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FINANCIAL FLOWS IN RECENT BUSINESS CYCLES

Sue N. Atkinson*

Publication in 1955 by the Federal Reserve of a national system of annual flow of funds accounts provided a much needed framework for study of interrelations between transactions in financial instruments and transactions in goods and services. In 1959 these accounts were published on a quarterly basis and in 1962 on a seasonally adjusted quarterly basis.[1] Since large intra-year movements are not uncommon in financial flows, elimination of seasonal influences makes for much closer correspondence of financial data to the principal measures of economic activity. It is now possible, for the first time, to systematically analyze recent cyclical patterns in the volume and direction of financial flows.

The figures summarized in this paper deal only with changes in the direction and volume of financial (as opposed to non-financial) flows, and cover only the three most recent business cycles—1953-1957, 1957-1960 and 1960-1962. As such, they have possible significance for areas of macro-analysis which recently have been receiving particular attention: the adjustment of various sectors of the economy toward desired positions of net worth, forms of assets held, and volume and types of liabilities assumed; shifts in the origin of pressures and sources of ease in financial markets over the business cycle; and therefore changing financial pressures in the form of interest rate movements as business conditions advance and recede.

The purpose here is to see if there is some cyclical regularity with respect to financial assets acquired, assumption of liabilities, and net contribution to or drawing on financial markets by the major sectors of the economy. The relation between changes in financial and non-financial transactions, however, is not examined. In this sense, then, the following material is only a fragment of business cycle analysis.

I. Method

This study is based on unpublished tabulations prepared by the Flow of Funds and Savings Section of the Board of Governors of the Federal Reserve System. The data relates to sources and uses of funds in financial transactions

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1. Annual accounts developed by the Federal Reserve Board were first published in *Flow of Funds in the United States, 1939-1953* (Board of Governors of the Federal Reserve System, Washington, D.C., 1955). Structure and uses of the quarterly flow of funds accounts are described in the August 1959 *Federal Reserve Bulletin*, p. 828. Quarterly accounts have been maintained since 1959 in *Bulletin* tables and supplementary publications. Seasonally adjusted quarterly data first appeared in the November 1962 *Federal Reserve Bulletin*, Volume 48, Number 11. The data has been collected in *Flow of Funds Accounts, 1945-1962, 1962 Supplement* (Board of Governors of the Federal Reserve System, Washington, D.C.).

See also the papers on "The Flow of Funds Accounts: A New Approach to Financial Market Analysis" in the May 1963 issue of this *Journal*.

for the following sectors: non-financial corporations, consumers and rest of the world, commercial banks, insurance and pension funds, savings institutions, other non-bank finance, the federal government, and the central bank.[2]

Each cycle was divided into three phases—recession, rapid expansion and slow expansion. The turning points are those defined by the National Bureau of Economic Research. The division of each cycle into periods of fast and slow expansion is based on change in the rate of rise of industrial production and Gross National Product.[3]

A total net flow of principal sources (borrowing) and uses (lending) of funds by each sector was computed for each of the three phases of each cycle. To make comparison easier, the flow totals were then converted to an average flow for each phase and stated at annual rates; that is, for a five quarter phase, for instance, the total of the seasonally adjusted flow of funds into a particular use over the five quarters was divided by five and multiplied by four. Finally, the average flow in each phase was calculated as a proportion of the average rate of flow for the cycle as a whole. These ratios are interesting in that they point up changes in the rate of flow of funds within each individual cycle. In some cases, the average rate of flow for the cycle as a whole was positive as against negative annual average rates, and the resulting ratio figures, therefore, meaningless. While calculation of changes in the rate of flow of funds into particular uses on an annual average basis obscures quarterly changes within any one phase of the cycle, and makes impossible the visually more satisfying use of line charts, the result is a smoothing out of sometimes large erratic movements between quarters and a clearer contrast between changes particularly associated with each phase of the business cycle.

Questions can be raised as to the representative nature of the three cycles for which seasonally adjusted data is available. The time span covered is brief enough to unduly emphasize factors peculiar to this period. For instance, treatment of 1960-1962 as a complete cycle and its division into fast and slow expansion periods certainly is questionable. In several instances data for 1960-1962 do not seem to fit the pattern indicated by the first two cycles. Whether this is because of changes in public policy in this period or because the period should not be treated as a full cycle cannot be determined at this point. On the other hand, given the changes in public policy since the end of World War II, and the use by various sectors of the economy of a broadening array of financial instruments for both sources and uses of funds, it is quite

2. Farm business, non-corporate non-financial sectors, and state and local government sectors were excluded for purposes of simplification, since the amounts involved were very small relative to other sectors. Any series that did not attain as much as $800 million average annual rate of flow over 1961-1962 in absolute terms, disregarding sign, was also excluded.

3. The cycle divisions are as follows:

	Recession	Fast Expansion	Slow Expansion
1953-1957	III/53-II/54	III/54-IV/55	I/56-III/57
1957-1960	IV/57-II/58	III/58-II/59	III/59-II/60
1960-1962	III/60-I/61	II/61-IV/61	I/62-IV/62

The divisions between periods of fast and slow expansion were done by Norman Trueblood of the staff of the Board of Governors of the Federal Reserve System. Tabulations were under the general supervision of Stephen Taylor, Chief, Flow of Funds and Savings Section of the Board.

possible that only those cycles since World War II which are relatively free of war and postwar influences have real relevance for the future.

The sectors analyzed appear to fall into three more or less distinct groups. The federal government and the rest of the world comprise Group I sectors; figures for the years covered by the study show no consistent changes in either the direction or volume of their total borrowing and lending over the business cycle. Response to the cycle can be found in component parts of their sources and uses of funds, but erratic changes, particularly in federal tax and expenditure programs, obscure the influences on spending and tax yields of the relatively mild postwar cycles. Further, the quickness of recoveries and the fact that recession-induced deficits tend to lag by a year or more also distort the correlation between business conditions and government financing.

Group II sectors do show some cyclical response in both volume of lending and borrowing and in the shifting pattern of individual assets they choose to hold. But while cyclical influences are discernable, their choice of assets is severely limited by the necessity for maximizing their income within the limits of the types of markets they serve, and by the fact that their liquidity requirements are both low and relatively stable over the cycle. These sectors are, for the most part, financial intermediaries—insurance and pension funds, savings and loan associations, mutual savings banks, credit unions and miscellaneous non-bank financial institutions. Income to these intermediaries depends on the volume of funds borrowed and reloaned, as well as the spread between yields on their assets and return paid their depositors and shareholders. Heavy demand for mortgage money, particularly in the postwar years, has led to consistent efforts to borrow the maximum possible volume of funds from savers and channel it immediately and directly into income-earning financial assets. For these reasons changes by Group II sectors in the rate of addition to liabilities (borrowing) and assets (lending) over the cycle appear to parallel cyclical changes in the rate of increase in income.

Other factors, such as increasing ability to offer competitively higher yields to depositors and shareholders as the demand for mortgage money increases, and possible shifts in savers' asset preferences as income rises, will also, of course, affect the volume of intermediaries' borrowing and lending. The point is that these institutions do not shift their funds between financial and nonfinancial uses, nor deliberately withdraw from financial markets as borrowers in response to cyclical changes in business conditions, nor shift their liquidity positions drastically over the cycle. In this sense, financial intermediaries make up the most stable sector in the flow of funds accounts. This is not to say that the existence of financial intermediaries does not help to shape the structure of sources and uses of funds, which of course it does, nor that the activities of such intermediaries may not have long run effects on the velocity of money. It is rather to say that large and abrupt shifts in the volume and direction of flows of funds over the business cycle do not appear to have originated with these sectors in the postwar years.

