

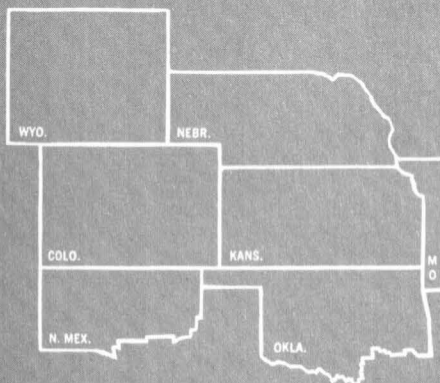


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FEDERAL RESERVE BANK OF KANSAS CITY

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SOME DEMOGRAPHIC INFLUENCES ON THE FUTURE MARKET FOR HOUSING

By Glenn H. Miller, Jr.

THE FUNDAMENTAL dynamic factor affecting the growth of demand for residential construction is new household formation. In two recently published sets of national housing requirements for the upcoming decade, fully half of the total need for new and rehabilitated housing units was ascribed to net additional household formation.¹ Household growth, in turn, depends on the size and age-sex distribution of the population as modified by various economic and social forces. The number of independent households formed from a given population depends to a great extent on the decisions of persons, single and married, to establish separate homes, and these decisions are often heavily influenced by the impact of labor market (and hence, income) conditions.

The Federal Government, primarily through the Bureau of the Census and the Bureau of Labor Statistics, has developed a large set of

demographic projections, based largely on consistent assumptions and similar benchmark dates.² Last year the Bureau of the Census published projections of the number of households and families to 1985.³ Preparation of the projections moves through three stages: population projections, marriage assumptions and projections, and, finally, household assumptions and projections.

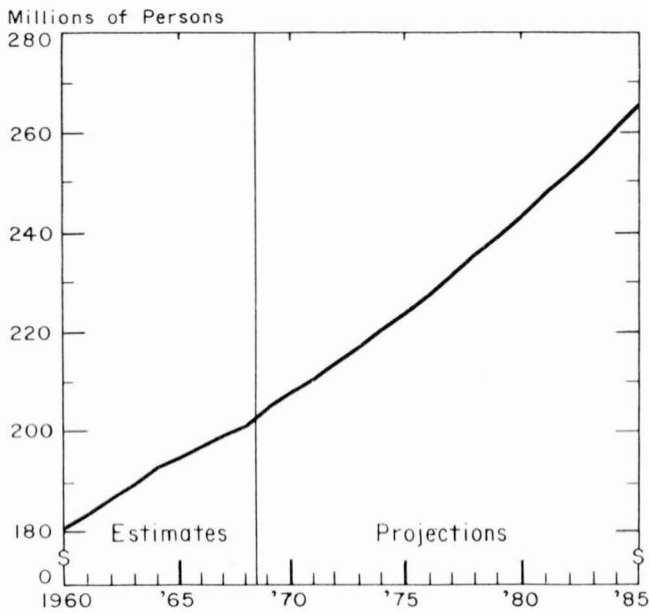
This article primarily provides a summary of some of the information on the household growth projections, placing emphasis on the foundations of the future market for housing, rather than on specific conclusions about housing demand.

All projections, of course, are subject to uncertainty. The Bureau of the Census describes its projections as "illustrative," meaning they are designed to indicate quantities which result from the adoption of certain reasonable assumptions. The projections discussed

¹These projections are by the Department of Housing and Urban Development and the Kaiser Committee. The former may be found in U. S., Congress, "Housing and Urban Development Legislation of 1968," Hearings before the Subcommittee on Housing and Urban Affairs of the Committee on Banking and Currency, 90th Cong., 2nd Sess., 1968, pp. 1344-49; the latter in Edgar F. Kaiser et al., *The Report of the President's Committee on Urban Housing, A Decent Home*, Washington, D. C., December 1968. For a discussion of these projections and their implications, see M. F. Elliott-Jones, "Residential Construction . . . and Obstruction," *The Conference Board Record*, National Industrial Conference Board, June 1969, Vol. VI, No. 6, pp. 43-50.

²Related projections are drawn together for common reference in U. S., Bureau of the Census, *Current Population Reports: Population Estimates*, "Summary of Demographic Projections," Series P-25, No. 388, March 14, 1968. ³U. S., Bureau of the Census, *Current Population Reports: Population Estimates*, "Projections of the Number of Households and Families, 1967 to 1985," Series P-25, No. 394, June 6, 1968. Estimates, projections, and quotations attributed to the Bureau of the Census in this article are from the publications cited in this footnote and the preceding one.

Chart 1
ESTIMATES AND PROJECTIONS OF THE
TOTAL POPULATION OF THE
UNITED STATES, 1960 TO 1985



SOURCE: U. S., Bureau of the Census, **Current Population Reports: Population Estimates**, "Summary of Demographic Projections," Series P-25, No. 388, March 14, 1968, p. 35.

in this article are, according to the Bureau of the Census, "based on the general assumption that there will be no large-scale losses due to war and no widespread epidemic, major economic depression, or similar catastrophe."

POPULATION GROWTH AND
MARRIAGE PROJECTIONS

Population Growth

Population projections are necessarily basic to other types of demographic projections, such as number of marriages and number of households. Population growth depends on births, deaths, and migration. Immigration is no longer the important contributor to U. S. population growth that it was earlier in our history, and the U. S. death rate has been low and relatively steady for some time; these conditions are assumed to be about the same for the projections period. Birth rates in the United States, however, have fluctuated widely in the past

half century and may do so again. After a number of factors were taken into account, the Bureau of the Census made four assumptions concerning future birth rates and four separate projections of population growth. The projections of marriages and households to be discussed in this article are based on the population projections designated as Series B, which estimate that the rate of births per thousand population will rise from about 20 in 1966 to 24.7 in 1980, then drop back to 23.7 in 1985. The projections to 1985 are shown in Chart 1.

Table 1 shows the estimated and projected age distribution of the population at five-year intervals, 1965 to 1985. Fluctuations of births in the past have an important determining influence on the age distribution of the population in the future, and produce some significant changes in the age distribution of the population that are apparent in Table 1. For example, from 1965 to 1985, the number of persons aged 18 to 24 will increase 42 per cent, and the population 25 to 34 years of age will grow 82 per cent. On the other hand, the number of those in the 45- to 54-year-old group will decline about 1.5 per cent. The members of the third group were born in a period of relatively few births; those of the first two groups, when births were more numerous.

