

FEDERAL RESERVE BANK OF RICHMOND

MONTHLY REVIEW

*Income Distribution and Its
Measurement*

The All-Important Consumer

*Comparative Asset Structures of
Selected Financial Institutions*



OCTOBER 1971

Income Distribution and Its Measurement

PART II: DISTRIBUTION AMONG FAMILIES

This article is the second of a two-part series on the subject of income distribution. The first part, which appeared in August, discussed the *functional* distribution of income, i.e., the distribution of the national income among the factors of production that combine to produce it. The present article deals with the *size* distribution of income, i.e., the distribution of income among families classified by intervals of income levels.

Questions about the relative income positions of the rich and the poor cannot be answered by functional distribution analysis alone. The association of labor income with the poor and capital income with the rich is of doubtful validity. Today, labor income includes the salaries of high-paid corporation executives as well as the wages of unskilled labor, and capital income includes the dividend and interest income received by many persons of modest circumstances as well as by millionaire capitalists.

To determine the extent of equality or inequality in the distribution of income, analysts must examine the size distribution. Information on size distribution suggests the extent to which the benefits of economic growth are shared among various income-size groups in the economy. Study of the size distribution is useful also in evaluating the success of government policies designed to modify the income distribution. Finally, study of the size distribution helps statisticians to isolate and specify the personal, social, and economic factors contributing to poverty. The paragraphs that follow describe the size distribution of income in the United States and discuss some of the techniques employed in its measurement.

CENSUS INCOME DATA AND DEFINITIONS

The most complete data on income distribution are compiled by the Census Bureau. The data are obtained from answers to a series of questions about income asked in March of each year in connection with the Census Bureau's monthly Current Population Survey (CPS). The CPS consists of scientifically selected samples of approximately 50,000 households drawn from across the nation.

The income concept employed by the Census Bureau is total money income before payment of personal income taxes. Total income includes money earnings, money gifts, and government transfer pay-

ments such as unemployment compensation, social security pensions, and welfare payments; it excludes nonmonetary benefits such as free medical care, income in kind, services of owner-occupied houses as well as capital gains and retained corporation profits. The latter two items augment the wealth of stockholders but are not counted as current income.

The Census Bureau classifies income-receiving units either as *families* or as *unrelated individuals* (sometimes called one-person families). A family is defined as a group of two or more persons living together and related by blood, marriage, or adoption. Unrelated individuals live alone or as boarders in other people's homes. Their number is small relative to the number of people living in family groups and the size distribution of their income differs from that of families. Only the distribution of family incomes is discussed in this article.

INCOME DISTRIBUTION IN 1969 AND 1970

Chart I shows the distribution of total money income among U. S. families in 1969, the latest year for which complete figures are available. The chart indicates the percentage of all families included in each income bracket as well as the percentage of total income received by families in each bracket. For example, the poorest 4.7% of the families—those whose incomes were in the two brackets below \$2,000—received about one half of one percent of the income. At the other end of the scale, the 3.6% of all families with incomes of \$25,000 and above received 12.5% of total family income, which averages about \$35,786 per family at the upper end of the scale. About 20% of the families had incomes below, and 80% above, the \$5,000 level in 1969. Approximately 54% were below the \$10,000 income level and slightly less than 20% of the families had incomes above \$15,000. Almost 61% of American families received incomes between \$5,000 and \$15,000.

What was the income of the typical or middle family in 1969? The *median* figure of \$9,433 is probably more representative of the income of the typical family than is the *mean* income figure of \$10,577. The mean or arithmetic average income is computed by dividing total family income by the number of families. The median figure separates the

income recipients into two equal parts, that is, half of the families receive more and half receive less than the median income. When the income distribution is skewed to the right, as is the distribution shown in Chart I, the mean is disproportionately influenced by the few very high incomes at the upper end of the distribution, and therefore is not as good a measure of the center of the distribution as is the median.

The data in Chart I can be condensed by dividing the families into fifths or quintiles and showing the percent of income going to each fifth, as follows.