Group III sectors have shown the greatest cyclical variation during the postwar years in their rates of lending and borrowing, in types of assets ac-

quired, and in net financial investment. This group includes the consumer sector, non-financial corporations, and the banking sector. Behind the shifts in financial flows associated with these sectors lie changes in non-financial accounts and in public policy to which each sector reacts in a characteristic way, deliberately altering the extent and nature of its participation in financial markets. The major shifts in financial flows associated with the business cycle therefore appear to have originated with these sectors.

II. Group I Sectors

Response of Group I sectors to the cycle is not simple and direct. The extent and nature of their participation in money markets and their position at any one time as a net lender or borrower depends on many factors, some of which are connected only indirectly or not at all with changes in the rate of growth of money income, output, the level of interest rates or yield patterns.

The Federal Government Sector

Shifts in the federal government's position as a net contributor to or claimant on money market resources are both big and irregular. For most of the past three cycles the federal government has been a net borrower of funds, becoming a net supplier of funds to the economy only in the period of slow expansion in the first two cycles, when credit market obligations outstanding were reduced or added to in only small amounts so that government lending actually exceeded government borrowing in these periods.[4] Government lending net of borrowing (net financial investment) has varied from an annual average of $5.4 billion in the slow expansion period of the 1953-1957 cycle to an annual average rate of—$10.3 billion in the fast expansion of 1957-1960. The federal government was a net borrower of funds throughout the 1960-1962 period (Chart IA(1)).

Funds borrowed by the federal government in the money market can be measured by credit market instruments sold (Chart IA(2)). Consumer saving through federal retirement funds may add further small amounts to its financial liabilities. Government lending to other sectors can be measured by the financial assets it acquires, which are principally mortgages and other loans, plus demand deposits and currency. Credit market instruments purchased, principally mortgages and miscellaneous loans, customarily show a steady increase in rate of acquisition throughout the cycle (Chart IA(3)). Counter-cyclical policy would require that such purchases be at a miximum in recession. The perverse time pattern of purchases may be the result of a time lag in response to our relatively brief recessions between 1953 and 1962.

The behavior of the government's net financial position over these cycles is irregular. While mortgages bought and loans made by the federal sector show a lagged reaction to changing business conditions, and additions to government liabilities in the form of insurance and retirement funds reflect

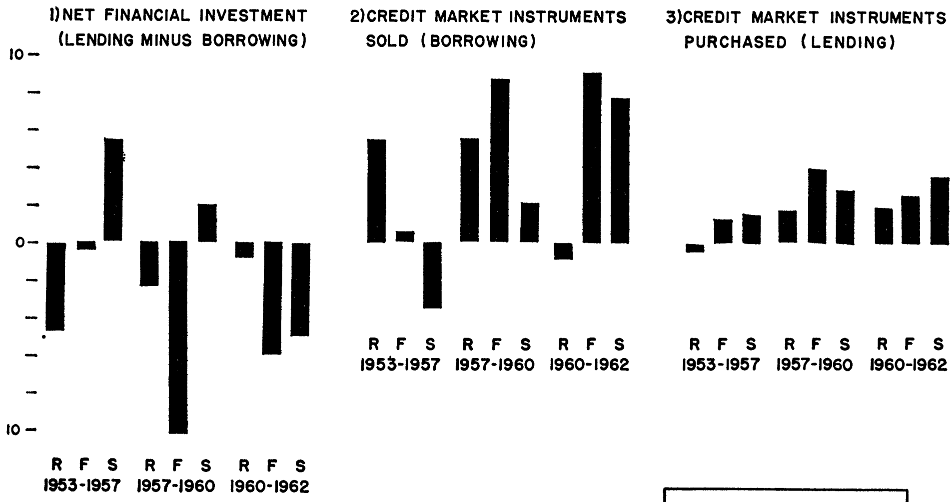
4. Federal government credit market instruments outstanding were reduced at an annual average rate of $3.2 billion in the slow expansion of 1953-1957. Credit market instruments outstanding increased at an annual average rate of $1.2 billion in the slow expansion of 1957-1960.

CHART I

FINANCIAL FLOWS OF FUNDS BY CYCLE PHASE

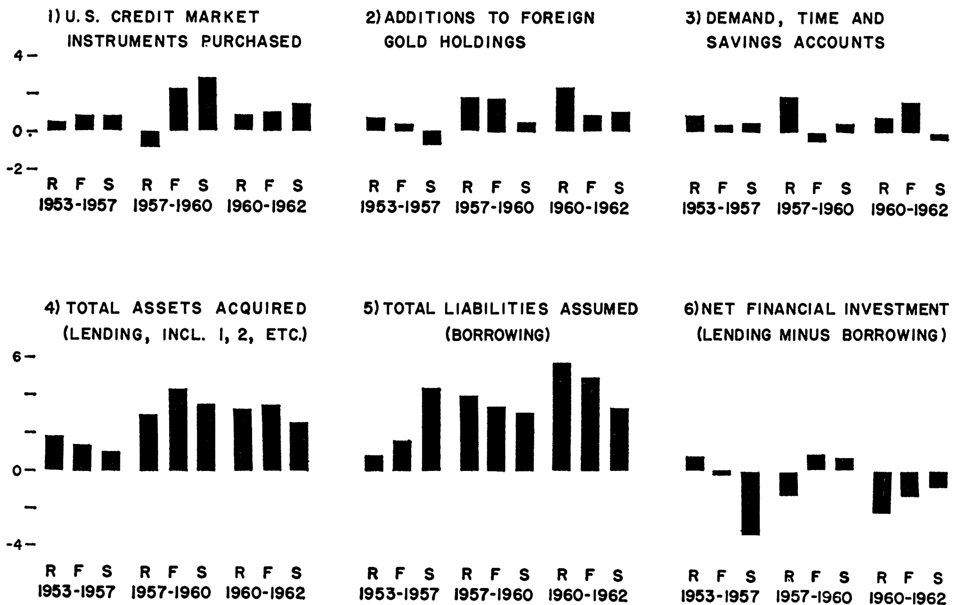
(AVERAGE ANNUAL RATES IN BILLIONS OF DOLLARS)

A. THE FEDERAL GOVERNMENT



R RECESSION
F FAST EXPANSION
S SLOW EXPANSION

B. REST OF THE WORLD



changes in national income, the amounts here are small. The volume of funds which the federal government must raise in the money market is tied on the one hand to the current budget, which at least in minor cycles is based primarily on commitments not associated directly with business conditions, and on tax yields, which of course do reflect rates of income change.

A severe recession prompting deliberate and substantial use of fiscal policy would, of course, cause at least a short term increase in borrowing. Non-cyclical changes in the level of federal expenditures, and the mildness of recessions and therefore decrease in tax revenue during the period covered, in part account for government participation in financial markets on what appears to be an erratic basis as far as the business cycle is concerned. Further, since deliberate counter-cyclical expenditures usually encounter legislative and administrative delays, rapid recoveries have tended to push the deficit effect of such spending into a recovery year. It should also be pointed out, of course, that the federal government does not follow the private pattern of shifting its resources between financial and non-financial uses or among financial assets in order to maximize yield, considerations which are important in influencing the nature and extent of money market participation by some other sectors.

Rest of the World Sector

As with the federal government, influences of the domestic business cycle can only be glimpsed in changes in foreign borrowing from and lending to American financial markets. A few of the components of the Rest of the World account show reasonably regular reactions to the domestic cycle. In all three cycles studied, purchase of United States credit market instruments by foreigners rises steadily from recession through expansion in apparent response to rising yields (Chart IB(1)). At the same time, gold purchases by foreigners (Chart IB(2)) and foreign holdings of commercial bank deposits, both demand and time and savings deposits (Chart IB(3)) decline as recovery gets under way and credit market instruments become more attractive to foreigners. The period 1960-1962 is an exception. Additions to deposits rose in the period of fast expansion but fell off sharply to almost zero in slow recovery. The total of all assets acquired by foreigners (total lending) shows an irregular decline from recession through fast and slow expansion (Chart IB(4)).

