the larger commercial centers came to act as seasonal depositories for their "country" correspondents. Collectively, these larger national banks thus had some of the characteristics of a central bank. However, they were fundamentally commercial enterprises and had neither the facility nor the responsibility to behave as a central banking system.

Contemporary Central Banking The formation of the Federal Reserve System was both a reaction to Treasury intervention in the money market and an attempt to develop a monetary system that would operate less erratically than it was currently operating with a national system of commercial banks. Stability was to be achieved through the Federal Reserve Banks' manipulation of the discount rate. Such policy was supposed to synchronize seasonal variations of the money supply with fluctuating seasonal demands.

The explicit charge of the Act itself only called for the Federal Reserve Banks "to furnish an elastic currency, to afford means of rediscounting commercial paper, [and] to establish a more effective supervision of banking in the United States." The means of furnishing an elastic currency was through Reserve Bank discounting of "notes, drafts, and bills of exchange arising out of actual commercial transactions." Discount rates charged by the Reserve Banks were to be set "with a view of accommodating commerce and business." Under the original Federal Reserve Act, the rules of the gold standard, together with the commercial credit doctrine for discounting bank paper, were assumed to fix limits to the scope of central bank policy.

The early 1930's saw the end of the gold standard as an operational constraint on Federal Reserve policy. By the Banking Acts of 1933 and 1935, the technical controls of the Federal Reserve System over the quantity of money were greatly extended. These acts formally established open market operations in government securities and discretion over reserve requirements for member banks (in addition to discounting) as the legitimate province of Federal Reserve action. However, precise specifications for the use of this machinery were still lacking. Without rules or directions, the Federal Reserve System was extremely vulnerable to Treasury and Executive domination.

The general deemphasis of monetary policy in the 1930's, in conjunction with the inattention to general rules for its policies, saw Federal Reserve

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policies subordinated to the Treasury's debt-management policies. This relationship continued through the war years and was only ended by a Congressional resolution of 1950.

By this resolution, both the Federal Reserve System and the Treasury were charged with carrying out policies that "shall be consistent with and shall promote the purpose of the Employment Act of 1946." This resolution also led in 1951 to the famous Accord. During the remainder of the decade, the Federal Reserve System was allowed relative autonomy in using its technical powers to further the provisions of the Employment Act.

Another phase of central bank development became discernible in the 1960's. The quantity of money, which had been relegated to a passive role by academic analysts, was reappraised both theoretically and empirically. Federal Reserve research and policies, as well as Congressional discussion, reflect this new prominence of money. Another resolution of the Joint Economic Committee made in June 1968 states:

> The Congress should advise the Federal Reserve System that variations in the rate of increase of the [narrow] money stock ought not to be great or too sharp. In normal times, for the present, the desirable range of variation appears to be within the limits of 2 to 6 per cent per annum, measured on a quarter-by-quarter basis—a range that centers on the rate of long-run increase in the potential gross national product in constant dollars.

Renewed interest in control over the quantity of money has raised empirical questions for research with regard to the supply of money. What basically determines the quantity of money? How is it measured? What are the tolerances of measurement? What are the operational problems of control? Central to these questions is the framework in which the genesis of money takes place. Such a framework will be presented as Part II of this article in the next issue of the *Monthly Review.*

Richard H. Timberlake, Jr.

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