Income Rank	% of Total Family Income
Lowest Quintile	5.6
Second Quintile	12.3
Third Quintile	17.6
Fourth Quintile	23.4
Highest Quintile	41.0
	<hr/>
	100.0
Top Five Percent	14.7

The 3rd and 4th quintiles, embracing 40% of the families, received 41% of total income. The two lowest quintiles, covering another 40% of the population, received only about 18% of the income. The proportions of income going to the top 20% and top 5% of families, however, were approximately double and triple, respectively, the proportions of families in each of those classifications.

The income distribution of the total of all families shown in Chart I conceals diverse distribution pat-

terns of particular subgroups of families comprising the total. Preliminary 1970 data recently released by the Census Bureau show how income was distributed in that year within four of these subgroupings, namely families classified by race and farm-nonfarm residence. This information, presented in Table 1, reveals that the distribution patterns of the incomes of white and nonfarm families differ sharply from those of Negro and farm families.

Farm incomes are almost 30% lower on the average than nonfarm incomes, although the difference in the distribution of economic welfare among farm and nonfarm families is probably not as great as indicated in the table, since farm residents receive real income in the form of goods produced and consumed on the farm but not counted in the income data. The median income of farm families is about \$3,230 below that of nonfarm families. The proportion of farm families concentrated in the lower three income brackets is larger and the proportion concentrated in the top two brackets is smaller than is the case with nonfarm families.

The difference between the income distribution of white and black families is even more pronounced than the differential between farm and nonfarm families. The median family income of blacks was only 63% of the median income of white families in 1970. The generally lower level of Negro incomes also shows up in the relative concentration of percentages in the lowest income bracket. In 1970 only 7.5% of white families had incomes below \$3,000

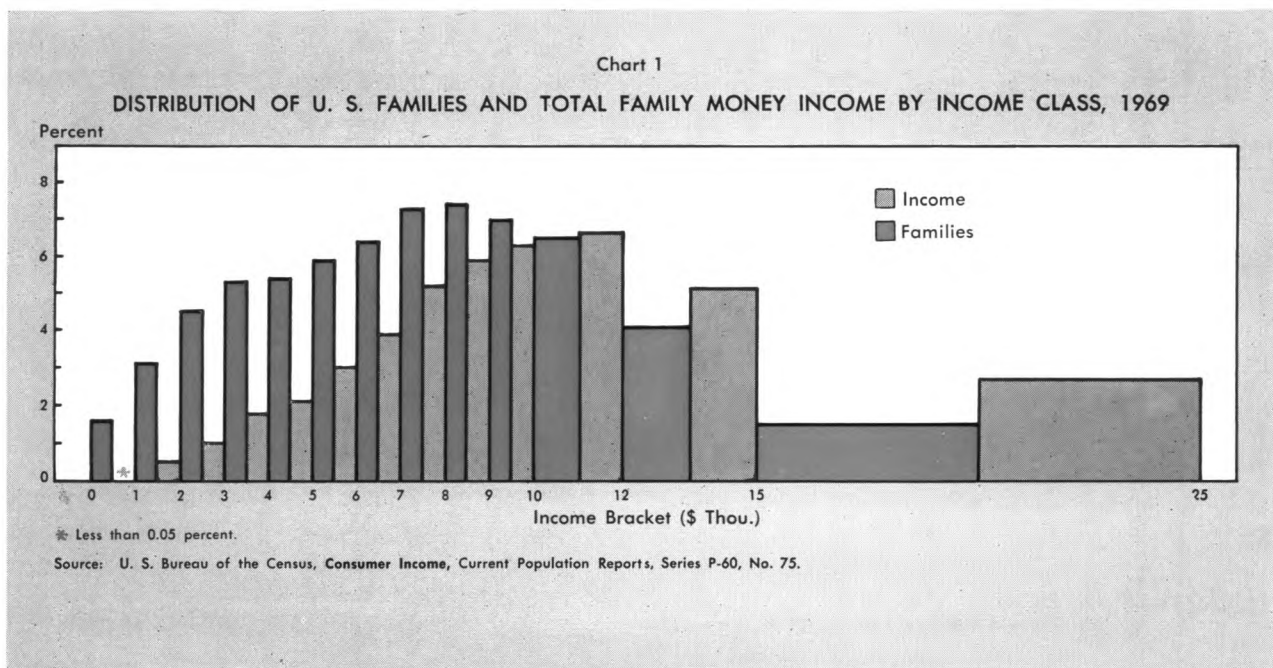


Table 1

**DISTRIBUTION AMONG INCOME BRACKETS
OF U. S. FAMILIES CLASSIFIED BY
RACE AND FARM-NONFARM RESIDENCE, 1971**

(In percentages)