The total of funds raised in United States financial markets shows no consistent cyclical correlation, either in total or in components, apart from an apparent tendency of borrowing by foreigners to decline with recovery in two of the three cycles (Chart IB(5)). The rest of the world sector was a net borrower of funds in the United States in all periods except the recession of 1953-1957 and the two expansion phases of 1957-1960. Net lending in these periods never exceeded a $1 billion annual rate, while net borrowing in all other periods ranged up to a $3.3 billion annual rate (Chart IB(6)).

While rising United States interest rates and tighter credit markets undoubtedly do influence foreign borrowing and lending in our markets, they do so only as against movements in the cost and availability of funds in other countries and the state of their domestic economies. Further, the volume of

foreign dollar holdings kept in assets in the United States depends importantly on the state of the trade balance and preferences of foreigners for dollar assets as against gold and alternative uses. Therefore it is probably not to be expected that any clear cyclical correlation in either borrowing or lending would be revealed except by an analysis that takes account of other impinging variables.

III. Group II Sectors

Group II sectors are composed of, in the main, those financial intermediaries that channel consumer savings directly and immediately into a limited range of assets. They do not borrow in the market in the same sense as non-financial sectors seeking claims on real output, but rather assume liabilities in the form of redeemable shares, deposits or claims. The rise in their liabilities, and consequently in their assets, therefore reflect changes in personal income, and to a lesser degree changes in savers' asset preferences. The types of assets purchased by these institutions do, however, show some shifts in response to the cycle.

Insurance and Pension Funds

The net flow of funds into insurance and pension reserves has risen from an annual average rate of a little over $6 billion in the recession of 1953-1957 to $9 billion in 1962, in a regular pattern of steady increases during the expansion phases of the cycle and only very slight decline in the ensuing recession (except for a slight decline in the slow expansion period of 1957-1960). An average for the three cycles shows a sharp increase in additions to insurance and pension reserves between recession and fast expansion, a smaller increase of funds inflow in slow expansion, pacing the change in rate of rise of income. While purchase of assets with these funds increases in close relation with the increase in reserves, the excess of assets purchased over increase in liabilities (net financial investment) has varied in the $500 million to $2 billion range at annual rates by cycle stage (Chart IIA(2)).

Other Savings Institutions

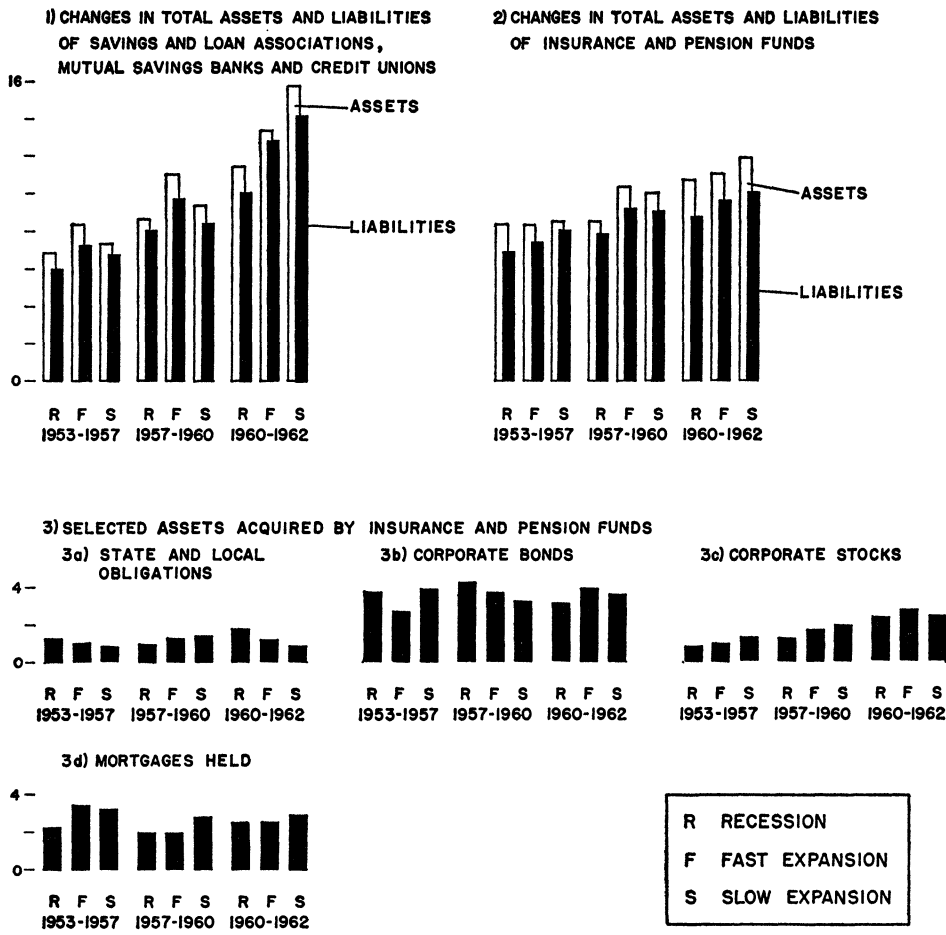
Similarly total additions to liabilities of other savings institutions, such as savings and loan associations, mutual savings banks, and credit unions, have risen sharply from a recession low of a $6 billion annual rate in 1953-1954 to a high annual rate of $14.1 billion in 1962. Additions to liabilities rise sharply from recession to fast expansion in each cycle, declining slightly in annual amount in the first two periods of slow expansion but rising again sharply in the fast expansion of 1960-1962. Asset acquisition follows liabilities closely, net investment fluctuating in a narrow annual rate range of $500 million to $1.5 billion (Chart IIA(1)).

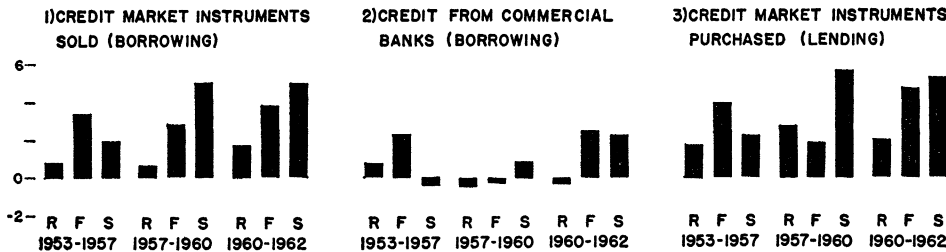
The proportion of mortgages to other credit market instruments remains high and quite stable for savings institutions as a group. Insurance and pension funds assets, however, show some consistent change in composition over the cycle. The rate of acquisition of state and local obligations declines slightly over two out of the three cycles (Chart IIA(3a)), and purchase of corporate bonds does not keep pace with growth in total assets (Chart IIA(3b)). On the

CHART II

FINANCIAL FLOWS OF FUNDS BY CYCLE PHASE

(AVERAGE ANNUAL RATES IN BILLIONS OF DOLLARS)





other hand, there is a clear rise in the rate of acquisition of corporate stocks (Chart IIA(3c)) and an increase in the rate of acquisition of mortgages (Chart IIA(3d)).[5]

As has been noted before, these intermediaries perform essentially a channelling operation, the rate of increase in funds available to them reflecting the rate of rise of income and shifts in savers' decisions as to spending and forms of asset holding. The substantial increase in liabilities in 1960-1962, of course, reflects the much more aggressive activities of these institutions, especially savings and loan companies, in attracting savers as the demand for mortgage funds in particular has allowed for higher returns. The historical purposes of these institutions—financing home building, provision of a low risk form of investment for the small saver, consumer lending—severely limit the range of assets over which they can shift in response to cyclical change in yield patterns, and the need for maximum earnings within these limits rather than liquidity, leads to a close and stable relationship between sources and uses of funds.

