FEDERAL RESERVE BANK OF RICHMOND

MONTHLY REVIEW

Structure of the Residential Mortgage Market

Government Finance in the Nation's Capital

Business Cycles, Growth Cycles, and The Current Expansion

Volume 58
Number 9

SEPTEMBER 1972

Structure of the RESIDENTIAL MORTGAGE MARKET

Introduction Widespread home ownership has long been regarded in this country as a source of social and economic stability as well as an indicator of a relatively high standard of living. Accordingly, the Federal government has made a substantial effort to encourage the building of privately owned homes by the nation's populace. Mortgage financing is typically used in the purchase of a home because the requisite cash outlay would be far beyond the means of most buyers. To make home ownership widely available, the Federal government has tried both to increase and to stabilize the flow of funds into mortgages and to ease the terms under which mortgages are available.

During the Great Depression of the 1930's, the Federal government undertook a number of actions to rebuild the struggling mortgage market. These measures led to the creation of various government operated agencies and to the encouragement of private financial institutions specializing in residential mortgages. On various occasions since the 1930's, particularly when the availability of credit has been limited and interest rates have been high, further government participation in the mortgage market has occurred. By mid-1972, a highly complex array of private, governmental, and semigovernmental institutions comprised the residential mortgage market. This article clarifies the structure of the mortgage market by describing the activities of the institutions channeling savings into mortgages.

The Flow of Funds To shed some light on the structure of the residential mortgage market, a flow diagram, depicting the various institutional channels a dollar of savings might travel on its way into a mortgage loan, has been developed. The supply of savings on the left side of the diagram represents only that portion of total savings (income minus consumption) that has been attracted into the residential mortgage market instead of the market for numerous other forms of financial and real investments also competing for the total supply of savings. The solid arrows indicate the flow of savings into mortgage loans rather than the movement of mortgage securities from originators of loans to possible secondary holders. Dashed arrows refer to insured or guaranteed arrangements in conjunction with flows of funds.

The institutions listed in the first column issue primary securities to savers and then use the funds to purchase mortgages originated by other lenders. Three of these agencies, the Federal Home Loan Mortgage Corporation (FHLMC or Freddie Mac), the Government National Mortgage Association (GNMA or Ginnie Mae), and the Federal National Mortgage Association (FNMA or Fannie Mae), are at least partially government sponsored. The fourth agency, the MGIC Mortgage Corporation (MGIC or Maggie Mae), is a completely private purchaser of mortgages in the secondary market.

The next column represents the depository and contractual savings institutions that engage in numerous mortgage lending activities. The depository institutions originate both conventional and government guaranteed mortgage loans and buy and sell mortgages in the secondary market. Life insurance companies, however, restrict their portfolio of mortgages to those acquired in the secondary market.

Mortgage companies do not hold a permanent portfolio of mortgage loans but instead resell nearly all of the mortgages they originate. Thus, in the diagram they are directly linked to mortgage borrowers but only indirectly linked to savers.

The most conspicuous form of Federal government participation in housing finance is shown at the bottom of the diagram. Using funds directly acquired from the U. S. Treasury, the Department of Housing and Urban Development—via the Federal Housing Administration and GNMA—subsidizes certain types of residential housing. Through a variety of projects, HUD and the FHA have combined to further slum clearance and make home ownership available to the urban poor.

The Depository Institutions Although the three types of depository institutions shown in the diagram are privately owned and operated, they are subject to certain Federal and state regulations. Savings and loan associations, for example, are restricted in that they must invest almost exclusively in mortgages. To enhance their ability to compete with commercial banks for savings deposits, savings and loan associations are allowed to pay a higher interest rate than banks on such deposits. Partially as a result of this regulation, total savings deposits at savings and loan associations are currently about 85% as large as

total savings deposits at commercial banks, even though there are less than half as many savings and loan associations. Fulfilling the role assigned them, savings and loan associations have regularly invested about 95% of their deposits in residential mortgages. Of the more than $160 billion in residential mortgage loans held by savings and loan associations at the end of 1971 (see Table I), nearly 88% were conventional loans. The remainder were either guaranteed by the Veterans Administration or insured by the Federal Housing Administration. A small number of these government-backed mortgages held by savings and loan associations were acquired through mortgage companies that had originated the loans. Each of these relationships is indicated by the appropriate arrows in the diagram.

Mutual savings banks, most of which are located in Northeastern states, also engage heavily in residential mortgage lending. They are not, however, as restricted in their investment policies as are savings and loan associations, even though they have been given the same interest rate differential. Thus, only about 70% of their savings deposits have been invested in mortgages in recent years. Also, more than half of their mortgage portfolio consists of FHA and VA backed loans, reflecting the fairly large volume of mortgages purchased from mortgage companies. In recent years, nearly one-third of all residential mortgages held by mutual savings banks have been originated by mortgage companies.

Commercial banks have not traditionally been as active in the housing market as have nonbank thrift

Table I

RESIDENTIAL MORTGAGE LOANS

($ billions)

	December 1970		December 1971	
	Outstanding	Percent	Outstanding	Percent
Total	$338.2	100.0	$374.7	100.0
Savings and Loan Associations	138.8	41.0	159.7	42.6
Mutual Savings Banks	49.9	14.8	53.0	14.1
Commercial Banks	45.6	13.5	52.0	13.9
Life Insurance Companies	42.7	12.6	41.4	11.0
FNMA	15.5	4.6	17.8	4.8
Others	45.7	13.5	50.8	13.6

Source: Federal Reserve Bulletin, June 1972.

institutions. Instead, commercial banks have engaged primarily in commercial and consumer lending. Substantial increases in time deposits since 1960, however, have allowed banks to make more mortgage loans, especially during periods of easy money and low interest rates. Normally, most mortgages issued by banks have a lower loan to value ratio and a shorter maturity than those issued by nonbank thrift institutions. Only a little more than 20% of time and savings deposits at banks have found their way into residential mortgages. About 75% of these loans have been of the conventional type in recent years.

Life insurance companies participate in the residential mortgage market almost exclusively through