Table 1
TOTAL POPULATION OF THE UNITED STATES
IN SELECTED AGE GROUPS,
1965 (ESTIMATED) AND 1970-85 (PROJECTED)
In Millions

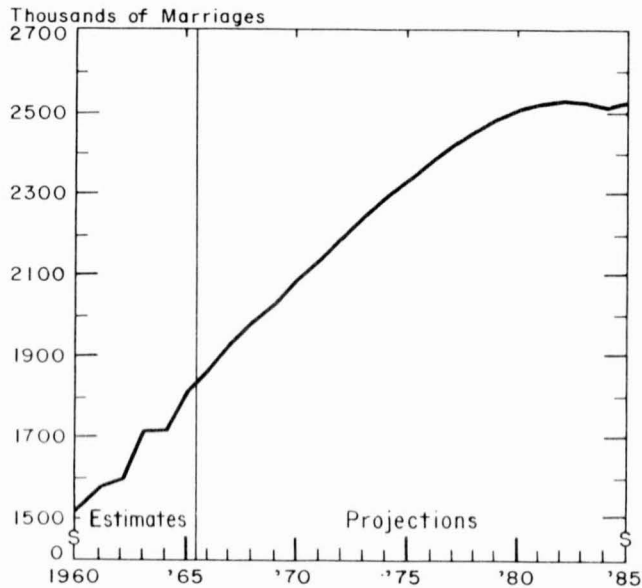
Age	1965	1970	1975	1980	1985
18-24	20.2	24.6	27.5	29.6	28.8
25-34	22.4	25.3	31.4	37.0	40.7
35-44	24.4	23.0	22.5	25.4	31.4
45-54	22.0	23.3	23.5	22.1	21.7
55-64	17.0	18.5	19.8	21.0	21.2
65 and over	18.2	19.6	21.2	23.1	25.0

NOTE: Reference date July 1. Data include armed forces overseas.

SOURCE: U. S., Bureau of the Census, **Current Population Reports: Population Estimates**, "Summary of Demographic Projections," Series P-25, No. 388, March 14, 1968, pp. 7, 40.

HOUSEHOLD GROWTH

Chart 2
ESTIMATES AND PROJECTIONS OF
TOTAL MARRIAGES FOR THE
UNITED STATES, 1960 TO 1985



SOURCE: U. S., Bureau of the Census, *Current Population Reports: Population Estimates, "Summary of Demographic Projections,"* Series P-25, No. 388, March 14, 1968, p. 57.

Marriage Projections

An intermediate stage in moving from population projections to household projections is the projection of marriages. Four different marriage projections series have been published by the Bureau of the Census, all of which are consistent with the Series B population projections. The marriage series designated M-1, which is based on assumptions that generate the most marriages of the four series, approximates the continuation of the recent trend in marriages. Only the M-1 projections are presented here, and the discussion of household projections is based on that series.

The annual number of marriages projected in the M-1 series is shown in Chart 2. Total marriages increase rapidly to about the mid-1970's, then more slowly for the rest of that decade. The annual number of marriages is then projected to level off for the first half of the 1980's.

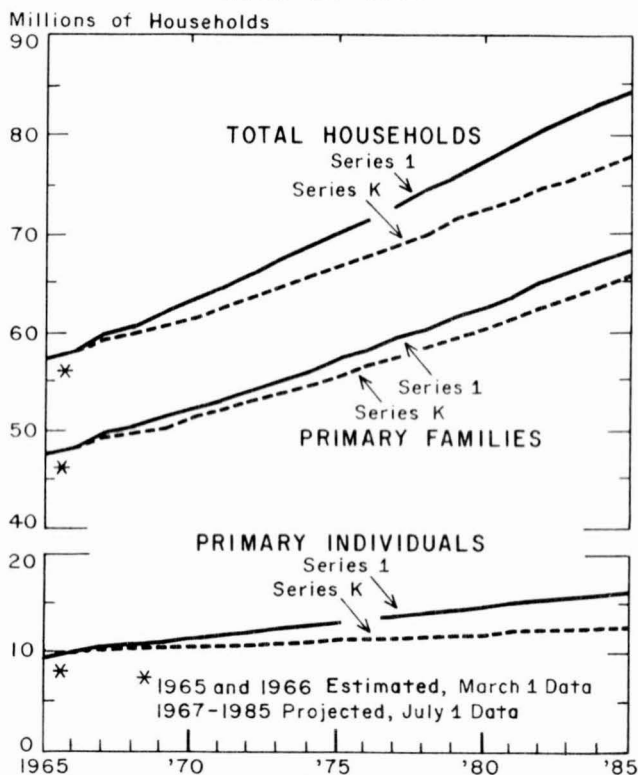
Projections of future household formation rest fundamentally on the growth of population in certain age groups, with modifications based on assumed changes in household headship rates. A headship rate is defined as "the proportion of the population in a given demographic group (e.g., classified by age and sex) who are household heads."¹ One projection of households made by the Bureau of the Census, designated Series K, holds both marriage rates and household headship rates constant for future years. It therefore shows the effect of expected future population change alone. There were 58.1 million households in the United States in 1966; Series K results in a projected 61.7 million in 1970, an increase of 5.8 per cent, and 77.9 million in 1985, an increase of 34.1 per cent.

A second household projection, Series I, also is based on marriage projections Series M-1, but on household assumptions that extrapolate headship rate changes experienced in the period 1957-64. According to this projection of household growth, the total number of households in the United States is expected to advance from 58.1 million in 1966 to 63.3 million in 1970, or nearly 9 per cent; and to 84.4 million in 1985, or 45 per cent.

Year-by-year projections of the total number of households through 1985 for both series appear in Chart 3, and yearly increases in the total are shown in Chart 4. A comparison of the two sets of projections indicates that more of the rise in Series I results from the change in population size and structure than from rising headship rates. Any variations in the marriage and headship assumptions beyond these used in Series I would cause, of course, further differences in the projections of total

¹Richard A. Easterlin, *Population, Labor Force, and Long Swings in Economic Growth: The American Experience*, National Bureau of Economic Research (New York: Columbia University Press, 1968), p. 59.

Chart 3
ESTIMATES AND PROJECTIONS OF THE
NUMBER OF HOUSEHOLDS, TOTAL AND BY
TYPE, FOR THE UNITED STATES,
1965 TO 1985



SOURCE: U. S., Bureau of the Census, *Current Population Reports: Population Estimates, "Projections of the Number of Households and Families, 1967 to 1985,"* Series P-25, No. 394, June 6, 1968, p. 15.

households and of the distribution of households among the various classifications.⁵