Other Non-bank Financial Institutions

Miscellaneous non-bank finance, which includes finance companies, agencies of foreign banks, banks in possessions, investment companies, security dealers and brokers, is, of course, a mixed bag. Funds raised through issue of credit market instruments (borrowing), a large part of which is finance company paper, rises sharply from recession through fast and slow expansion periods (Chart IIB(1)), and credit obtained from commercial banks rises in fast expansion to irregularly lower in slow expansion (Chart IIB(2)). Security credit extended (lending) uniformly rises in fast expansion and becomes very small or negative in slow expansion, reflecting the weakening of stock price rise at the upper end of the cycle. This decrease in security credit extended tends to be compensated for, however, by an increase in credit market instruments purchased (Chart IIB(3)), so that the sector's net lending is quite stable at an annual rate of $300 to $600 million (in 1962 a negative $300 million). The amounts here are not large, total lending and borrowing ranging from annual rates of $2 to $6 billion, and the correlation with changes in the general level of business activity appears to be close.

If the figures for insurance and pension funds, savings institutions and other non-bank finance are combined, both additions to assets purchased (lending by these sectors) and liabilities assumed (borrowing by these sectors) rise sharply from recession through fast expansion and again somewhat less sharply through slow expansion (with the exception of a decrease in annual rate in the slow expansion of 1953-1957). Net lending is positive and quite stable in an annual rate range of $1.5 to $3 billion.

IV. Group III Sectors

The consumer sector, nonfinancial corporations, and the banking sector are similar in that their response to cyclical changes in money income, output,

5. Changes in total holdings of federal obligations by non-bank financial institutions did not exceed an $800 million annual rate in 1961-1962 and were therefore excluded from the tabulation.

and the level and structure of interest rates involves large and often abrupt changes in position as net borrowers or lenders.

Both consumers and nonfinancial corporations borrow in order to purchase real assets and receive earned money income which can be used for purchase of either real or financial assets. The interrelation of financial and nonfinancial variables are most evident here. Further, these sectors are not bound to any limited range of financial assets and may move freely among types, seeking satisfactory yield-liquidity positions. Corporate use of funds for financial investment, for instance, is becoming steadily more varied. The banking sector, whose asset and liability volume is influenced by monetary policy, could, of course, be expected to show definite cyclical response.

Nonfinancial Corporations

Funds were borrowed by nonfinancial corporations in the three recessions studied at annual rates of $4, $8 and $9.6 billion. Fast expansion produced a sharp increase in corporate borrowing to an annual rate of $15 to $16 billion. Borrowing in slow expansion either increased very slightly (1953-1957) or actually decreased to a $13 to $14 billion annual rate (Chart IIIA(2)).

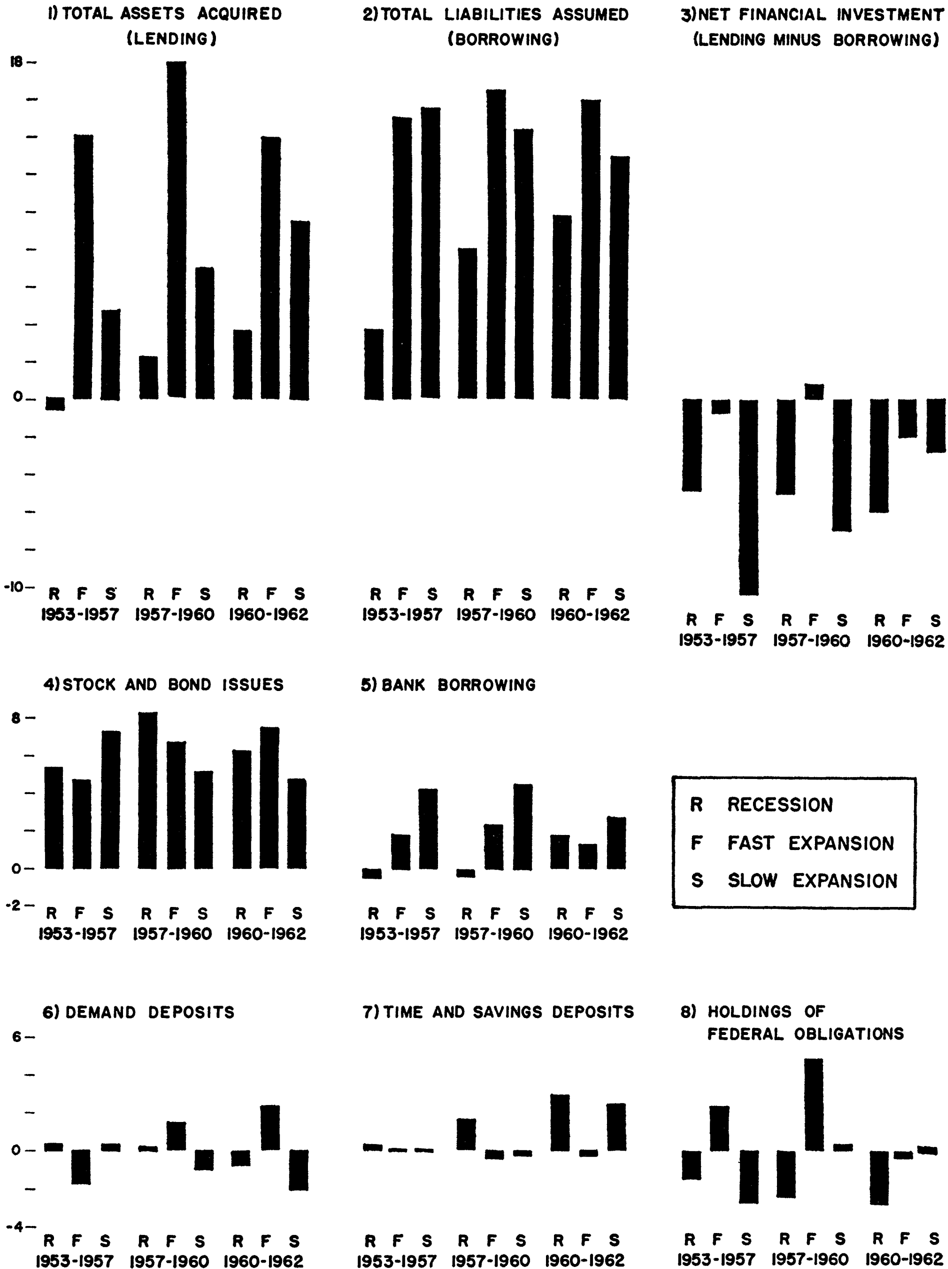
Corporate lending has typically been negative or low during recession ($-0.7, $2.6 and $3.8 billion annual rates). However, the period of rapid expansion produced, in all three cycles, a heavy flow of corporate lending at annual rates of $14 to $18 billion dollars, matching or almost matching corporations' increased borrowings, while the period of slow expansion was characterized by a sharp drop in the rate of lending (to $4.7, $7 and $9.6 billion annual rates) as against the much more moderate decline or slight increase in rate of borrowing (Chart IIIA(1)).

In total, corporate borrowing of funds in the market usually exceeds lending of funds to other sectors. Changes in the rate of lending are, however, much more volatile than changes in the rate of corporate borrowing over the cycle. The result is a consistent pattern of changing net borrowing, averaging out for the three cycles at a $5.3 billion annual rate in recession, a $.6 billion annual rate in rapid expansion and a $7.2 billion annual rate in slow expansion (Chart IIIA(3)).