STRUCTURE OF THE RESIDENTIAL MORTGAGE MARKET

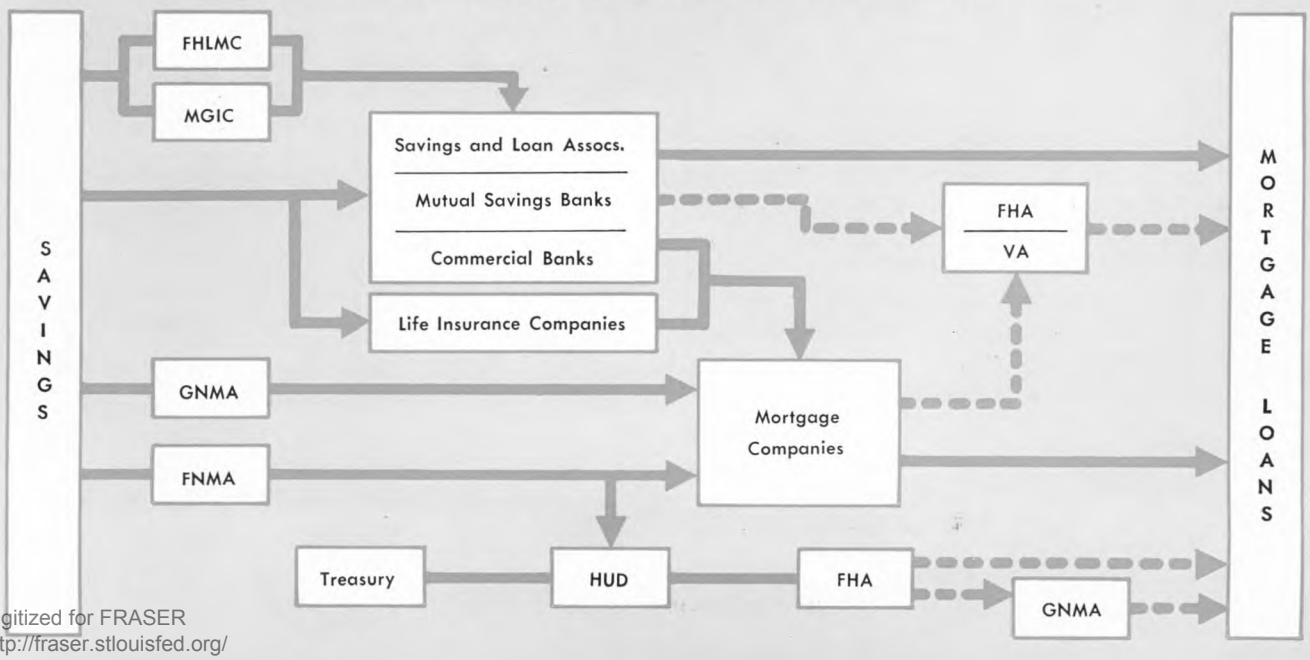


Table II

DISTRIBUTION OF VA AND FHA LOANS

December 1971
(estimated)
($ billions)

	FHA	Percent	VA	Percent
Savings and Loan Associations	$13.8	17.0	$10.8	27.3
Mutual Savings Banks	16.1	19.8	12.1	30.6
Commercial Banks	8.3	10.7	3.0	7.6
Life Insurance Companies	10.8	13.3	5.0	12.7
FNMA	12.7	15.6	5.0	12.7
Others	19.5	24.0	3.6	9.1
Total	$81.2	100.0	$39.5	100.0

Source: Federal Reserve Bulletin, June 1972.

the secondary market, relying largely on mortgage companies to originate the loans. Although both the yield and maturity of mortgages are attractive to life insurance companies, the process of originating them would require operational activities ill-suited to insurance companies. Recently, life insurance companies have been investing somewhat less than they once did, but they still hold over 20% of their total assets in residential mortgages, with about one-third of these backed by the FHA and VA.

Government Guarantees and Insurance Until the mid-1960's, most of the Federal government's overt efforts to improve housing finance were conducted through the Federal Housing Administration and the Veterans' Administration. To reverse the widespread foreclosures on mortgages during the Great Depression, the FHA was conceived in 1934 for the purpose of insuring residential mortgages made to individuals of modest economic circumstances. Insurable loans currently are limited to a maximum of $33,000 with down payments graduated from 3-15%, depending on the size of the loan. The property also must be appraised and approved by the FHA. In the 1960's, FHA programs to provide funds in the form of subsidies, as well as insurance, were introduced.[1] Typically, an FHA insured loan has an interest rate somewhat lower than rates on comparable conventional loans. The lower rate is acceptable to most mortgage lenders because of the reduced risk and better marketability of the loan, as can be seen from the wide ownership of such loans indicated in Table II. The cost of the insurance, one-half of one percent of the outstanding value of the loan, is paid by the borrower. In case of default, the lender may receive either cash or FHA debentures in exchange for the property. The debentures are fully guaranteed by the U. S. Treasury but carry a slightly higher yield than comparable Treasury securities.

During periods of tight credit and high interest rates, ceiling levels on FHA mortgages are usually below conventional mortgage rates. In this instance, most lenders are willing to engage in FHA financing only at a discount from the face value of the loan, thus raising the effective yield. Since 1961, the FHA has subsidized a variety of loans in addition to insuring them. Many of these programs call for the FHA to pay the difference between the reduced house payment a low income individual can afford and the fair market payment. This type of program has expanded considerably in recent years.

The VA operates under many of the same conditions as the FHA, except that its programs are restricted to qualified veterans. Also, loan to value ratios are usually about 98% but may run as high as 100%. On defaulted loans, the VA pays cash for a portion of the loan and exchanges its debentures for the remainder. The borrower pays no fee as in the case of an FHA loan. Most VA programs merely guarantee loans, although funds are available in some instances.

Mortgage Companies One important group of participants in the mortgage market often goes unnoticed, because its members do not hold a permanent portfolio of mortgages. These are mortgage banks or mortgage companies. The volume of mortgage activity conducted by these institutions is shown in Table III. Mortgage companies utilize short-term funds borrowed from commercial banks to originate and close mortgage loans that they eventually sell to other financial institutions, a process indicated by the relationships shown in the diagram. During most of the 1960's, mortgage companies sold to life insurance companies and mutual savings banks about 60-70% of the loans they originated. About 90% of the residential mortgages originated by mortgage companies are FHA insured or VA guaranteed, which enhances the marketability of the loans. Although the Federal National Mortgage Association bought a number of loans made by mortgage companies in the latter 1960's, this trend was substantially reversed in 1971 and, so far, in 1972.

Government Agencies and the Secondary Market In the latter half of the 1960's, rapid economic expansion laid the groundwork for substantial housing demand. More people were earning higher incomes

[1] See "FHA Mortgage Insurance and Subsidies," *Business Conditions*, Federal Reserve Bank of Chicago (March 1972), pp. 8-15 and John H. Hand, "Government Lending Agencies," *Financial Institutions and Markets*, ed. Murray E. Polakoff (Boston: Houghton Mifflin Co., 1970), pp. 230-236. The Hand article also describes VA, FNMA, and GNMA.

and aspiring to higher standards of living, including ownership of attractive homes. In addition, greater attention was given by the government to the housing problems of the urban poor. This growing demand for housing created a strong demand for mortgage funds at a time when other participants in the capital market were also aggressively seeking funds. These factors, in conjunction with various economic and stabilization policy forces, eventually produced historically high interest rates and a limited availability of credit, which severely reduced the flow of funds into mortgages. One of the reasons that the mortgage market was unable to attract its customary share of funds was the relatively underdeveloped state of the secondary market for mortgages. Many suppliers of funds to the capital markets had avoided investing in mortgages because these instruments limit portfolio flexibility. Most mortgage loans are characterized by such features as appraisal standards, loan to value ratio, and certain local variations, all of which reduce the marketability of mortgage securities.

Given the high social and political priority accorded housing in this country, the Federal government has moved to strengthen the secondary mortgage market. In 1968, legislation was enacted converting the Federal National Mortgage Association into a government-sponsored private agency, whose primary function was to purchase FHA and VA mortgages from originators of loans. As a semi-private agency, FNMA's operations are not financed through the Federal budget. Thus, FNMA now has a much greater freedom to borrow in the capital markets and to purchase mortgages. Since 1968, FNMA has rapidly increased its purchases, raising its holdings over $10 billion by the end of 1971, as shown in Table IV. FNMA obtains the funds used to purchase mortgages by selling securities directly to the public as shown in the diagram. Because these securities are explicitly not guaranteed by the U. S. Treasury, they are traded in the market

Table III

ACTIVITY OF MORTGAGE COMPANIES

($ billions)
Residential Mortgages

	Loans Closed	Loans Serviced
1965	$10.9	$47.9
1966	9.3	51.1
1967	9.7	54.4
1968	10.4	58.4
1969	11.6	63.0
1970	13.0	68.5

Source: Mortgage Banking 1970.

Table IV

FNMA ACTIVITY

($ billions)

Year	Purchases	Sales	Year-End Loan Portfolio
1968	$1.9	$.....	$ 7.2
1969	4.1	.....	10.9
1970	5.1	.....	15.5
1971	3.1	.3	17.8

Source: Savings and Loan Fact Book, 1972.

for government agency securities. "Agencies" are regarded as having a slightly greater degree of risk than Treasury backed securities and consequently carry a slightly higher yield.