Income Class	All Families	White	Negro	Non-Farm	Farm
Under \$3,000	8.9	7.5	21.1	8.3	19.9
\$ 3,000 - 4,999	10.4	9.5	17.4	10.0	16.3
\$ 5,000 - 6,999	11.8	11.3	17.0	11.7	15.9
\$ 7,000 - 9,999	19.9	20.1	18.1	20.0	18.5
\$10,000 - 14,999	26.8	27.9	16.9	27.2	17.5
\$15,000 and over	22.3	23.7	9.5	22.8	12.2
Total	100.0	100.0	100.0	100.0	100.0
Median Income	\$ 9,867	\$10,236	\$6,279	\$10,006	\$6,773
Mean Income	\$11,106	\$11,495	\$7,442	\$11,254	\$7,983

Source: U. S. Bureau of the Census, **Consumer Income**, Current Population Reports, Series P-60, No. 78.

whereas 21.1% of black families received incomes less than this figure. At the upper end of the scale the picture is similar. Only 9.5% of black families could claim incomes of \$15,000 or more, compared to nearly 24% of white families. The difference between black and white incomes is perhaps most forcefully demonstrated by comparing income classes of greatest concentration. The largest percentage of Negro families is concentrated in the lowest (under \$3,000) income class shown in Table 1, whereas the greatest percentage of white families is concentrated in the next to highest (\$10,000-\$14,999) income category.

The income position of black families relative to white families, although low, has nevertheless improved over the past two decades. Chart II indicates that the median income of non-white families has increased from 51% of the median income of white families in 1947 to 64% in 1970.¹ The relative income position of non-white families has not shown steady progress over this period, however. The chart indicates that most of the gains have occurred in years of low or falling unemployment.

Several factors account for the tendency of black incomes to improve relative to white incomes in years of prosperity. First, the black unemployment rate tends to decline more sharply than the white rate in periods of labor market tightness. The unemployment rate of blacks is more sensitive than that of whites to changes in the overall unemploy-

¹ Income data for all non-white families was used in computing the series depicted in Chart II because separate data on Negro incomes is not available for years prior to 1964. Negro families account for approximately 90% of all non-white families, the remainder being Indians, Orientals, Mexican-Americans, and others.

ment rate because a greater proportion of black than white workers are unskilled and inexperienced. Since employers tend to concentrate their hiring and firing among the least skilled and least experienced workers, it follows that the Negro unemployment rate is more responsive to a general tightening of the labor market than is the white unemployment rate. Then too, a tight labor market tends to erode discriminatory barriers, thereby enabling blacks to participate in better-paying jobs. Finally, the shortage of skilled workers encourages employers to expand their training programs for the unskilled and the inexperienced and to upgrade employees. This training and occupational upgrading raises the productivity of disadvantaged workers and helps to reduce black-white income differentials.

DISPERSION OF INCOME

The distributions shown in Chart I and Table 1 display two important characteristics. First, the distributions are *disperse*, that is, family incomes are not identical. Second, the distributions are *skewed*, that is, incomes are not symmetrically distributed about the mean. Explanations of the income distribution must account for these two attributes. Specifically, analysts should be able to identify the sources of dispersion and specify the factors that skew the distribution.

Sources of Income Dispersion Three main explanations of the source of income differences have been advanced. One explanation holds that disparities arise from the operation of natural forces, such as differences in ability, luck, and other chance factors (illness, accidents, etc.). Supposedly, these natural forces are completely random and outside human control.