Borrowing through stock and bond issue does not appear to be cyclically oriented (Chart IIIA(4)). The volume of funds borrowed from all sources is typically pulled below the level of stock and bond issues during recession by negative bank loans (1960-1962 positive but low) and negative figures for accounts payable (1960-1962 again positive but low). Similarly the increase in total borrowing during rapid expansion is mainly due to sharp increases in bank borrowing and trade credit. It is particularly worth noting that while total corporate borrowing declines somewhat in the period of slow expansion, the rate of corporate borrowing from banks rises sharply to 183 per cent in 1953-1957, 194 per cent in 1957-1960 and 134 per cent in 1960-1962 of the average rate of bank borrowing for each cycle as a whole (Chart IIIA(5)).

Until recently the chief uses of corporate funds available for financial investment have been holdings of demand deposits or of federal obligations. Annual

CHART III



averages by cycle phase indicate small to negative flows into demand deposits during recession, substantial additions during the period of rapid recovery, and a return to drawing down of balances during the later stages of expansion (Chart IIIA(6)). Holdings of federal obligations show essentially the same pattern of disinvestment in recession, substantial investment during rapid expansion and disinvestment during slow expansion (Chart IIIA(8)).

The figures on time and savings deposit holdings show increased resort to this third use, however, during the 1950's and particularly in 1960-1962 (Chart IIIA(7)). It has been suggested that the weakness of the 1960-1961 expansion produced a leveling off of real investment outlays and thereby increased liquidity.[6] Holdings of government obligations were maintained in the period of slow expansion, and time and savings deposits, which had shown increasing attractiveness in both the 1957-1960 and 1960-1962 recession periods as an alternative to demand deposits, were built back up sharply.

The figures suggest the following as a possible sequence of events. Recession produces financial stringency due to falling profits and a build-up of inventories. The period of rapid expansion releases cash from these inventories and produces rising gross savings.[7] On the other hand, existence of idle facilities may make corporate cash needs somewhat less in the early than in the later stages of recovery. The rise in borrowing in this early period of recovery is mainly associated with a growing volume of net trade credit and only secondarily with increasing bank borrowing. The corporation becomes a substantial lender through increased holdings of deposits and federal obligations.

As recovery moves into its phase of slower expansion, however, inventory build-up and a slowing down in the rate of rise of profits, plus an increased need for funds for plant expansion, sharply reduces the volume of funds available for financial investment. Deposits are pulled down and federal obligations sold off (or not added to) in order to provide for capital needs from internal sources. The rate of total borrowing declines moderately as expansion of trade credit slows, but the rate of bank borrowing rises sharply to supplement internal financing.

Consumer and Non-Profit Sector

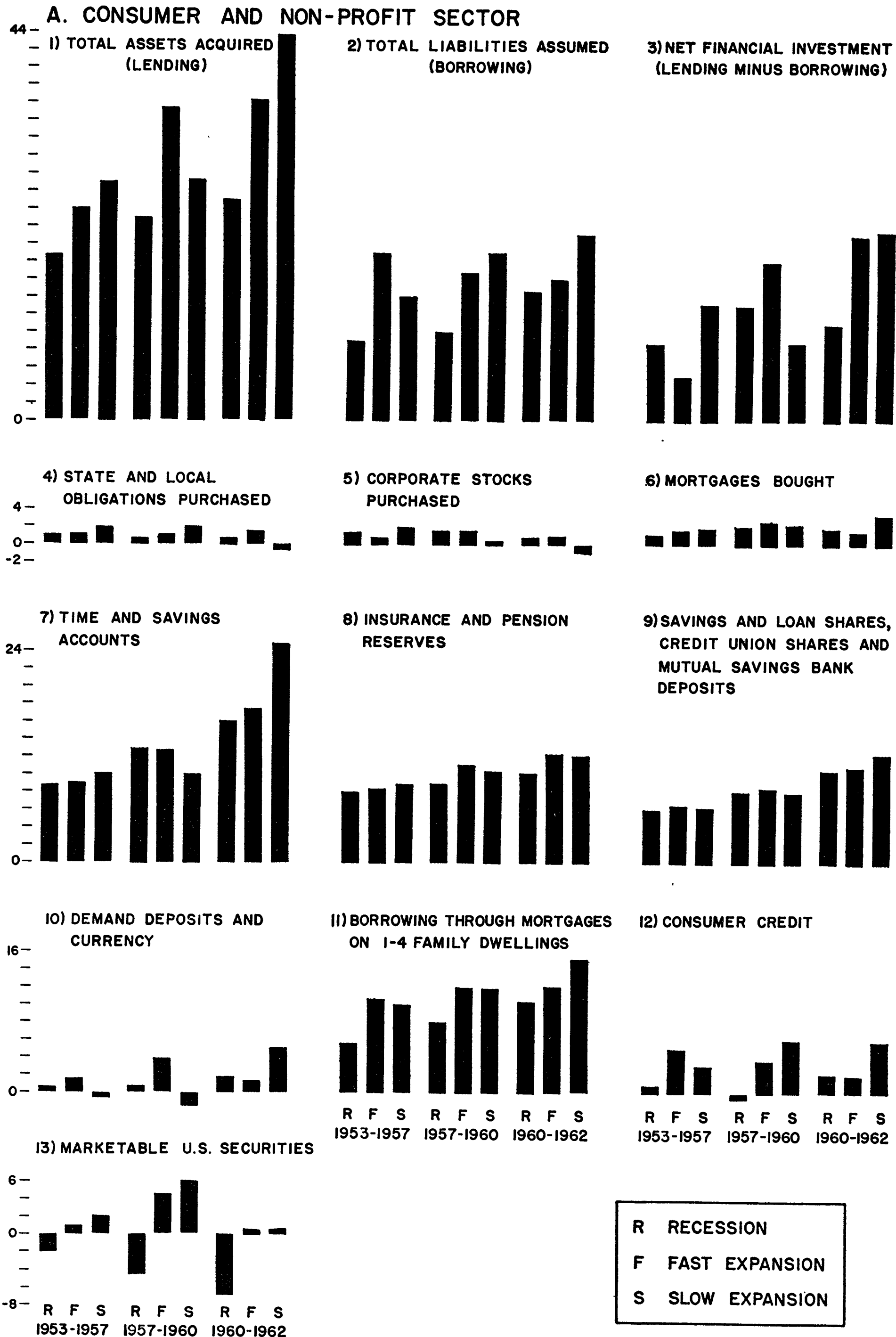
The consumer and non-profit sector is a large net lender in all cycle phases. Lending increases substantially from recession through fast expansion, a three-cycle average showing an increase from an annual recession rate of over $22 billion to a fast expansion rate of over $32 billion (Chart IVA(1)). Borrowing (liabilities assumed) also rises, but by smaller amounts (Chart IVA(2)), so that the sector's net lending increases from an $11 billion annual rate in recession to a $14.8 billion annual rate in fast expansion, if the three cycles are averaged (Chart IVA(3)). Both assets and liabilities show a further small increase in slow expansion.

The data supports the contention that the consumer is a residual and high

6. See Ernest Bloch, "Short Cycles in Corporate Demand for Government Securities and Cash," *The American Economic Review*, December 1963, Vol. LIII, No. 5, p. 1074.

7. See *Flow of Funds Accounts, 1945-1962*, Board of Governors of the Federal Reserve System, Washington, D.C., pp. 115-120, for figures on corporate gross savings during these three cycles.

CHART IV FINANCIAL FLOWS OF FUNDS BY CYCLE PHASE
(AVERAGE ANNUAL RATES IN BILLIONS OF DOLLARS)



cost supplier of funds, and that rising interest rates stimulate net consumer lending and thus elicit additional flows of funds from consumers to financial markets. Maximum net lending by the consumer sector in the 1953-1957 cycle occurred during slow expansion. Long term interest rates declined through the recession phase of this cycle and remained low through fast expansion. In the subsequent period of slow expansion, interest rates moved up sharply, new consumer borrowing decreased, and financial assets continued to be acquired at about the fast expansion rate.