As a private corporation, FNMA is profit oriented as well as an official supporter of the secondary mortgage market. Beyond normal expenses, the size of its profit margin depends on the spread between yields earned on mortgages purchased and the interest costs of borrowing. When interest rates are generally high the spread narrows, and when they are low it widens. FNMA's debt is primarily short- and intermediate-term as opposed to the long-term nature of its mortgage holdings. Thus, the return on FNMA's assets remains fairly stable, while its interest costs fluctuate in step with the movement of interest rates in general. As interest rates have retreated during the last two to three years from historical highs, FNMA has lengthened its debt structure in preparation for future tight money periods. The greatest need for extensive purchases of mortgages by FNMA of course comes when interest rates are high, which is also the time when its profit margin is being squeezed.

In 1968, FNMA began acquiring mortgages via the auction procedure. As it now stands, biweekly auctions are held on Mondays at the FNMA headquarters in Washington. One week FNMA buys only VA and FHA backed loans and in the next only conventional loans.[2] Actually, existing mortgages do not directly enter into the auction process. Instead, FNMA offers a four month commitment to purchase a given volume of mortgages at a stated price. After all bids have been received, FNMA accepts a quantity of commitments whose yield is commensurate with current market conditions. The bidder pays a nonrefundable fee of one-quarter of one percent of the value of the loan. The bidder, however, is not required to honor the commitment. If interest rates fall, and the value of the mortgages

[2] In 1970, Congress authorized FNMA to purchase conventional, as well as FHA and VA backed, mortgage loans.

Table V

ESTIMATED OWNERSHIP
OF GNMA PASS-THROUGH SECURITIES
FEBRUARY 1972

($ billions)

	Outstanding	Percent
Total	$3.7	100.0
Savings and Loan Associations	1.7	46.9
Mutual Savings Banks	.7	19.2
Commercial Banks	.1	4.0
Insurance Companies		
Corporations and Partnerships	.3	9.2
Pension Funds	.2	5.7
Mortgage Companies*	.3	8.6
Credit Unions	.2	5.7
Individuals	**	.6

*Held for future sale.

**$22 million.

Source: **Weekly Bond Buyer**, March 27, 1972, p. 6.

rises, he is free to sell them elsewhere. Almost all of the loans purchased by FNMA in the auction process come from mortgage companies.

Part of FNMA's mortgage holdings in recent years has come from a source other than the weekly auctions. FNMA's charter requires it to buy a reasonable amount of subsidized loans made to low-and moderate-income families. So FNMA has provided a substantial volume of funds to support a number of the HUD programs, as indicated by the arrow from FNMA to HUD in the diagram.

To provide savings and loan associations with their own secondary outlet for mortgages, Congress created the Federal Home Loan Mortgage Corporation in 1970. This agency sells securities to the public and uses the proceeds to purchase mortgages from Federally insured savings and loan associations. Specifically, FHLMC engages in purchases and sales of FHA and VA backed loans, participates in conventional loans, and purchases conventional loans outright. These operations, like those of FNMA, are conducted on a forward commitment basis. Another objective of FHLMC is to standardize loan documents, appraisals, and other aspects of the mortgage lending process in order to enhance the marketability of the typical mortgage security. Since 1970, FHLMC has obtained enough funds in the capital markets to purchase over $1 billion of mortgages in 1971.

The other government agency actively participating in the residential mortgage market, the Government National Mortgage Association, engages in a much wider variety of programs than does either FNMA or FHLMC. GNMA was created in 1968 to assume several functions previously performed by FNMA. To allow FNMA to operate freely as a semiprivate organization, GNMA was given its special assistance fund and its management and liquidation fund. These two funds mostly contain loans made prior to 1954 or loans made on a one-time basis to serve a specialized need. GNMA's major function has emerged in two other areas, which are delineated in the diagram. First, it subsidizes and underwrites many of the programs run by HUD. Second, it has participated in the development of a new mortgage security, known as a pass-through.

The pass-through program was initiated in 1970. Any mortgage lender authorized to make FHA loans may put together a package of FHA and VA backed loans. Once the contents of the package or pool have been approved by GNMA, it guarantees them, pledging the full faith and credit of the government to insure the timely payment of both principal and interest.

Pass-throughs apparently have been quite attractive to a large bloc of investors, as shown in Table V, and may now be purchased in amounts as small as $25,000. The return on a pass-through takes the form of a monthly payment consisting of both interest and principal.

A private organization that performs a function similar to that of FNMA and FHLMC is the MGIC Mortgage Corporation, which is a subsidiary of the privately-owned MGIC Investment Corporation, a long-time insurer of mortgages. MGIC, which began doing business in March 1972, intends to establish a secondary market for the mortgages it insures. It is especially interested in the new 95% conventional loans that savings and loan associations have been allowed to make since August 1971. As shown in the diagram, MGIC sells securities to the public to provide capital for mortgage purposes.

Conclusion The common characteristic among these organizations (FNMA, GNMA, FHLMC, MGIC) is that they have provided a more effective channel between the typical mortgage loan and the highly competitive capital markets than existed in the past, especially during tight money periods. For years, the traditional mortgage loan, with all of its unstandardized features, has had great difficulty competing for funds whenever credit conditions tightened. Although the institutional structure of the mortgage market has grown to be extremely complex, largely as a result of Federal government participation, the development of an effective secondary market has helped to channel more funds into residential mortgages than ever before.

Philip H. Davidson

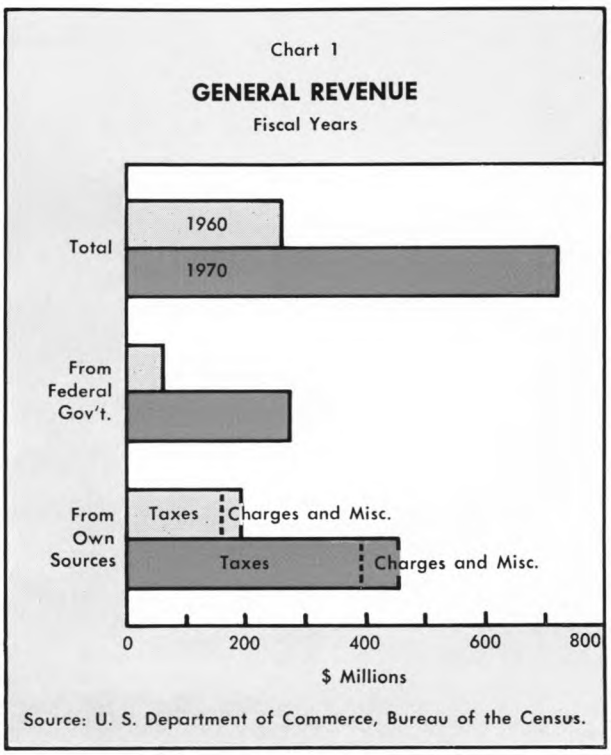
GOVERNMENT FINANCE IN THE NATION'S CAPITAL

Unlike any other municipality in the country, the nation's capital is unique in the area of government finance. Whereas other political subdivisions in the U. S. can make final determinations regarding the methods of acquiring and dispensing revenue, in Washington, D. C., such decisions are made not only by the local administration but also by the Office of the President and Congress. Moreover, because of its unique relationship to the National Government, the District receives annually a Federal payment to supplement revenue from its own sources. An annual contribution by the Federal Government, this payment, which has been made sporadically since 1790, is not based on the District's own tax resources or its expenditures, but, rather, upon the discretion of Congress. Although no agreement has been reached regarding the size of the payment, which has jumped from $6 million in 1939 to $139.0 million in 1971, policymakers have agreed that the cost of governing the District of Columbia should not be borne by District taxpayers alone and that this national contribution is indispensable. With expenditures doubling at less than ten-year intervals, how to meet the growing revenue needs of the city remains one of the District's most urgent problems.