Numbers of Households by Type and Age of Head

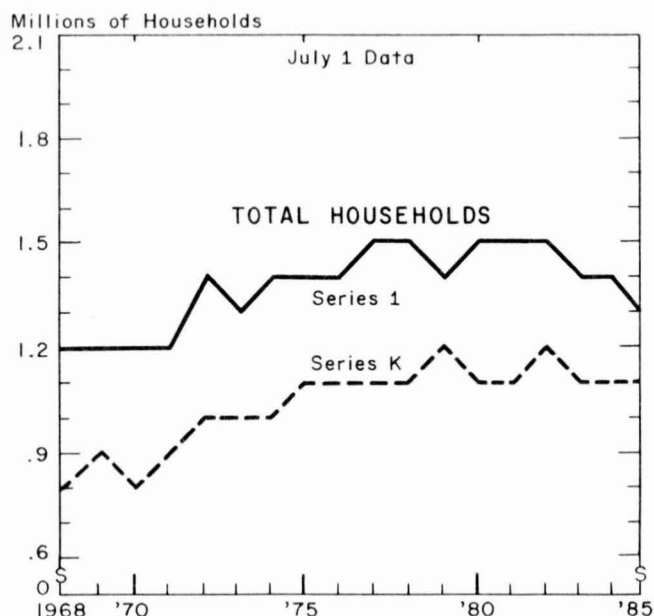
Projections of the number of households are more relevant to the future for housing markets than projections of population growth or the number of marriages, and changes in the number of households by type and by age of head are at least equally pertinent. Only projections from household Series 1 are used in the following discussion of changes in the number of households by type and by age of head.

⁵For a discussion of some of these possibilities, see "Projections of the Number of Households and Families, 1967 to 1985," pp. 8-11.

Type. The projected number of households, classified by type, are shown in Chart 3. Primary family households—composed of a household head and one or more other persons related by blood, marriage, or adoption—numbered 48.2 million in 1966. They are projected to increase about 8 per cent to 1970 and about 41 per cent to 1985. Households headed by primary individuals—a household head of either sex with no relatives in the household—of which there were 9.9 million in 1966, are expected to increase 13 per cent to 1970 and 64 per cent to 1985.

Headship Rates. Series 1 is built upon the assumption that the proportion of the population who are heads of households is increasing, or, as the Bureau of the Census puts it, these projections represent an "expected continuation of the upward trends in household headship rates." In 1965, 78 per cent of all married couples and unmarried persons, aged 20 years and older, had their own households, and there

Chart 4
PROJECTED YEARLY INCREASES IN THE
NUMBER OF HOUSEHOLDS FOR THE
UNITED STATES, 1968 TO 1985



SOURCE: U. S., Bureau of the Census, *Current Population Reports: Population Estimates, "Projections of the Number of Households and Families, 1967 to 1985,"* Series P-25, No. 394, June 6, 1968, p. 15.

was only a negligible difference between those over 65 and those under 65. Series 1 projections for 1985 result in 86 per cent of all married couples and unmarried persons 20 years old and over having their own households; the relative increase was greater for those over 65.

Little of this change in headship rates in the aggregate is attributable to changes in the married couples category. But the projected per cent of unmarried persons with their own households in 1985 is substantially greater than in 1965. For the entire group, the proportion rises from 51 per cent to 64 per cent, with the proportion of those unmarried persons over 65 with their own households showing a larger relative rise than those under 65.

Table 2
NUMBER OF HOUSEHOLDS, SERIES 1,
BY TYPE AND AGE OF HEAD,
FOR THE UNITED STATES,
1966 (ESTIMATED) AND 1970-85 (PROJECTED)
In Millions

Type of Household and Age of Head	1966	1970	1975	1980	1985
All Households					
Total	58.1	63.3	70.0	77.3	84.4
Under 25	3.6	4.8	5.6	6.4	6.5
25-34	10.0	11.8	15.3	18.6	20.8
35-44	11.9	11.7	11.7	13.5	17.0
45-54	11.7	12.1	12.2	11.5	11.3
55-64	9.7	10.6	11.4	12.1	12.2
65 and older	11.2	12.3	13.6	15.2	16.6
Husband-wife Households					
Total	42.1	45.6	50.0	55.0	59.8
Under 25	2.8	3.6	4.1	4.6	4.5
25-34	8.4	9.8	12.4	14.7	16.2
35-44	9.8	9.7	9.7	11.1	13.8
45-54	9.1	9.5	9.6	9.2	9.1
55-64	6.5	7.2	7.8	8.3	8.5
65 and older	5.4	5.8	6.4	7.0	7.6
Other Households					
Total	16.0	17.7	20.0	27.3	24.6
Under 25	0.8	1.2	1.5	1.8	1.9
25-34	1.6	2.0	2.9	3.8	4.5
35-44	2.1	2.0	2.0	2.4	3.2
45-54	2.6	2.7	2.6	2.3	2.2
55-64	3.2	3.4	3.6	3.7	3.7
65 and older	5.8	6.4	7.3	8.2	9.0

NOTE: Reference date July 1, except for 1966, which is March 1.

SOURCE: U. S., Bureau of the Census, *Current Population Reports: Population Estimates, "Summary of Demographic Projections,"* Series P-25, No. 388, March 14, 1968, p. 62.

Table 3
AVERAGE ANNUAL NET CHANGE IN THE
NUMBER OF HOUSEHOLDS, SERIES 1,
BY TYPE AND AGE OF HEAD, FOR THE
UNITED STATES: 1960 TO 1966 (ESTIMATED)
AND 1966 TO 1985 (PROJECTED)
In Thousands

Year and Type of Household	Total	Age of Head (Years)					
		Under 25	25 to 34	35 to 44	45 to 54	55 to 64	65 and Over
All Households							
1960 to 1966	882	177	61	51	176	185	232
1966 to 1970*	1,203	279	412	-40	93	215	244
1970 to 1975	1,340	177	701	3	20	159	278
1975 to 1980	1,461	146	655	358	-145	131	316
1980 to 1985	1,423	23	436	692	-51	19	305
Husband-wife Households							
1960 to 1966	468	122	2	11	158	110	64
1966 to 1970*	807	189	310	-24	80	158	94
1970 to 1975	893	111	521	-2	34	122	106
1975 to 1980	987	87	478	277	-89	104	131
1980 to 1985	967	-6	294	540	-20	33	125
Other Households							
1960 to 1966	414	55	59	40	18	75	168
1966 to 1970*	396	90	102	-16	13	57	150
1970 to 1975	447	66	180	5	-14	37	172
1975 to 1980	474	59	177	81	-56	27	185
1980 to 1985	456	29	142	152	-31	-14	180

*Four and one-third years.

NOTE: Reference date July 1, except for 1960 and 1966, which is March 1.

SOURCE: U. S., Bureau of the Census, *Current Population Reports: Population Estimates, "Projections of the Number of Households and Families, 1967 to 1985,"* Series P-25, No. 394, June 6, 1968, p. 3.

Age of Head. Estimates and projections of the number of households by type and age of head, and of average annual net changes therein, are shown in Tables 2 and 3, respectively. The total number of households in the United States is projected in Series 1 to rise from 58.1 million in 1966 to 63.3 million in 1970 and 84.4 million in 1985. A number of facts about projected household growth may be gained from scanning Table 2's distribution of the total by age, and then by age and type of household. For example, more than half of the total gain to 1985 will be in households with heads aged 34 and younger. In addition, sizable gains in households with heads aged 65 years old and older also will be registered over the 20-year period.