In 1957-1960 maximum net lending occurred in fast expansion through a moderate rise in borrowing but a large increase in the rate of financial asset purchase. Virtually all of the rise in long-term interest rates over this cycle occurred in the fast expansion period. Interest rates actually declined during most of slow expansion, and net financial investment by consumers fell below recession levels. In 1960-1962 interest rates rose moderately during fast expansion and remained stable to slightly down in slow expansion. Consumer net lending rose in fast expansion through a small increase in consumer borrowing but a sharp rise in financial asset holdings. Net investment remained at virtually the same level through slow expansion, consumer liabilities and assets rising apace.

This same close correlation between net lending and interest rates is not evident, incidentally, in behavior of the rest of the world sector, which has, along with the consumer sector, often been considered the other residual high cost supplier of funds. This again illustrates the fact that the influences on foreign lending and borrowing are more numerous and complex, and the relation to domestic interest rates more tenuous, than is true of consumer and non-profit organizations' borrowing and lending decisions.

Rising resort to borrowing through mortgages (Chart IVA(11)) and consumer credit (Chart IVA(12)) is evident in the expansionary phases of both the 1957-1960 and 1960-1962 cycles. During the 1953-1957 cycle mortgage and consumer credit borrowing rose sharply in fast expansion but decreased in slow expansion when interest rates rose sharply. The only other component of consumer borrowing, net security credit, shows a rise in fast expansion and negative figures in slow expansion, matching the perverse behavior of stock purchases.

Total asset figures obscure the most interesting aspect of consumer lending —that is, the shifts in the pattern of asset holdings which appear to occur in response to cyclical changes in the economy. Consumer-held assets are here divided into three groups: (1) saving media—insurance and pension reserves, savings and loan shares, credit union shares and mutual savings banks deposits; (2) credit market instruments—federal, state and local obligations, corporate stocks and bonds, and mortgages; and (3) liquid assets—currency, demand and commercial bank time and savings deposits.

(1) Savings shares, mutual savings bank deposits and insurance and pension reserves channel a substantial part of consumers' savings into financial markets (an average of $18 to 20 billion per year for the three cycles averaged), the amounts rising through fast expansion but tending in all but the

1960-1962 cycle to decline slightly in the period of slow expansion (Charts IVA(8) and (9)). Savings and loan and credit union shares alone show a consistent tendency to rise by further but more modest amounts in slow expansion.

While the increase from recession through fast expansion in purchase of savings shares appears roughly to pace the rise in income, the very slight increase in total assets of this type acquired by consumers in slow expansion and the tendency to absolute decline in the rate of investment in insurance and pension reserves and mutual savings bank deposits indicates some shift to assets made more attractive by rising rates of return. Savings and loan associations appear to have been reasonably successful in holding their own through prompt adjustment to rising market rates of interest. The figures do, therefore, indicate some degree of interest sensitivity, particularly given the fact that the more decided upward adjustment of rates paid on mutual savings bank deposits, as well as on savings and loan shares, in the 1960-1962 cycle reversed the former tendency of the rate of flow of funds into this use to decline at the upper end of the cycle.

It is also possible that the income elasticity of demand for savings shares and insurance has been relatively low. Although rising personal income may bring in newer savers, a substantial part of the increased savings of those already holding savings shares, mutual savings bank deposits and insurance appears to go into purchase of credit market instruments and into more liquid savings deposits in commercial banks.

(2) Investment by consumers in credit market instruments shows a more varied pattern. Purchase of mortgages (Chart IVA(6)) and state and local obligations (Chart IVA(4)) both follow the pattern of total asset purchases, rising to a peak in the period of highest interest rates. Purchase of state and local obligations during the slow expansion of 1960-1962 is an exception. The rise in legal ceiling rates on time deposits occasioned heavy bank purchases of state and local obligations, depressing their yield and causing a sell-off by consumers. The increasing purchase of mortgages reflects, of course, the adjustment of mortgage rates to rising market rates of interest. The increasing rate of purchase of state and local obligations is probably in part attributable to the tendency of the volume of such issues to rise with recovery and thus the necessity for paying attractive rates to place them, and perhaps also to the increasing attractiveness of the tax deductible feature as income rises.

The pattern of stock purchases is not as consistent. New stock purchases were just maintained from recession through fast expansion in two cycle, and dropped in one (Chart IVA(5)). At the upper end of the cycle, additions were small or negative in two cycles but up slightly in 1953-1957. In general, then, stock purchases were maintained during fast expansion but down slightly in slow expansion.

Consumer holdings of federal obligations follow the cyclical pattern of rising holdings most strongly (Chart IVA(13)). Federal obligations are uniformly sold off heavily in recession (at annual rates of $2, $4.4 and $7 billion in the three cycles). Substantial net additions to holdings are purchased in

fast expansion and even larger additions in slow expansion, with some evidence of a shift from savings bonds to marketable debt. The sell-off in the 1960-1962 recession was particularly heavy, but additions were relatively small and steady through fast expansion and slow expansion for both marketable debt and savings bonds.

The heavy sell-off of government obligations in recession reflects, of course, lower interest rates and consequent rising bond prices. There is in addition the possible cheapening of stocks as an alternative and possible cash needs, depending upon the severity of the recession. All else being equal, largest additions to holdings would be expected at the upper end of the cycle in response to rising interest rates and falling bond prices. The relatively small additions to government debt obligations held by consumers in the expansion of 1960-1962 reflects payment of higher returns on savings shares and deposits as against slightly declining yields on government bonds.

(3) In both 1953-1957 and 1957-1960 additions to demand deposits were negligible in recession but increased in fast expansion to annual rates of $1.3 and $3.5 billion. Additions during slow expansion were negative; that is, demand deposits were reduced absolutely. In contrast, the maximum rate of flow into demand deposits in 1960-1962 occurred in slow expansion (Chart IVA(10)).

The flow of funds into time and commercial bank savings deposits, on the other hand, was substantial throughout all cycle phases, increasing with recovery in 1953-1957 and 1960-1962, but decreasing slightly in the slow expansion of 1957-1960 (Chart IVA(7)). The increase in commercial bank time and savings deposits was especially large in the slow expansion of 1960-1962, annual additions rising from $17.6 billion in fast expansion to $24.7 billion in slow expansion. Since both additions to demand and to time and savings deposits were positive and large in 1960-1962, while in the 1957-1960 cycle demand deposits were actually drawn down and the rate of flow of funds into time and savings accounts dropped, there is clear contrast in the extent of monetary ease in the two cycles.

The build-up of cash and demand deposits in fast expansion and of commercial bank interest bearing deposits in both fast and slow expansion reflect, of course, rising income levels. The decrease in time and saving deposit additions in the slow expansion of 1957-1960 can be traced to the existence of a relatively low interest rate ceiling, while lifting of that ceiling produced a large increase in commercial bank time and savings deposits in early 1962. The absolute decrease in cash and demand deposit holdings in the slow expansion of the first two cycles suggest some sensitivity of such deposits to interest rates where restrictive monetary policy does not allow simultaneous accumulation of liquid and less liquid assets. The fact that the consumer was able to accumulate deposits, both demand and time and savings, and increase holdings of other types of earning assets as well in the slow expansion of 1960-1962, reflects the much more liberal credit policies of the monetary authorities in recent years.

If it can be assumed that consumer assets held in the form of pension and

insurance reserves, savings and loan and credit union shares, and mutual savings bank deposits are looked upon by consumers as forms of long term savings; but that credit market instruments, on the one hand, and commercial bank deposits, on the other, are seen as alternative forms of investment, sensitive to cyclical changes in yields, then a comparison of the latter two should show cyclical effects.