Special Fiscal Problems The very presence of the Federal Government places extra and unusual strain on the city's finances. For instance, the city picks up the tab whenever the President honors foreign visitors with welcoming ceremonies, or when a group of protestors demonstrates for a particular cause. The city's 120-odd foreign embassies and chanceries require constant police protection. Moreover, every four years when a President is inaugurated the cost of additional traffic control, visitors' protection, etc. becomes the responsibility of the city. Not only does the Federal presence place additional costs on the city, offset to some extent by revenue from tourists, but it also imposes special restraints on the District's taxing freedom. The Federal Government is the city's major employer and chief property owner; but because the National Government cannot be taxed, the city is denied a large potential source of revenue.

Geographical restrictions also affect the financial status of the city. For instance, the District comprises an area of only 67 square miles. This relatively small area, coupled with a declining population, greatly limits available sources of revenue. Also, the District is restricted geographically by the states of Maryland and Virginia, which further places it under confining economic restraints. For example, the large number of commuters who live in the adjacent states but are employed by the Federal Government and work in the District are not taxed directly by the city, which loses substantial revenue as a result. The move to the suburbs, which is taking place in most large cities, is especially troublesome for Washington, since its suburban areas are in other states. Although the District has the tax programs and in many cases the tax rates, it lacks taxpayers.

Revenue From fiscal year 1960 to 1970, general revenue, i.e., revenue from both the Federal Government and the District's own sources, almost tripled, rising from $256.3 million to $720.9 million (Chart 1). In 1970, revenue from the Federal Government,



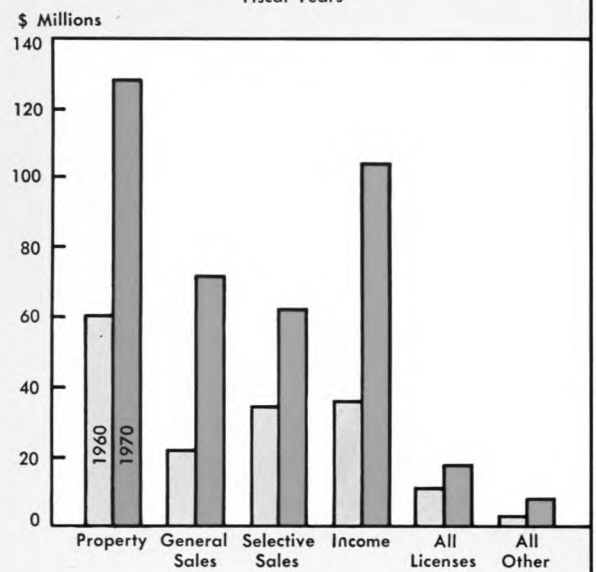
which includes the annual Federal payment and various Federal grants, totaled $271.5 million, while revenue from the city's own sources accounted for $449.4 million. The proportion of revenue contributed by the Federal Government increased from 24.0% in 1960 to around 38.0% in 1970, while the ratio of funds from the District's own sources declined from about 76.0% to 62.0%. Yet, even with the rapid rate of growth in revenue from the Federal Government, well over half of total revenue in 1970 came from the District's own sources, primarily from taxes (Chart 2).

Although property taxes remained the largest single source of tax revenue in 1970, such taxes accounted for only around one-third of total tax revenue and slightly less than one-fifth of total revenue. The relative importance of the property tax is conspicuously smaller in the District of Columbia than in other cities of similar size. For example, in Dallas and Cleveland the ratio of property tax revenue to total tax revenue was 68.5% and 58.8%, respectively, while the proportion for the District was only 32.7%. The property tax produces relatively little revenue in the District, because a proportionately large share of real property is not taxable and the effective tax rate is comparatively low. For fiscal year 1971, the fixed minimum rate was $3.20 per $100 of assessed value, but property in the District is assessed at only 54.3% of market value. In these terms, the effective assessment rate in fiscal year 1971 was $1.74 per $100, below the average of $2.50 per $100 of market value for the 25 largest cities. Only three of the 25 largest cities had effective rates lower than that of the District.

Chart 2

REVENUE FROM TAXES

Fiscal Years



Source: U. S. Department of Commerce, Bureau of the Census.

City income taxes accounted for around 27.0% of tax revenue in 1970. From 1960 to 1970, revenue from personal income taxes rose from $35.6 million to $103.5 million. The District initiated personal income taxation in 1939 and has increased rates six times in the last 20 years. Current rates range from 2.0% on the first $1,000 of taxable income to 10.0% on amounts of $25,000 and over, with exemptions of $1,000 for single persons, $2,000 for married couples, and $500 for each dependent. A comparison between the District and the 40 states that levied an income tax in 1971 indicates that the nation's capital ranked well above the average. Based on taxes paid by a family of four with incomes of $5,000, $10,000, and $25,000, the District ranked 18th, 11th, and 8th, respectively. Also, individual income tax collections as a percent of total personal income in the District stood at 2.23%, considerably above the national average of 1.15% in 1970. Considering the relatively high rate of income taxation and the large number of people working in the District, revenue produced from this tax is not as large as might be expected. The major reason for this situation is that nonresidents, that is, people who earn income in the District but live elsewhere, are exempted from the tax.

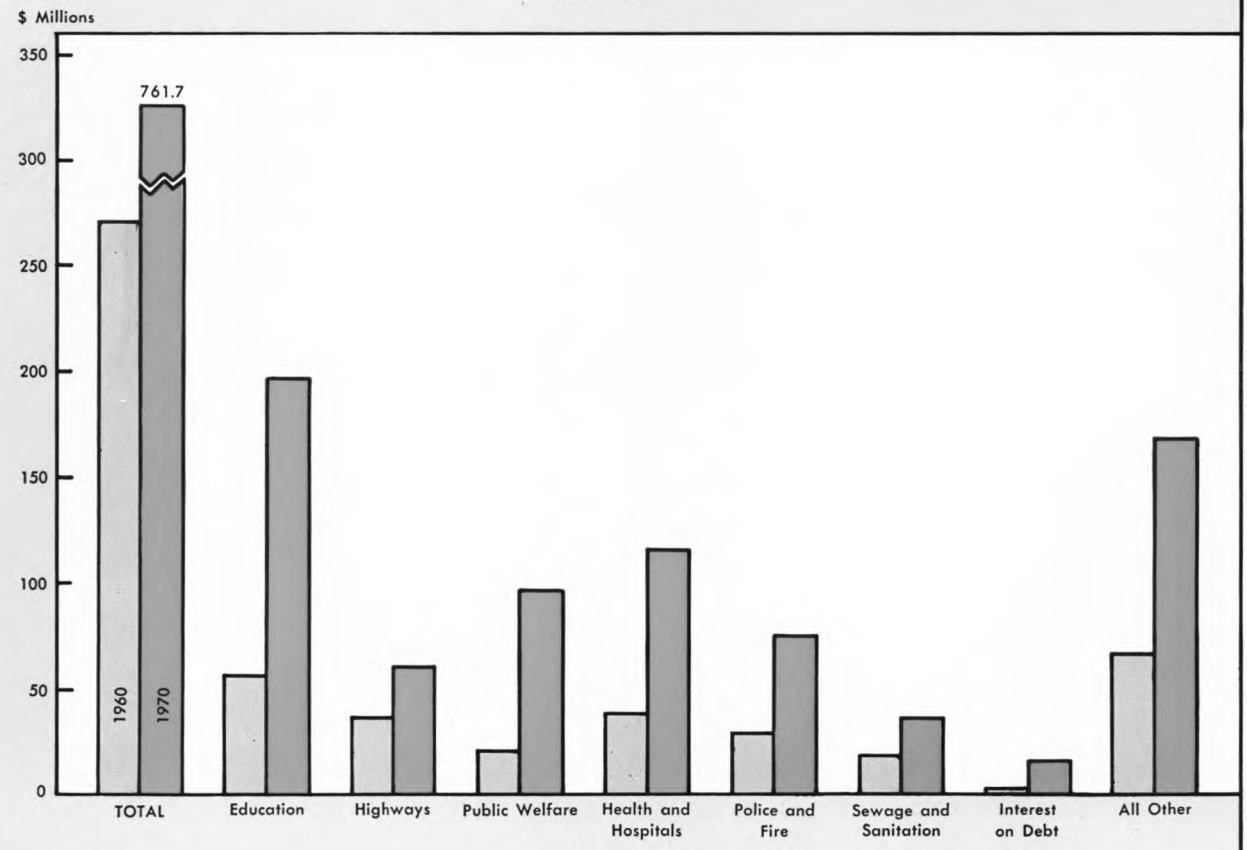
Another source of District tax revenue is the sales tax. General and selective sales taxes accounted for around 34.0% of total tax revenue or $133.3 million in 1970. First imposed in 1949, the general sales tax was the city's fastest growing source of revenue during the 1960's. Revenue from the general sales tax increased from $22.5 million in 1960 to $71.3 million in 1970, an average annual rate of increase of 12.0% The District sales tax rate as of September 1971 was 4.0%, slightly above the 3.7% average of the 45 states that levy sales taxes but below the 4.7% average rate of the 25 largest cities. The District taxes food at a relatively low rate of 1.0% and exempts all drugs. Sales taxes have two advantages for the District: (1) the tax is easy to administer because it is collected by the merchant and (2) the tax affects tourists and nonresidents who otherwise contribute little to the support of local government.