Husband-wife households, though still making up by far the largest share of the total,

will be a slightly smaller proportion of all households in 1985 than in 1966; the "other households" class—mainly, persons living alone—thus will grow relatively. Especially large relative gains in the "other households" class appear in the age group 25 to 34 years and in the 65-years-and-older category. Data on the average yearly changes in numbers by age and type of head are shown in Table 3. The average annual increase in the total number of households in the United States from 1960 to 1966 was 882,000. The highest yearly average rise in this projection period—1,461,000—is recorded for the five years from 1975 to 1980, and is followed by a somewhat smaller annual increase in the final five-year period.

Average annual net household formations, by age of head, throughout this projection period reflect strongly birth patterns that have already occurred, primarily the low rate of births in the depression years of the early 1930's and the high rate of births in the post-war baby boom. Consequently, in the 1970's nearly half of the average yearly increase in all households will be found in households with heads in the 25- to 34-year-old group. Population in the over-65 age group is not affected by fluctuations in births after 1920, and that age group's average annual household projections show greater regularity than do the others. But the relative contribution of this age group, especially in the "other households" class, to net household formation may have special significance for the type of shelter that will be in demand in the projection period. Both households with heads in the younger age groups and elderly persons living alone are more likely to require housing units other than the traditional single-family dwellings.

CONCLUDING COMMENTS

The future pattern of household growth presented in Household Series 1 is based on projected headship rates that are an extrapolation of the rising trend of 1957-64. Since

population growth in the important household-forming age groups can be well established, projected headship rates are very important in estimating the overall growth in the number of households and its impact on the future market for housing. Because of the importance of projected headship rates and of the emphasis on Household Series 1 in this article, it should be remembered that Household Series 1 is an illustrative projection, resting on a particular assumption concerning the movement in headship rates. It may well be that the actual performance of headship rates (and hence household growth) will not be as projected. Alternative projections of household growth—such as Series K (which holds headship rates constant through the projection period) and others prepared by the Bureau of the Census but not presented here—are available.⁶ In any case, although varying headship rates produce significant differences in increases in the number of households, population growth remains the dominant factor. In Household Series 1, growth of the adult population accounts for 71 per cent of the increase in the number of households from 1966 to 1970, and 85 per cent of the increase from 1966 to 1985. Thus, the Bureau of the Census summarizes as follows:

The growth of the adult population in the United States overshadows increases in marriage rates and in household headship rates in its effects on the growth in the number of households.

A number of factors besides new household formation affect the demand for housing. Demand is positively influenced by high and rising levels of employment and income. A deficiency in residential construction in an earlier period, such as the underbuilding of recent years, generally results in a buildup of unsatisfied demand for housing that usually strength-

⁶For an analysis of recent and expected changes in headship rates by an economist who has studied intensively the interrelationships between population, labor force, and household growth; construction activity; and economic growth in general, see Easterlin, especially pp. 47-72.

ens the overall market for shelter for some time. Internal migration may create excess vacancies or actual abandonments of housing units in some areas, while leading to additional building elsewhere and to larger overall demand. In our increasingly affluent society, the market for second homes recently has been growing and probably will continue to do so in the years ahead. At the same time, at the other end of the income scale there is an apparent large deficiency of housing, especially (but not solely) in the central cities.

The two projections of national housing needs that were cited at the beginning of this article estimate total requirements of more than 26 million additional housing units during the next decade, with about half that number attributed to net additional household formation. The remaining increase in requirements comes from several sources: to permit

an increase in vacant units, to compensate for loss of existing standard housing units, and to replace or rehabilitate existing substandard units and those that will become substandard during the period. If the requirements projections are to be fulfilled, the task facing the housing industry is a large one—producing an average of 2.6 million new and rehabilitated housing units per year. From 1960 through 1968, the residential construction industry averaged about 1.4 million new private housing units started per year; mobile homes shipments are now running at about 400,000 per year. But if the proper incentives are present, and if the necessary resources (including financing) are available, it is hoped that the industry will again display the kind of flexibility and elasticity that provided the great surge of production of new residential units from the end of World War II to 1950.

Tenth District Banks in the Federal Funds Market

By J. A. Cacy

COMMERCIAL banks have experienced some far-reaching changes during the postwar years. One important development has been the growth of the Federal funds market—a growth that has been especially evident in the past three years. The Federal funds market is discussed in this article, and the various ways that Tenth District banks are involved in the market are examined.

ROLE OF FEDERAL FUNDS MARKET

The Federal funds market serves the commercial banking industry as a reserve adjustment mechanism. Such a market is needed because banks continuously make and receive cash payments and, during any period, the volume of disbursements and of receipts is seldom in balance. On the contrary, cash flow deficits or surpluses occur. Deficits may be covered by drawing down cash reserves, selling noncash assets, or by borrowing. Surpluses may be used to augment cash reserves, buy assets, or reduce borrowings.

Not all of a bank's cash reserves are available for use at the bank's discretion, however, since banks are required by law to maintain a specified volume of reserves at all times. For members of the Federal Reserve System, the volume of required reserves is determined by the Board of Governors of the System, within limits established by Federal law. For nonmember banks, the requirement is determined by state banking laws and authorities. Banks cannot employ cash reserves to cover current cash flow deficits unless their cash reserves exceed required reserves—that is, unless they have excess reserves. Likewise, only excess cash reserves may be used to buy assets or reduce borrowings.

The actions taken by banks—buying and selling assets, drawing down and building up

excess reserves, borrowing and repaying obligations—in response to cash flow deficits and surpluses are referred to as reserve adjustments or as managing the reserve position.

In making reserve adjustments, members of the Federal Reserve System may borrow from their Federal Reserve Banks. One advantage of this method is that the borrowed funds are “immediately available”—the reserve account of the member bank can be increased on the same day the bank decides reserves are needed. If a bank cannot arrange to have its cash reserves augmented on the day that a cash flow deficit occurs, but must wait for the transaction to be processed through the clearing mechanism, the cash flow deficit will result in a reserve deficit (actual reserves falling below required reserves) unless the bank holds excess reserves. Since interest income is lost when excess reserves are held, access to immediately available funds is important.

As an alternative to obtaining immediately available reserves by borrowing from the Federal Reserve Banks, member banks may borrow in the Federal funds market. Federal funds are immediately available loans made mostly by commercial banks to other commercial banks. Banks that do not hold excess reserves need not depend on credit from their Federal Reserve Banks in making reserve adjustments. They may borrow or buy Federal funds. Also, banks with current cash flow surpluses may earn a return by lending or selling Federal funds rather than holding excess reserves.