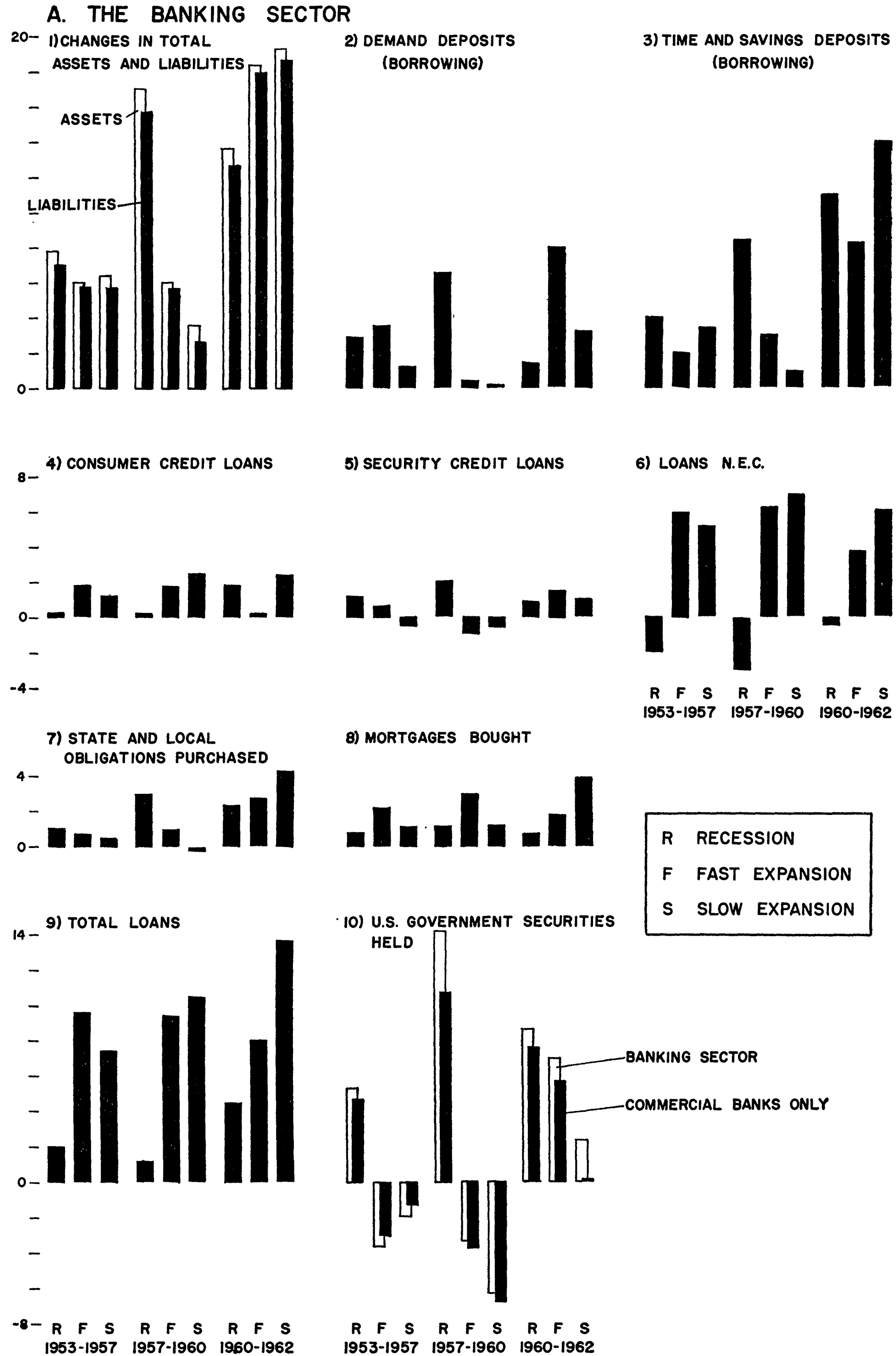
In both 1953-1957 and 1957-1960 credit market instruments purchased increased as a per cent of total cash, commercial bank deposits and credit market instruments acquired by consumers from 9 per cent and a negative figure in recession to 33 per cent and 36 per cent in fast expansion, and again to 43 per cent and 50 per cent in slow expansion. In 1960-1962 the figure is negative for recession, 21 per cent for fast expansion, but only 10 per cent for slow expansion. This low figure of 10 per cent is undoubtedly the result of several factors: the raising of the interest ceiling on time and savings deposits, the aggressive policies and high returns offered by savings institutions, both of which resulted in a yield disadvantage to federal obligations, and the uncharacteristic sell-off of state and local obligations as the commercial banks bought heavily. Total credit market instruments purchased was further reduced by a decrease in stock holdings after the market decline of 1962.

Barring distorting factors, then, the consumer and non-profit sector appears to put a rising per cent of funds into less liquid credit market instruments (as opposed to more liquid commercial bank deposits) as recovery proceeds, shifting back to a more liquid position in recession. The largest shift within total credit market instruments over the cycle is in federal obligations, holdings of which swing widely through sell-off in recession and rapid acquisition in recovery except where unusual shifts in the interest rate structure divert funds into other types of earning assets. Of the components of credit market instruments, only stock purchases tend to slow in the later stages of expansion.

Banking Sector

The banking sector is defined to include commercial banks and the central bank. This sector is, of course, unique in that its rate of acquisition of assets and consequent creation of liabilities reflects in large measure current monetary policy. In this respect the first two cycles are very similar. In both 1953-1957 and 1957-1960 the volume of commercial bank assets purchased and liabilities created were at a maximum in the period of recession (Chart VA(1)). The rate of asset acquisition dropped in the 1953-1957 cycle from an $8 billion annual rate in recession to under $6 billion annually in fast expansion, in 1957-1960 from an annual rate of almost $16 billion in recession to an annual rate of under $6 billion in fast expansion. Asset acquisition in slow expansion remained at approximately the fast expansion level in 1953-1957, dropped further to a $2.6 billion annual rate in 1957-1960. The 1960-1962 pattern is different, with asset acquisition rising steadily in volume from a $12.7 billion annual rate in recession to $17.9 and $18.8 billion annual rates in recovery, a reflection of continuing monetary ease in contrast to the tighter credit policies at the upper end of the first two cycles.

CHART V FINANCIAL FLOWS OF FUNDS BY CYCLE PHASE
(AVERAGE ANNUAL RATES IN BILLIONS OF DOLLARS)



The rate of expansion of commercial bank demand deposits increases sharply in fast expansion, falling back in slow expansion to below recession levels in the first two cycles and only slightly above recession level in 1960-1962 (Chart VA(2)). The rate of flow of funds into time and savings deposits moves exactly counter to demand deposits, decreasing in fast expansion and rising again in slow expansion (Chart VA(3)). Time and savings deposit figures for the 1957-1960 fast expansion are low undoubtedly because of artificially low interest rate ceilings, those for fast expansion in 1960-1962 expecially high because of the rise in that legal ceiling. When total deposit liabilities are added together for the banking sector, the rate of increase in deposit liabilities drops from recession through fast expansion and holds or decreases further in slow expansion. The 1960-1962 figures differ in showing a steady rise in total deposits through the cycle because of only moderate decrease in time and savings accounts in fast expansion and the very large increase in those accounts in slow expansion.

Within the declining total of new assets purchased by the banking sector during expansion, total new loans rise rapidly through fast and slow expansion periods (Chart VA(9)). Consumer credit extended shows almost no additions in recession, but rises sharply during expansion in both the 1953-1957 and 1957-1960 cycles (Chart VA(4)). The 1960-1962 consumer credit figure for recession, however, is substantial, dropping slightly in fast expansion and then rising in slow expansion. Other commercial bank loans, excluding security credit and commercial paper purchased, shows uniformly negative figures for recession, rising to positive amounts of $5 to $7 billion annually in fast and slow expansion (Chart VA(6)). Only security credit, which follows the perverse pattern of stock purchases, and purchase of open market paper, decline to low or negative levels as expansion proceeds (Chart VA(5)).