Other sources of tax revenue in the District are taxes from licenses and certain miscellaneous taxes.

Chart 3

GENERAL EXPENDITURES BY FUNCTION

Fiscal Years



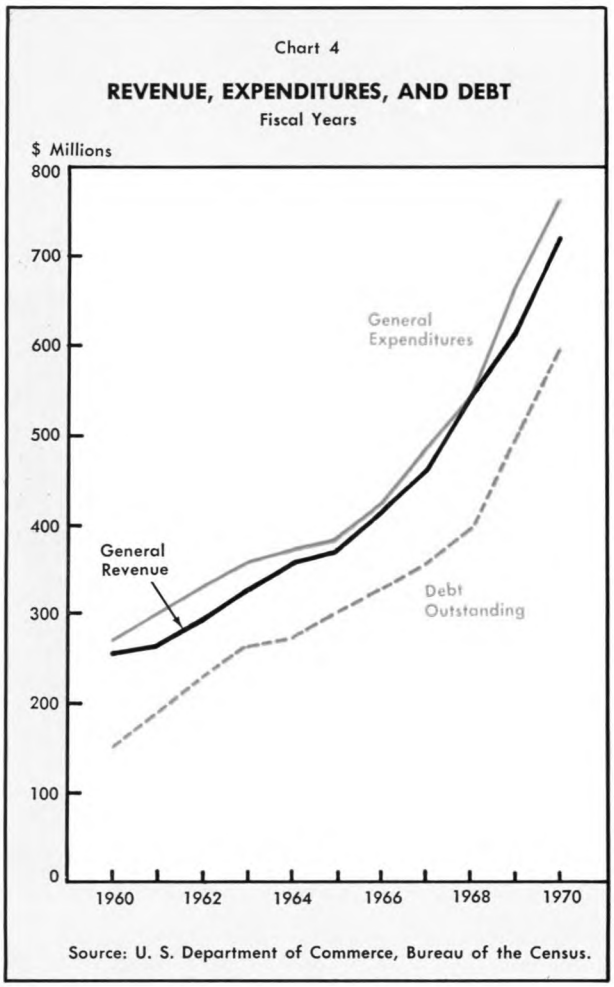
Source: U. S. Department of Commerce, Bureau of the Census.

Revenues from both these sources increased substantially from 1960 to 1970, but such levies still account for only a small proportion of total tax revenue. In fiscal 1970, revenue from licenses accounted for $18.1 million, while revenue from other miscellaneous sources was $8.2 million.

A review of the tax structure indicates that the District has a relatively low property tax, a relatively high individual income tax, and a sales tax that is about average. The total tax burden of District residents appears to be much the same as the average burden shouldered by residents of the nation's 25 largest cities. In fiscal 1971, total taxes as a percent of family income for the District family earning $5,000 was 6.5%, while the 25 city average was 8.0%. In the $25,000 income classification, the ratio of total taxes to family income in Washington was 8.6%; the 25 city average was 7.7%.

Expenditures Between fiscal years 1960 and 1970, total general expenditures grew at an average annual rate of around 11.0%, rising from $269.2 million in 1960 to $761.7 million in 1970 (Chart 3). Total per capita expenditures, which also grew at an average annual rate of 11.0%, rose from $353.28 to $1,006.87.

Education accounted for the largest single expenditure in 1970, $197.6 million. Expenditures for District students grew approximately 13.5% per year during the 1960's, accounting for some 26.0% of total expenditures by 1970. Per capita educational expenditures more than tripled, rising from $73.10 to $261.22. A particularly sharp increase in expenditures for higher education occurred during the latter part of the 1960's. Such expenditures rose from $1.3 million in 1960 to $37.9 million in 1970. Most of the growth in higher education took place after the passage of the Public Higher Education Act of 1967,



which provided for the creation of the Federal City College and the Washington Technical Institute.

Expenditures for health and hospitals also increased substantially, rising at a rate of 11.4% per year. Around 15.0% of total expenditures, or $114.2 million, went for health care for local residents in 1970. Expenditures for police and fire protection also rose, climbing at a 9.8% average annual rate.

The most rapidly growing expenditure item during the decade of the 1960's was public welfare. From 1960 to 1970, welfare expenditures grew at an average annual rate of 16.5%, increasing from $20.9 million to $96.6 million. Welfare expenditures as a percent of total expenditures rose from 7.8% in 1960 to 12.7% in 1970. Rapid growth was also reflected in public welfare expenditures per person, which more than quadrupled, jumping from $27.43 to $127.66.

Although all expenditure categories rose in absolute terms during the period, spending for highways and sanitation and sewage facilities fell as a proportion of total expenditures. The proportion of revenue spent for highways dropped from 13.7% in 1960 to 7.9% in 1970, while the ratio of sanitation and sewage expenditures to total expenditures declined from 6.8% to 4.6%.

Debt Expenditures exceeded general revenue in every year except 1968 (Chart 4). In order to meet the rising costs of conducting its affairs, the city increased its outstanding debt. The District borrows directly from the U. S. Treasury, rather than on the open market as do other municipalities. Until November 1967, District borrowing was at a flat rate prescribed by Congress, but in that year Public Law 90-120, which greatly expanded the amount the District could borrow, was passed by Congress. The debt limit was changed so it could not exceed 6.0% of the average general fund revenues. Congress, however, still maintained project-by-project approval of all borrowing. Because of this change in the amount that could be borrowed, debt rose much more rapidly between 1968 and 1970 than in the previous years of the decade. Debt outstanding increased nearly $200 million from 1968 to 1970, just slightly less than the total increase from 1960 to 1967. In 1960, debt outstanding for the District was $147.5 million; by 1970, it totaled $596.5 million.

Conclusion Government finance in the nation's capital is unlike that of any other municipality because of Washington's unique political status. Two characteristics of government finance that the District unfortunately shares with other urban areas, however, are rising costs and expanding needs. In this respect, Washington is much like other American cities that are seeking new ways of acquiring revenue in order to satisfy the growing demands of their residents.

Carla R. Gregory

BUSINESS CYCLES, GROWTH CYCLES, AND THE CURRENT EXPANSION

Now that over a year and a half has passed since the beginning of the current economic expansion in November 1970, sufficient economic data are available to allow a meaningful comparison of the current business cycle with those of the recent past. This article discusses the current economic expansion in terms of the traditional business cycle and compares the current cycle with an average cycle representative of the three most recent business cycles in the U. S. Some of the distinguishing noncyclical features of the current cycle are also examined. Finally, there is a short discussion of a recently proposed alternative approach to cyclical economic analysis, the growth cycle.