Federal funds are immediately available because the Federal Reserve Banks will adjust the reserve accounts of member banks upon receiving proper instructions by wire or other means. The account of the bank borrowing Federal funds is immediately increased and the account of the lending bank is immediately reduced. The location of selling and buying banks makes no difference. Large banks in New York and other financial centers act as brokers and/or dealers in Federal funds.

Any bank wishing to buy or sell may make arrangements with one of these accommodating banks. Or, banks may deal directly with one another. The leading banks in regional financial centers usually serve as accommodators for banks in their areas and, in turn, are linked to the Nation’s major financial centers. Thus, banks anywhere in the Nation may deal in Federal funds. Nonmember banks and nonbanks may and do participate, although a member bank will always be involved either as buyer, seller, or intermediary. Federal funds loans may take various forms, the most common form being the simple unsecured overnight loan. Another frequent arrangement is the repurchase agreement, whereby the lender of Federal funds agrees to purchase securities from the borrower of funds with the condition that the borrower will repurchase the securities at a later date.

CHANGING ROLE OF MARKET

The importance of the Federal funds market as a reserve adjustment mechanism has increased considerably in recent years. Prior to 1965, the market functioned largely as an alternative to Federal Reserve credit for borrowing banks and as an opportunity for selling banks to invest funds that would otherwise be held as excess reserves. This limited role of the market resulted in the Federal funds rate remaining at all times below the discount rate. As buying banks would borrow from their Federal Reserve Banks rather than pay the higher Federal funds rate, there were no bids at rates higher than the discount rate. For borrowing banks, the Federal funds market was a direct substitute for Reserve Bank credits.

Even prior to 1965, however, some banks that purchased Federal funds probably would not have borrowed from the Federal Reserve Bank, but would have sold assets in order to cover reserve deficits. By the same token, some banks sold funds rather than purchased other assets.

Table 1
GROSS SALES AND GROSS PURCHASES OF FEDERAL FUNDS
BY FEDERAL RESERVE DISTRICTS

December 31, 1965, and December 31, 1968

	Sales				Purchases			
	Dec. 31, 1965	Dec. 31, 1968			Dec. 31, 1965	Dec. 31, 1968		
	(In Millions of Dollars)	(In Millions of Dollars)	Per Cent Change from Dec. 31, 1965	Per Cent of Member Bank Total	(In Millions of Dollars)	(In Millions of Dollars)	Per Cent Change from Dec. 31, 1965	Per Cent of Member Bank Total
Member Banks								
Boston	106	247	134	4	150	306	105	4
New York	572	1,108	94	20	1,281	2,417	89	33
Philadelphia	154	405	163	7	64	340	431	5
Cleveland	199	507	156	9	81	407	402	6
Richmond	95	237	150	4	29	221	668	3
Atlanta	126	372	197	7	51	302	496	4
Chicago	279	862	210	16	294	957	226	13
St. Louis	51	236	363	4	93	300	222	4
Minneapolis	18	89	396	2	16	146	826	2
Kansas City	74	254	245	5	52	123	136	2
Dallas	91	368	307	7	198	607	207	8
San Francisco	99	866	774	16	93	1,190	1,177	16
Total Member Banks	1,861	5,551	198	100	2,401	7,316	205	100
Nonmember Banks	242	1,196	395		39	156	297	
Total Commercial Banks	2,103	6,747	221		2,440	7,472	206	

SOURCE: Board of Governors of the Federal Reserve System and Federal Deposit Insurance Corporation.

At any rate, the market has changed considerably since 1965. It has developed into a full-fledged mechanism for reserve adjustment purposes. The close link with member bank borrowing from Federal Reserve Banks and with the discount rate has been broken. The Federal funds rate has been above the discount rate most of the time since 1965. Buying banks view the market as a primary source of funds for covering current cash flow deficits or replenishing excess reserves. Selling banks, as a whole, view Federal funds as one type of secondary reserve asset rather than as funds that would otherwise be held as excess reserves.

Along with these qualitative changes, the growth of the volume of Federal funds trans-

actions has been especially marked in the past few years.¹ The total amount borrowed in the Federal funds market by commercial banks increased from \$2.4 billion in December 1965 to \$7.5 billion in December 1968. (See Table 1.) Federal funds sold by banks totaled \$6.7 billion in December 1968, compared with \$2.1 billion in 1965. Note that almost all borrowings are accounted for by member banks, while

¹Caution must be exercised when drawing conclusions from available Federal funds data. In the first place, the information on the Federal funds transactions of member and nonmember banks is available only for the June and December call dates starting with December 1965. Second, prior to June 1967, the reported figures excluded transactions occurring under repurchase agreements. Finally, the call report figures are probably misleading because banks traditionally attempt to avoid reporting a borrowed position.

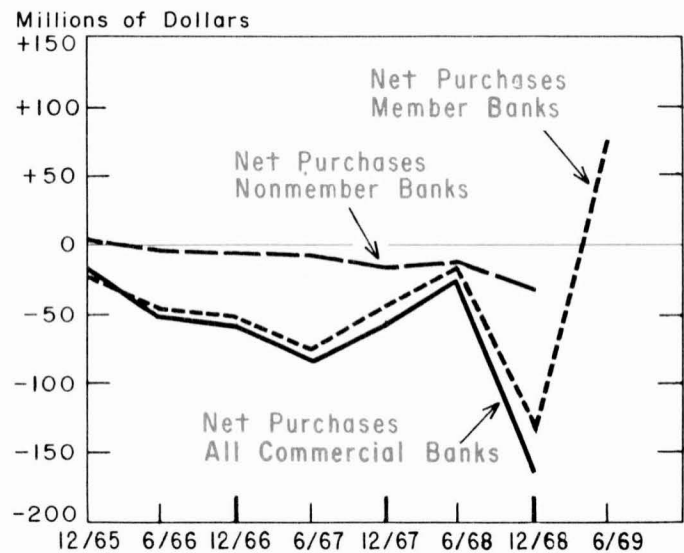
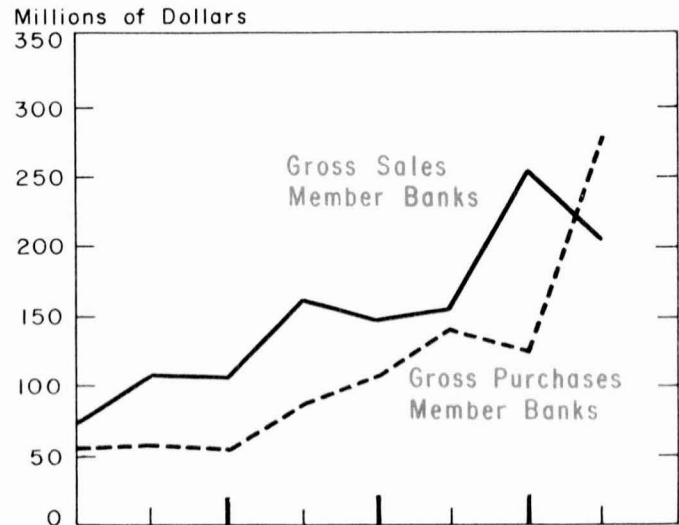
nonmember banks account for a significant portion of the lending. Also, note that on each of the dates for which data are available, commercial banks as a group were net borrowers of Federal funds—that is, gross borrowing exceeded gross lending. In other words, those nonbanks that participate in the market are net sellers to the banking system.