Purchase of mortgages tends to be at a maximum in fast expansion, dropping back to recession levels in slow expansion as reserve positions tighten. Again 1960-1962 differed when mortgage purchases rose still further in fast expansion (Chart VA(8)).

The decline in total assets purchased, in the face of rise in selective types of loans, is due to a large scale counter movement out of federal obligations and, to a lesser extent, out of state and local obligations. Holdings of federal obligations by commercial banks and the central bank were expanded by large amounts in recession at annual rates of $5, $13.8 and $8.6 billion in the three cycles respectively (Chart VA(10)). Fast expansion produced in the first two cycles a sell-off of governments in the annual amount of $3 to $4 billion, while slow expansion brought further disinvestment at an annual rate of $2 billion in 1953-1957 and over $6 billion in 1957-1960. Purchases in the fast expansion of 1960-1962 were positive but down from recession level, and in slow expansion a little over $2 billion per year by the central bank but almost zero for commercial banks. State and local obligation purchases also declined from recession levels in the first two cycles to a near zero level, but increased steadily over the 1960-1962 cycle when the large increase in time and savings deposits induced bank purchases (Chart VA(7)).

The banking system is then most active in acquiring assets and making funds available during periods of monetary ease. Tightening of reserve positions sharply reduces their rate of total asset acquisition in recovery, although sell-off of government obligations allows a continuing rise in selective loans. The period 1960-1962 is in clear contrast to the previous two cycles in that a continuing policy of ease allowed asset acquisition at a rising rate.

V. Summary and Conclusions

Substantial shifts in the volume and direction of flow of funds among sectors have occurred over the past three cycles and are directly related to cyclical changes in income, output, capital investment, and to changes in the level and structure of interest rates.

The savings media sector (insurance and pension funds, credit unions, mutual savings banks and savings and loan associations) shows greatest stability in financial markets. Changes in the volume of funds passing through this sector closely parallel changes in income, but may also, of course, stem from change in the yield structure and in consumer asset preferences. The range of assets purchased by these institutions is limited and their liquidity preference low. Consumer saving through non-bank financial intermediaries is, on the whole, long term and probably therefore not highly sensitive to changes in yield patterns. Large and abrupt changes in the volume of funds channeled, or major shifts in placement of funds, have therefore not occurred in the relatively mild postwar cycles.

The consumer, nonfinancial corporation, and banking sectors, on the other hand, each show a unique and consistent cyclical pattern in their net lending and in the sectors to which they channel funds. The consumer and non-profit sector is a consistent net supplier of funds to financial markets, and becomes increasingly active as both lender and borrower as the economy moves out of recession and into fast expansion. This sector's net lending has been greatest in periods of highest interest rates. Its rate of accumulation of liquid assets declines with recovery, while the rate of purchase of credit market instruments (excluding corporate stocks in slow expansion) rises sharply. The ensuing recession reduces the rate of accumulation of income earning assets sharply, government bonds in particular being sold off heavily as the sector moves back to a more liquid position.

Nonfinancial corporations, in contrast, are consistently net borrowers of funds but in widely varying degree over the cycle. Their rate of borrowing rises by relatively small amounts in the early stages of expansion but their lending to other sectors increases sharply, reducing their net borrowing to a low or negative level. Previously loaned funds are then withdrawn from the market in the later stages of expansion to provide part of their own capital needs, and bank borrowing in particular increases.

The banking sector has accumulated assets at a maximum rate in recession through heavy purchase of government bonds, the rate of asset accumulation and therefore liability creation decreasing as excess reserves are absorbed and reserve positions tighten during recovery. Government obligations are then

sold off heavily, principally to the consumer sector, to finance an increasing volume of loans.

Each of these sectors, then, fits into one cycle phase as a maximum contributor of funds. Given the lower corporate and consumer demand for funds in recession, compared to the previous cycle peak, and the ability of the banking sector to acquire assets at a maximum rate, the price of funds falls. Government security holdings are shifted from consumers and corporations to the banking sector; consumer and corporate liquid assets (demand deposits and commercial bank time and savings accounts) rise.

Recovery in its early and rapid stages provides the corporate sector with increasing funds from current earnings and inventory liquidation. These funds are channeled in part into financial markets, supplementing consumers' and savings institutions' contributions, which rise with money income. The decreasing rate of commercial bank asset accumulation is thus compensated for in some degree. As the economy moves into the period of slower expansion, however, corporate demand for funds in particular rises, since firms must now add to productive capacity in order to expand output. If bank reserve positions are tightened, the banking system will absorb liquidity by selling government securities in an attempt to meet loan demand. The corporate sector borrows from banks and sells off its holdings of government securities to provide for its own needs. The bulk of the bonds sold by both the banking and corporate sectors are placed with consumers and non-profit institutions.

The resulting decrease in the price of government bonds (and rise in bond yields), with its concomitant effects on the interest rate structure, is then a function of several variables: the extent to which the monetary authorities force the banking system into sale of bonds through restrictive monetary policy, the strength of demand for funds in general and bank loans in particular, and the willingness of the consumer sector to shift to a less liquid position. The period 1960-1962 stands in clear contrast to the earlier two cycles in that an unusual degree of monetary ease allowed the banking sector to meet the demand for loans at relatively stable interest rates without any substantial transfer of bonds to the public. Corporate liquidity remained high and corporate holdings of government obligations steadied as a result of relative ease in borrowing and the weakness of the investment boom in 1961-1962. The per cent of consumer assets held in liquid form as opposed to other earning assets also remained unusually high in slow expansion.

The preceding facts point up several significant aspects of financial flows. First, the non-bank sectors showing the greatest consistent variation in lending and borrowing activities over the cycle are the consumer and corporate sectors precisely because these are the sectors which choose between purchase of financial and non-financial assets. Further, they are the sectors which experience fluctuating income as a direct result of cyclical changes in the level of output and employment. They are not as directly influenced by monetary and fiscal policy as are the federal government and banking sectors, nor are they limited by law or function to a given range of assets as are financial institutions in general.

Second, the corporate sector changes its rate of lending and borrowing and its net position in financial markets more abruptly and by larger amounts than does the consumer sector. The greater degree of instability in corporate behavior results from two circumstances. Corporate earnings show greater fluctuation over the cycle than does consumer income. More important, the relation of consumer purchases of goods to disposable income is relatively stable, while corporate investment in inventories and productive facilities fluctuates widely over the cycle and bears only a partial and probably lagged relation to changes in corporate earnings.

Exclusive concentration on changes in the volume of corporate borrowing over the cycle tends to understate the impact of corporate financial activity on interest rates. The major cyclical shifts in the corporate sector's net position as borrower or lender stem principally from abrupt changes in its rate of lending to other sectors. The very rapid expansion of corporate lending relative to borrowing during rapid expansion reduces the corporate drain on financial resources to near zero. Slow expansion produces a shift of this sector to the position of a heavy net borrower through a radical decrease in corporate lending as against minor changes in the rate of borrowing. This increased corporate demand for funds occurs in the face of declining rates of total bank lending and at best only moderate increases in consumer net lending. In the absence of deliberate offsetting action by the monetary authorities, then, pressure on interest rates is exerted by the corporate sector through both the supply and demand sides of the market. Shifts in corporate financial flows are then of particular significance for the timing of monetary policy.

Third, the federal government and the rest of the world sectors behave erratically in minor recessions. However, a major recession could bring them in as very large borrower-lenders and make them key factors in interest rate and income developments. Thus, while they have not been a consistent source of pressures on financial markets to any great degree in the past three recessions, they are capable of changes in position in future cycles that would make them significant factors in cost and availability of credit.

Finally, use of the consumer and rest of the world sectors as sources of an interest-elastic residual in interest rate forecasting appears more accurate for the consumer sector than for the rest of the world. Domestic interest rate changes seem to have a major influence on the rate of consumer lending and borrowing. The same is true of the rest of the world only assuming all else remains constant, which of course it does not.