THE BUSINESS CYCLE

Traditionally, the term business cycle has been used to denote the recurring sequence of economic contraction, trough, economic expansion, and peak. Analysis of these cycles, which are characteristic of economic activity in the United States, can be conducted on different levels. Since the term business cycle is meant to apply to generally widespread fluctuations in economic activity, the behavior of comprehensive aggregate economic indicators should be one important consideration in any analysis of the business cycle. A number of such indicators have been selected from the National Bureau of Economic Research (NBER) list of coincident economic indicators: nominal GNP, real GNP, industrial production, non-agricultural payroll employment, and the rate of unemployment. These indicators generally reflect changes in the overall level of economic activity at approximately the time such changes occur and will be used to examine cyclical behavior in this article.

Since World War II, two significant changes in the nature of the business cycle have been reflected in the behavior of these economic indicators. In terms of the amplitude of their expansions and contractions, the severity of the post-World War II cycles has declined relative to that of pre-World War II cycles. Also, the length of the contraction phase of the cycle has declined in the post-World War II period. Both of these changes are also apparent in the behavior of the current business cycle.

Although the recurring ups and downs in the level of business activity constitute the common element of the business cycle, each cycle is also accompanied by its own distinctive economic, political, social, and institutional phenomena. The most obvious distinguishing features of the current business cycle, the beginning of which is taken by the NBER as the November 1969 peak, include the automobile strike of late 1970, an unusually persistent high rate of inflation and the consequent institution of a wage-price control system. Less obvious, but equally important, are the noncyclical changes in the labor market, which have had a significant impact on the behavior of unemployment in the current cycle.

THE CURRENT CYCLE AND THOSE OF THE PAST

Duration The duration of cyclical contractions in the United States since World War II appears to be declining. Based upon cyclical turning points established by the NBER, the average duration of the seven business contractions that occurred between the two World Wars was 16 months. The average length of the post-World War II recessions was 11 months. On the basis of a tentatively established November 1970 trough date, the contraction prior to the current expansion lasted 12 months.[1] The average length of the interwar expansions lasted approximately 35 months. During the post-War periods, the expansions averaged about 49 months. The increase in average duration of expansions is due entirely to the 103 month expansion from 1961 to 1969.

The Coincident Economic Indicators The cyclical behavior of the chosen indicators for the current cycle and for a representative post-War cycle is presented in Chart 1. The representative cycle is computed as the average of the given economic series for the three business cycles having their troughs in August 1954, April 1958, and February 1961. The behavior of both the current and the average cycle is depicted over the period beginning with the fourth quarter

[1] If the 1970 automobile strike had been averted, it seems likely that the contraction would have ended no later than August 1970, thus lasting only nine months. This possibility is suggested by Solomon Fabricant in *Recent Economic Changes and the Agenda of Business-Cycle Research*, National Bureau Report 8, Supplement (New York: National Bureau of Economic Research, May 1971).

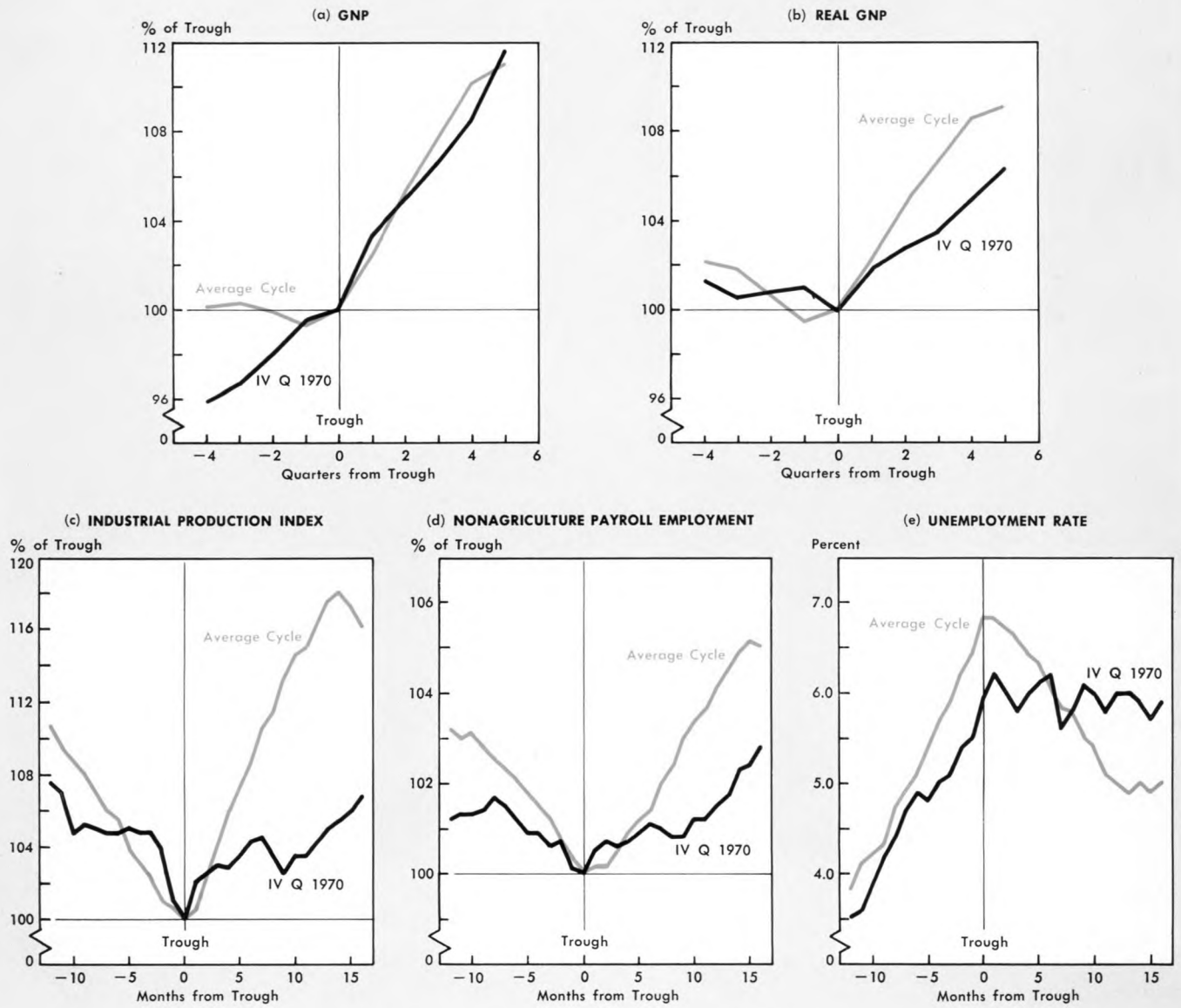
prior to the trough and ending with the fifth quarter after the trough.

The post-War contractions have been characterized by relatively mild fluctuations in aggregate economic activity. During the average post-War contraction, total spending, as measured by the annual rate of Gross National Product (GNP), fell by less than 1.0% as shown in Chart 1a. During the 1970 contraction, GNP actually rose by over 4.0%, reflecting an unusually high rate of inflation for a contraction period. Economic recovery following these mild contractions has likewise been characterized by relatively mild GNP growth. During the first five quarters of recovery in the average cycle, GNP rose by about 11.0%. The rate of GNP growth during the first five quarters of the current expansion was slightly less than 12.0%.

Real GNP (GNP corrected for inflation) is the most comprehensive indicator of real economic activity. Chart 1b shows that in the average post-War contraction real GNP declined by slightly more than 2.0%. There was an approximate 1.3% real GNP decline during the contractionary phase of the current cycle. In the first five quarters of the current

Chart 1

COINCIDENT ECONOMIC INDICATORS



Source: U. S. Department of Commerce, **Business Conditions Digest**, various issues.

expansion, real GNP rose by about 6.0%, compared to an increase of about 9.0% for the average post-War cycle.