Federal funds activity accelerated sharply in the first half of 1969, as shown by the figures on weekly reporting banks. On December 31, 1968, purchases of funds by these banks totaled \$7.0 billion. By July 2, 1969, purchases had increased to \$12.9 billion. On the latter date, sales totaled \$5.4 billion, compared with \$3.8 billion on December 31, 1968.

The recent growth in the Federal funds market has been a widespread phenomenon, affecting all sections of the Nation. (See Table 1.) Over the 3-year period from December 1965 to December 1968, both sales and purchases of member banks increased most rapidly in the San Francisco and Minneapolis Federal Reserve Districts, while growth was slowest in the Boston and New York Districts. At Tenth District member banks, loans of Federal funds increased from \$74 million in 1965 to \$254 million in 1968, or 245 per cent—one of the more rapid gains. Borrowings advanced from \$52 million to \$123 million, or an increase of 136 per cent—one of the smaller advances.

As shown by Chart 1, purchases at Tenth District member banks advanced sharply in the first half of 1969 and sales declined, placing purchases above sales for the first time on record. This development is confirmed by other data. Starting with the week ending September 18, 1968, member banks began reporting their daily Federal funds transactions to the Federal Reserve Bank of Kansas City. These reports show that gross purchases of Federal funds by District banks began increasing in early January 1969, while gross sales declined.

Chart 1
TENTH DISTRICT FEDERAL FUNDS
TRANSACTIONS
December 1965—June 1969



SOURCE: Board of Governors of the Federal Reserve System and Federal Deposit Insurance Corporation.

MEASURES OF MARKET ACTIVITY

The figures on gross purchases and sales in Table 1 and Chart 1 include transactions undertaken by accommodating banks that stand

ready to buy and sell funds in accordance with arrangements. These banks commonly record both sales and purchases during each week. Offsetting sales and purchases are referred to as two-way transactions, and gross sales or purchases less two-way transactions are referred to as "net Federal funds sold or purchased." The difference between gross sales and gross purchases is referred to simply as "net sales or purchases of Federal funds."

To illustrate, suppose that in each week during some specified period, Bank A buys a daily average of \$500,000 and sells an average of \$400,000, while Bank B sells \$200,000 and makes no purchases. For these two banks, the various measures of Federal funds activity would be as follows:

	<u>Bank A</u>	<u>Bank B</u>	<u>Total</u>
	(In thousands of dollars)		
Gross Federal funds sold	400	200	600
Gross Federal funds purchased	500	0	500
Net Federal funds sold	0	200	200
Net Federal funds purchased	100	0	100
Net sales (+) or purchases (-) of Federal funds	- 100	+ 200	+ 100
Two-way transactions	400	0	400

The net Federal funds figures are intended to measure the gross amounts that would have been reported if banks did not undertake two-way transactions.

LARGE BANKS DOMINATE MARKET

Most of the activity in the Federal funds market is accounted for by three Federal Reserve Districts. Thus, in December 1968, 62 per cent of gross purchases of Federal funds undertaken by member banks were made by member banks in the New York, Chicago, and

San Francisco Districts. Furthermore, banks in these three Districts are more important as gross buyers of Federal funds than in terms of total deposits, holding only 55 per cent of all member bank deposits. One reason for this is that the largest member banks are located in these Districts. Banks in these three Districts having deposits in excess of \$500 million hold 70 per cent of total deposits held by all member banks in this size group. The importance of large banks in the Federal funds market is even greater than their deposit size would indicate.

In the Tenth District, the largest banks account for most of the activity in the Federal funds market. From September 1968 through June 1969, the largest banks—those with deposits exceeding \$100 million—accounted for between 85 and 90 per cent of the dollar volume of gross purchases of Federal funds, of net purchases of Federal funds, and of two-way transactions. (See Table 2.) About one-half of gross sales of Federal funds were accounted for by the largest banks. These percentages, somewhat surprising considering that these largest District banks account for only 42 per cent of total deposits, indicate the extent to which large banks dominate most aspects of the Federal funds market. In one important aspect, however, the smaller banks participate according to their importance in terms of total deposits. Except for banks with deposits of less than \$10 million, the smaller District member banks account for about the same percentage of total deposits as of net Federal funds sold, that is, sales of funds after adjusting for two-way transactions. (See Table 2.) The largest banks, on the other hand, were slightly less important in terms of net sales of Federal funds than in terms of total deposits.

NET SELLERS AND NET BUYERS

Judging from call report data, member banks in some Federal Reserve Districts are typically net buyers or net sellers of Federal funds,

Table 2
FEDERAL FUNDS TRANSACTIONS BY BANK SIZE AS PER CENT OF DISTRICT TOTAL
TENTH DISTRICT MEMBER BANKS

September 1968 to June 1969

	Daily Average for District (Millions of Dollars)	Deposit Size in Millions of Dollars					
		Under \$5	\$5-\$10	\$10-\$25	\$25-\$50	\$50-\$100	Over \$100
		Per Cent of District					
Gross Federal funds sold	222.8	1.1	5.8	17.9	12.6	11.6	50.9
Gross Federal funds purchased	197.7	.1	.5	3.4	5.0	5.5	85.6
Net Federal funds sold	170.6	1.4	7.5	22.1	15.6	14.3	39.1
Net Federal funds purchased	145.5	.1	.5	3.1	5.8	6.4	84.1
Two-way transactions	52.2	.1	.3	4.2	2.9	2.8	90.0
Total deposits	14,331.5	6.7	12.3	19.0	10.2	9.4	42.4
		Daily Average in Millions of Dollars					
Net sales (+) or purchases (-)	+25.0	+2.3	+12.1	+33.1	+18.2	+15.0	-55.7

SOURCE: Federal Reserve Bank of Kansas City.

while in other Districts there is no systematic pattern. The New York and Dallas District banks were net buyers on each of the seven call dates from December 1965 through December 1968, while banks in the San Francisco, Chicago, and St. Louis Districts were net buyers on six dates. The Kansas City and Cleveland Districts were net sellers on all of the dates, while Richmond and Atlanta were net sellers on each date except one. Boston had net sales on four dates, Philadelphia on five, and Minneapolis on two.

The net Federal funds position of a District depends to some extent on the structure of banking in the District, since large banks tend to be net buyers and small banks net sellers. Thus, in the New York and San Francisco Districts a relatively large percentage of total deposits is held by very large banks, while in the Atlanta and Kansas City Districts the larger banks account for a relatively small proportion of total deposits. The banking structure, however, is not the only determinant of the net Federal funds position of the different Districts. For example, the Dallas District is typically a net borrower and Cleveland

a net lender, even though deposits are distributed much more evenly among banks in the Dallas than in the Cleveland District. Even so, the flow from small to large banks accounts for a large portion of the total Federal funds activity. The size and importance of the market depends to a significant degree on the fact that a relatively large number of small banks loan Federal funds to a relatively small number of large banks.

Reflecting the structure of the industry in this area, Tenth District banks as a group are usually net sellers of Federal funds. Even in the first half of 1969, when District member banks as a group were net buyers of Federal funds, 76 per cent of the banks that participated in the market were net sellers. For the September 1968-December 1968 period, 78 per cent maintained a net lending position. (See Table 3.) Most of the banks that were sellers in the September-December period maintained this position in the January 1969-June 1969 period. By the same token, only a few of the net purchasers of the earlier period became net lenders in the January-June period. Some banks that did not participate in the market

in the September-December period did so in the January-June period. Most of these became net sellers.

It may be noted that a majority of Tenth District member banks—60 per cent for the entire September-June period—did not participate in the Federal funds market in any way. (See Table 3.) Furthermore, of those that participated, a significant number—43 per cent—made no purchases, entering the market on the selling side only. Although almost twice as many banks participated in the Federal funds market during the September-June period as borrowed at the Federal Reserve Bank, the number of banks that borrowed from the Federal Reserve Bank exceeded considerably the number of banks that were net buyers of Federal funds.

Both the low degree of market participation and the large percentage of sellers among participants reflect the fact that most District member banks are very small. Most small banks do not undertake Federal funds transactions and most of those that do are net sellers. For the September-June period, only 15 per cent of member banks with deposits of less than \$5 million and 36 per cent of the

banks in the \$5-\$10 million deposit category participated in the market. (See Table 3.) These two categories of banks account for 69 per cent of District member banks. A large majority of banks with total deposits between \$10 million and \$50 million participated in the market at some time during each of the periods studied, while all banks with deposits of \$50 million or more entered the market at least once in each period.

Small banks that participate in the market are much more likely to be net sellers than large banks. Except for banks with deposits of \$100 million or more, a large percentage of the banks in each of the size categories that participated in the market were net sellers of funds in both the September-December and the January-June periods. During the September-December period, a slight majority of the largest District member banks were net sellers of funds, but for the January-June period and for the entire period most of the \$100 million banks were net buyers. For each of the periods examined, most banks in the smaller size categories (with deposits of \$25 million or less) that participated in the funds market made no purchases, whereas a large majority of banks

Table 3
NUMBER OF BANKS PARTICIPATING IN FEDERAL FUNDS MARKET
AS PER CENT OF TOTAL MEMBER BANKS — TENTH FEDERAL RESERVE DISTRICT
September 1968 to June 1969

Size of Bank (In millions of dollars)	Per Cent of Total Number of Member Banks in District		Per Cent of Member Banks with Federal Funds Transactions		
	Borrowers from F.R.B.	With Federal Funds Transactions	Net Sellers	Sellers with no Purchases	Net Buyers
Under \$5	11.2	14.9	75.0	58.3	20.8
\$5 to \$10	17.1	35.7	84.4	50.0	14.4
\$10 to \$25	30.1	64.8	84.2	51.8	14.9
\$25 to \$50	45.5	88.6	79.5	23.1	20.5
\$50 to \$100	75.0	100.0	70.0	5.0	30.0
Over \$100	82.6	100.0	39.1	0	60.9
All Banks	22.2	39.9	78.4	42.5	20.4

SOURCE: Federal Reserve Bank of Kansas City.

in the \$25-\$100 million category, and all of the largest banks, entered the market on both the selling and buying side.

CHARACTERISTICS OF PARTICIPATING BANKS

Member banks that participate in the Federal funds market differ in other important ways from banks that do not participate. This was true, at least, in the Tenth Federal Reserve District during the September-June period. Participating banks held a lower volume of excess reserves and of correspondent balances, and borrowed more from their Federal Reserve Banks. For any size group examined, the ratios of excess reserves to required reserves and of correspondent balances to required reserves were smaller for participating banks. (See Table 4.) The ratio of amounts borrowed from the Federal Reserve Bank to required reserves was greater for participating banks for each of the size groups, except one. For banks in the \$5-\$10 million deposit category, this ratio was the same for participating as for nonparticipating banks.

Among banks that participate in the market, there seems to be little systematic difference between net sellers and net buyers with regard to holding correspondent balances and excess reserves. Compared with nonparticipants, net sellers as well as net buyers held lower volumes of excess reserves and correspondent balances.

As might be expected, net buyers of funds borrowed more from the Federal Reserve Bank than net sellers. Nevertheless, even net sellers obtained more Federal Reserve credit than banks that did not participate in the market. Among net sellers, there was some tendency for those banks that enter the market on the selling side only to hold more correspondent balances and excess reserves and to borrow less from the Federal Reserve Bank than those banks that both buy and sell Federal funds.

The fact that banks participating in the Federal funds market hold a smaller volume of correspondent balances may indicate that cor-

respondent balances are used by participating banks to lend in the Federal funds market. As one test of this possibility, consider whether or not the net sales of Federal funds by participating banks plus the correspondent balances of these banks is equal to the correspondent balances of nonparticipating banks. This is actually true for the very small banks during the September-June period. For banks with total deposits of less than \$5 million, the ratio of net sales of Federal funds plus correspondent balances to required reserves for participating banks was practically the same as the ratio of correspondent balances to required reserves for nonparticipants. For all other size groups examined, however, participating banks held more in net sales of Federal funds and correspondent balances combined than nonparticipating banks held in correspondent balances alone. For net sellers, especially non-purchasers, this tendency was quite pronounced.

An additional indication of the extent to which funds that would otherwise be held in correspondent balances are sold as Federal funds may be found by comparing the changes in these accounts in the January-June period with the September-December period. District member banks in each of the size groups experienced decreases in net sales of Federal funds. (Banks with deposits in excess of \$100 million were net sellers in the September-December period and net buyers in the January-June period.) At the same time, declines occurred in the correspondent balances of the smaller banks and in demand balances due banks of the larger banks. For banks with deposits in excess of \$100 million, for example, the decline in demand balances due banks amounted to around one-half of the change in net sales of Federal funds.

The analysis of the preceding paragraphs points to the conclusion that Federal funds lending results in some reduction in correspondent balances, but the reduction is not as large as the volume of net Federal funds sold.