Industrial production is a less comprehensive, though somewhat more volatile, indicator of real economic activity. Chart 1c indicates that the average decline in industrial production for the three previous business contractions was slightly less than 15.0%; during the 1970 contraction, industrial production declined by less than 8.0%. Industrial production rose by almost 7.0% during the first five quarters of the current expansion, compared to an approximate 16.0% rate of increase for the corresponding expansionary period of the average cycle.

The cyclical behavior of employment is presented in Chart 1d. In comparison with the experience of the average post-War cycle, the current cycle has been characterized by a relatively mild fluctuation in employment. Nonagricultural payroll employment, which declined by about 3.0% during the average post-War contraction, fell by only about 1.0% in the contraction phase of the current cycle. Employment in the current expansion increased by a little less than 3.0%, compared to an approximate 5.0% increase during the first five quarters of the average expansion.

The most atypical cyclical indicator observed during the current business cycle was the unemployment rate, which is shown in Chart 1e. The unemployment rate rose by 2.4 points during the contractionary phase of the current cycle, and by 3.0 percentage points during the average contraction. But where the unemployment rate declined by 1.8 points during the first five quarters of average cyclical expansion, it remained relatively stable during the current expansion, fluctuating for the most part near the 5.9% level, which it reached at the time of the November 1970 trough.

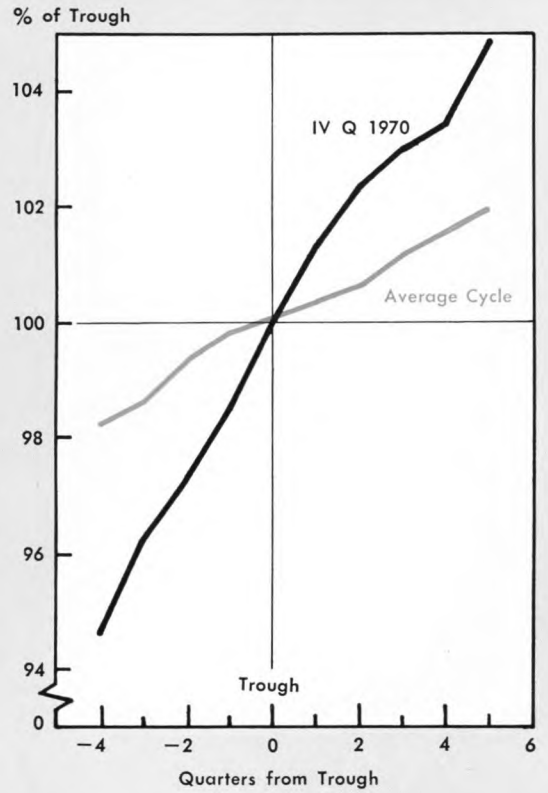
NONCYCLICAL INFLUENCES

A proper understanding of the cyclical nature of economic activity requires an awareness of those important noncyclical forces that might be affecting the economy. Such forces may act either to exaggerate or dampen cyclical economic forces. Consequently, they may provide an insight into what might appear to be anomalous behavior on the part of economic indicators.

Inflation and Wage-Price Controls Perhaps the most conspicuous feature of the current business cycle has been the relative insensitivity of the unusually high rate of inflation to cyclical economic contraction. This persistent inflation is reflected in the previously mentioned divergence between the growth rates of nominal and real GNP during the current business cycle. The behavior of the implicit GNP deflator, one indicator of price performance, is shown in Chart 2.

Chart 2

GNP IMPLICIT PRICE DEFLATOR



Source: U. S. Department of Commerce, Bureau of the Census.

During periods of inflation, fiscal and monetary policy measures are intended to act on excess aggregate demand, the source of so-called demand pull inflation. During 1969, such policies were effective in dissipating the excess demand that had developed from 1966 to 1968. But in spite of the recession that began in late 1969, prices continued to rise substantially over the current cycle, with relatively little decline in their rate of increase. Subsequent application of expansionary policies to stimulate economic recovery was complicated by the possibility that such policies might exacerbate the inflationary problem. The apparent failure of prices to respond to cyclical contraction was attributed by many to the strong

inflationary expectations that had been generated from 1966 to 1968. This inflationary psychology presumably contributed to increasingly higher wage demands by workers trying to offset the effects of past and expected future inflation on their income. Wage settlements in 1970 and 1971 reflected the so-called cost push variety of inflation, which is relatively insensitive to the usual economic policies designed for demand pull inflation. The wage-price control system instituted in August 1971 was intended to eliminate the prevailing inflationary psychology and thereby contribute to a slowing in the rate of price increase. Typically, such controls have been instituted in response to demand pull inflation occurring during periods of economic expansion. In those situations, controls often lead to inefficient resource allocation, quality deterioration, and perhaps shortages for some products. Imposition of a control system during a period of slack economic conditions, however, suggested the possibility that such problems would be avoided. Economic recovery could occur without placing an immediate strain on production capacity. Moreover, increased productivity typical of cyclical recovery would have a moderating effect on inflationary pressures through its downward impact on unit labor costs. The goal of the control system is to eliminate inflationary expectations and their effects on prices before the economy again becomes subject to the demand pull pressures of a strong cyclical expansion. Once inflationary expectations are eliminated, it should be possible to rely on countercyclical monetary and fiscal policies to achieve relative price stability.

Strike Activity The automobile strike of 1970 and the threatened steel strike of 1971 provide important examples of the interrelations between the traditional business cycle and noncyclical factors that affect overall business activity. Although many economic indicators did reach a trough in November 1970 (or the fourth quarter for quarterly data), it is possible that the late 1970 automobile strike retarded the emergence of expansionary forces which had begun to appear earlier in 1970. Moreover, the subsequent resurgence in economic activity that occurred in the first quarter of 1971 in large part reflected a normal post-strike reaction rather than a fundamentally strong cyclical upturn in economic activity. Thus, the strong rebound in the automobile industry may have obscured strike induced weaknesses in other sectors of the economy. The problem of determining the actual cyclical turning point is further complicated by the steel inventory buildup of early 1971, which occurred in anticipation of a possible August 1971 steel strike. If the cyclical reversal occurred subsequent to the early 1971 automobile rebound, it would provide one possible explanation for the sluggish nature of the 1971 cyclical recovery.

Labor Market Changes Noncyclical forces also had an important effect on the cyclical behavior of employment and unemployment in the current business cycle. Contributing to the somewhat slow recovery growth in payroll employment was an actual *decline* in manufacturing employment during 1971. Much of this decline has been attributed to reduced defense expenditures and the resulting employment effect in industries producing ordnance, aircraft, and communications equipment. At the same time, a relatively high rate of labor force growth has characterized the current expansion, tending to offset downward cyclical pressures on the unemployment rate. During the five quarter post trough period of the current cycle, the civilian labor force increased by almost 3.5%; the corresponding rate of increase in the representative cycle was only 1.8%.

The declining U. S. role in Southeast Asia has also contributed in a more direct manner to the employment situation. As the size of the armed forces declines, returning veterans contribute to the growing civilian labor force. Moreover, these veterans are usually young and inexperienced and consequently tend to have a higher than average rate of unemployment (6.9% in 1970 and 8.8% in 1971). As a result, there is further upward pressure on the unemployment rate to oppose the downward pressure of cyclical expansion.

There is much additional information concerning noncyclical factors that might facilitate an understanding of economic behavior in the current business cycle. For example, balance of payments problems, the international monetary crisis, and the consequent devaluation of the dollar are undoubtedly important considerations in the analysis of recent economic fluctuations. The foregoing is sufficient, however, to illustrate the difficulty involved in analyzing cyclical economic activity.

GROWTH CYCLES

Fluctuations in economic activity are characteristic of all modern industrialized states. In some, however, especially Japan and the countries of Western Europe, these fluctuations differ in one respect from the traditional business cycle that has been typical of the post-World War II U. S. economy. In these countries, the fluctuations in the rate of economic

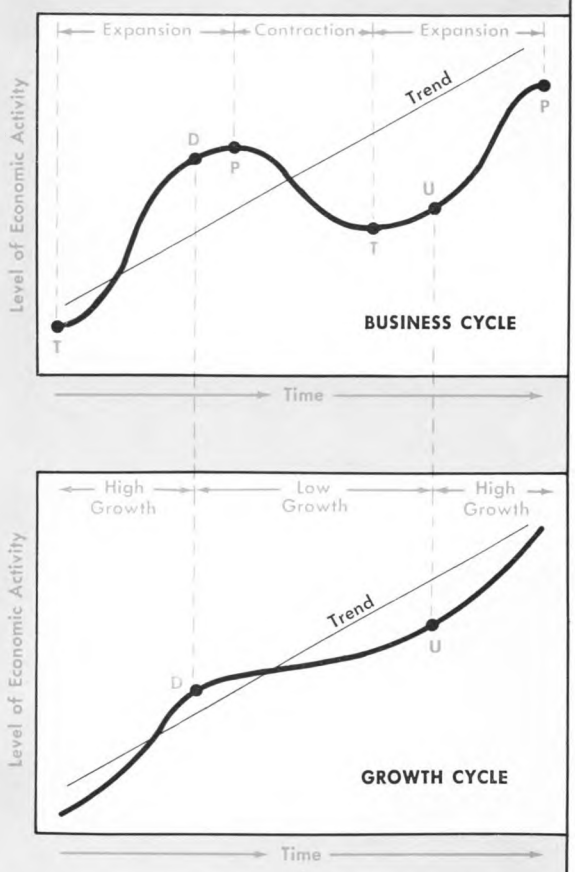
growth are seldom so great that the growth rate becomes negative. Consequently, the actual level of economic activity seldom declines as it does during the contraction phase of the traditional business cycle. In order to provide a more suitable framework for the analysis of such fluctuations, and also to give a means of comparing U. S. economic activity with that of other countries, the concept of a growth cycle has been developed by NBER analysts as an alternative approach for investigating economic fluctuations.[2]

A growth cycle consists of a high growth phase and a low growth phase. The high growth phase can be defined as a period in which the actual rate of economic growth exceeds the normal rate and the low growth phase as a period of less than normal economic growth. The normal rate is simply the long-run rate of economic growth.[3] The transitions from low growth to high growth and from high growth to low growth are termed the upturn and downturn, respectively. In Chart 3, the growth cycle is compared graphically to the traditional business cycle. The growth cycle concept of turning points can be applied to the traditional cycle by finding those points where the rate of economic growth during the traditional cycle (slope of the curve) equals the trend rate of growth (slope of the trend line), that is, at points D and U in Chart 3. In terms of the traditional cycle, a reduction in the rate of economic growth must occur before the level of economic activity actually declines, so that the downturn of the business cycle precedes its peak. In a similar manner, the shift from low growth to high growth occurs after the trough of the business cycle, since higher than trend growth can occur only after the growth rate (slope of curve) has changed from negative to positive. Consequently, the high growth phase will be shorter, and the low growth phase longer, than the business cycle counterparts.

As in the case of business cycle analysis, growth cycle turning points are determined by a large number of economic indicators. Based on these indicators, growth cycle studies conducted by the NBER indicate that a low growth phase took place from the third quarter of 1966 to the fourth quarter of 1967. This low growth phase is reflected in the behavior of real GNP. During the low growth phase, real GNP grew at an annual rate of 2.9%, compared with the normal rate of approximately 4.0% for the 10-year period from 1960 to 1969. Real GNP grew by approximately 5.5% in the preceding high growth period from the second quarter of 1964 to the second quarter of 1966. During the high growth period from the first quarter of 1968 to the first quarter of 1969, real GNP grew by about 4.1%. The 1966-1967 low growth phase could have conceivably developed into an actual contraction. The fact that it did not can probably be attributed in part to easing

Chart 3

ECONOMIC ACTIVITY UNDER ALTERNATIVE CONCEPTS OF CYCLICAL BEHAVIOR



The peaks and troughs of the traditional business cycle are denoted by the letters P and T respectively. Growth cycle turning points, denoted by the letters U and D, respectively, occur when the actual rate of economic growth changes from greater than to less than (downturn), or from less than to greater than (upturn), the trend rate of growth. In algebraic terms, these transitions occur at the points where the slope of the curves is equal to the slope of the trend line. Thus, upturns and downturns can be determined for both types of cycle.

[2] For a further discussion of growth cycles, see Ilse Mintz, "Dating American Growth Cycles," *Business Cycle Today*, ed. Victor Zarnowitz (New York: National Bureau of Economic Research, 1972).

[3] This approach is open to the criticism that the long-run rate is dependent upon the time period over which the long-run rate is computed. An alternative approach is to establish growth cycles such that each high (low) growth phase is greater (less) than the average rate for the two low (high) growth phases immediately preceding and following. In practice, the two approaches yield very similar turning points.

monetary policy actions in late 1966 and early 1967 and to expansive fiscal actions later in 1967.

Some economists believe that the frequency of actual contractions in U. S. business activity will decline and that future economic fluctuations will be better characterized as growth cycles. This trend can be attributed to a number of factors. The application of monetary and fiscal stabilization policies has already been mentioned as a moderating influence on cyclical swings.[4] There are also institutional arrangements, such as the income tax structure and unemployment compensation programs, that contribute to stability in the level of aggregate demand by offsetting cyclical fluctuations in income.

The changing structure of the U. S. economy, in particular the relative growth in the size of the service sector and the government sector, provide further stabilizing influences on economic activity. Services, unlike tangible goods produced in the industrial sector, cannot be stored by the producer or the consumer. Since the consumer cannot generally stockpile services but must purchase them at the time they are needed, there is less fluctuation in the demand for consumer services than for consumer goods. Moreover, since production of a service must occur simultaneously with its consumption, the service sector is relatively free from the effects of procyclical inventory investment, which occurs in the industrial sector. Relative to the industrial sector, the service sector is also characterized by a large number of self-employed persons and white collar workers whose jobs are somewhat less sensitive to cyclical fluctuations in the level of business activity. The size of the government sector also exerts a considerable stabilizing influence on economic activity. Decisions concerning the provision of many public services (and goods) are generally not related to fluctuations in the level of economic activity, though the timing of many government expenditures can be used as a tool of stabilization policy. Together with the stabilizing effects of monetary and fiscal policies and institutional arrangements, the structural shift towards a more service-oriented economy should continue to moderate the magnitude of cyclical swings in the level of economic activity.

[4] This is not a universally accepted view of course. There are many economists, most notably Milton Friedman, who argue that monetary and fiscal policy actions do indeed contribute to economic fluctuations.

CONCLUSION

In the heady economic atmosphere of the booming 1960's, it was not hard to find economists willing to argue that cyclical economic analysis had become an anachronism. Moreover, there were numerous economists willing to concede the obsolescence of the business cycle as a useful mode of economic analysis. Undesirable though it may have been, recent experience has served as a reminder that cyclical forces are still operating in the economy.

Glenn Picou and Marjorie S. Hale

The MONTHLY REVIEW *is produced by the Research Department of the Federal Reserve Bank of Richmond. Subscriptions are available to the public without charge. Address inquiries to Bank and Public Relations, Federal Reserve Bank of Richmond, P. O. Box 27622, Richmond, Virginia 23261. Articles may be reproduced if source is given. Please provide the Bank's Research Department with a copy of any publication in which an article is used.*