Table 4
SELECTED RATIOS BY BANK SIZE — TENTH DISTRICT MEMBER BANKS
September 1968—June 1969

Size of Bank in Millions of Dollars	Without Federal Funds Transactions	With Federal Funds Transactions	Net Buyers	Net Sellers	No Purchases
	<u>Correspondent Balances as Per Cent of Required Reserves</u>				
Less than \$5	136.7	116.5	118.0	116.0	116.9
\$5 to \$10	108.2	95.6	107.1	94.0	98.4
\$10 to \$25	100.0	93.7	93.0	93.9	105.9
\$25 to \$50	87.7	84.5	89.7	83.2	78.4
\$50 to \$100	—	75.1	76.9	74.3	127.9
Over \$100	—	47.3	44.2	52.1	—
	<u>Excess Reserves as Per Cent of Required Reserves</u>				
Less than \$5	13.2	10.2	11.8	9.7	10.4
\$5 to \$10	7.9	5.9	8.6	5.4	6.1
\$10 to \$25	7.1	3.7	2.0	4.0	4.3
\$25 to \$50	4.9	1.8	1.3	1.9	2.2
\$50 to \$100	—	.8	.9	.8	—
Over \$100	—	.6	.4	1.0	—
	<u>Borrowings from Federal Reserve Banks as Per Cent of Required Reserves</u>				
Less than \$5	.8	1.6	2.1	1.5	1.6
\$5 to \$10	1.0	1.0	2.8	.8	.8
\$10 to \$25	1.4	2.2	3.8	2.0	.7
\$25 to \$50	.6	2.5	3.5	2.2	1.2
\$50 to \$100	—	5.1	6.3	4.6	—
Over \$100	—	4.9	5.5	4.0	—
	<u>Time and Savings Deposits as Per Cent of Total Deposits</u>				
Less than \$5	41.7	47.2	46.2	48.2	48.7
\$5 to \$10	48.3	48.4	52.9	47.8	46.3
\$10 to \$25	50.6	48.3	49.2	48.1	47.2
\$25 to \$50	50.5	48.0	49.1	47.8	51.4
\$50 to \$100	—	45.2	46.4	44.6	—
Over \$100	—	39.5	40.2	38.4	—
	<u>Loans (Excluding Federal Funds Sold) as Per Cent of Total Deposits</u>				
Less than \$5	54.8	56.3	57.0	56.8	n.a.
\$5 to \$10	53.6	56.7	64.1	55.6	n.a.
\$10 to \$25	54.2	53.2	58.4	52.1	n.a.
\$25 to \$50	58.3	55.7	63.0	53.5	n.a.
\$50 to \$100	—	56.0	58.2	55.1	—
Over \$100	—	59.8	62.7	53.8	—

n.a. not available.

SOURCE: Federal Reserve Bank of Kansas City.

A similar conclusion is warranted in connection with excess reserves. Although participating banks hold a lower volume of excess reserves than nonparticipating banks, it is clear that participating banks are not merely placing funds in Federal funds loans that the nonparticipants are holding in excess reserves. The ratio of the sum of excess reserves plus net

sales of funds to required reserves for participating banks is considerably larger than the ratio of excess reserves to required reserves for nonparticipating banks.

The differences between participating and nonparticipating banks suggest that banks that participate in the Federal funds market may be somewhat more aggressive and less con-

servative than nonparticipants. That the funds loaned by the participating banks are not entirely offset by lower holdings of excess reserves and correspondent balances suggests that participating in the Federal funds market is a part of a broader behavior pattern—a pattern that emphasizes the utilization of profitable outlets for lending and borrowing. This suggestion is strengthened by the finding that participating banks tend to borrow more from their Federal Reserve Banks.

ECONOMIC IMPACT OF THE FEDERAL FUNDS MARKET

Like other reserve adjustment markets, the Federal funds market facilitates the distribution of reserves among banks, and thereby contributes to the efficient allocation of bank credit in the economy. Furthermore, the workings of the Federal funds market tend to encourage bank credit expansion. This potential impact on bank credit may be offset by the Federal Reserve System. If the Federal Reserve does not offset the impact of the Federal funds market on the volume of credit extended by the banking industry, the operation of the Federal funds market probably results in an expansion of bank credit in part at least at the expense of other types of credit. In this context, the Federal funds market is a part of the set of innovations which the banking system has evolved in the past decade that has been instrumental in enhancing the position of the banking industry as a supplier of credit in the economy.

The Federal funds market has a dimension not fully encompassed by the concept of a reserve adjustment mechanism. This additional dimension arises from the fact that, over extended time periods, some banks are net buyers of Federal funds while others are net sellers. It was noted that the allocation of reserves is affected as banks use the market to adjust their reserve positions. Allocational effects of reserve adjustments, however, are usually

thought of as temporary, as the direction of credit flows changes and different banks experience cash flow deficits and surpluses in turn. However, when some banks adopt a permanent net borrowing and others a net lending position, the Federal funds market becomes involved in a more basic way in the allocation of credit in the economy.

In general, the direction of any flow of funds reflects credit demands. Credit flows to areas of relatively strong demand from areas of relatively weak demand. In the case of Federal funds, however, the structure of the banking industry affects the direction of fund movements. That is, small banks tend to be sellers of funds and large banks tend to be buyers.

The flow of Federal funds from small to large banks is not necessarily a reflection of relative credit demands. It does not necessarily mean that the demand for credit at small banks relative to the resources of small banks is less than at larger banks. Small banks, to some extent because they are small, have traditionally held relatively larger volumes of cash and secondary reserves, so they would naturally be expected to sell funds. To some extent, Federal funds loans are simply another secondary reserve instrument which smaller banks have employed as they lowered their excess reserves in response to the high and rising interest rate levels in the postwar period. Smaller banks would undoubtedly have placed some of their Federal funds loans into other secondary reserve instruments if the funds market had not been developed.

An important question with regard to the small bank-large bank flow is the impact on the availability of credit to the local customers of small banks. As long as Federal funds loans serve as an alternative to cash or secondary reserves, there will be no impact. But it is possible that, in some cases, banks place resources into Federal funds loans that would otherwise be used to make loans to local customers or to purchase locally issued securities.

The data examined here do not provide a basis for a straightforward comment on this matter. It was earlier stated that the difference between participating and nonparticipating banks with regard to reserve position management suggests that participating banks may be relatively aggressive and alert to profitable opportunities. If this is true, it is reasonable to expect that this type of bank would be especially concerned to develop and maintain local

business. However, Table 4 shows that, for some size groups, especially the \$25-\$50 million deposit category, nonparticipating banks hold more loans relative to deposits than participants. In other size groups, especially the smaller categories, the opposite holds. Additional research is under way that may allow more definite statements on this question. The results of this research will appear in the *Monthly Review* in the first part of 1970.