A second view claims that income differences are a by-product of rational human choice. According to this view, individuals differ in their preferences for work vs. leisure, risky vs. safe ventures, and immediate vs. deferred money earnings. The economic decisions that individuals make reflect their differing preferences and influence their incomes. Income differences arise because some people choose to work longer hours than others. Then too, income differences among gamblers and risk-takers are much greater than income differences among risk-avoiders. Individuals' rational choices of occupation also result in unequal incomes. Consider an individual choosing among several alternative occupations. The present discounted value of the lifetime earning stream associated with each occupation considered by the individual must be equal at the time he makes his

choice. He will exclude from his range of choice income streams with lower present values. Although the present values of all the eligible income streams are identical, their time shapes are dissimilar. Occupations requiring little initial training will yield an immediate stream of low annual earnings. Occupations requiring much initial training will yield high annual earnings beginning at some distant future date. Occupations requiring large initial investments in education must offer higher future incomes than other occupations to compensate the individual for the expense of his education and for income foregone during the years of schooling. Individuals thus choose between a deferred stream of high future earnings and an immediate stream of lower annual earnings. In any given year, the disparities among individual and occupational earnings reflect different levels of training of the various members of the labor force.

A third view holds that income dispersion is an outgrowth of economic, social, and legal institutions. According to this view, the sources of income differences are to be found in: (a) inheritance laws, which permit the transferral of wealth to successive generations of the same families, and (b) barriers to social and economic mobility, such as caste systems, racial discrimination, monopoly power, etc.

Each of these explanations has some validity. Statisticians studying income differences among people classified by age, sex, occupation, location, level of education, etc., have found that chance,

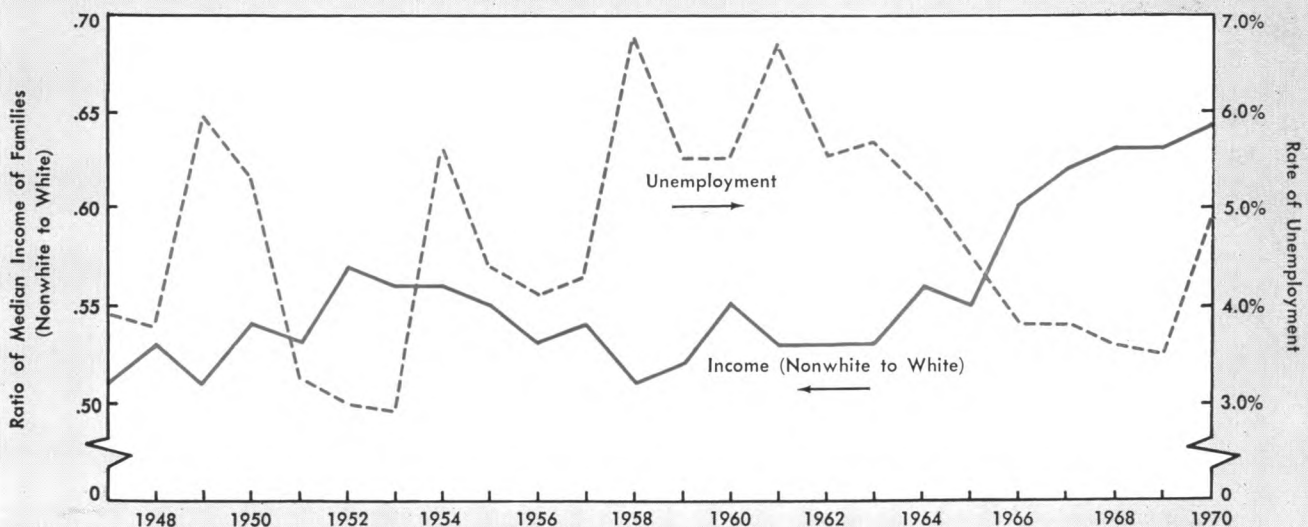
choice, and institutional factors all contribute to income disparity.

Causes of Skewness Identification of the sources of income differences does not suffice as a complete explanation of the pattern of income distribution. Specification of the causes of income disparity explains only why all incomes are not identical. Complete understanding of the income distribution requires an explanation of the skewness of the distribution, i.e., why income differences are not symmetrically distributed about the average income.

Economists have been less successful in identifying the causes of skewness than in specifying the sources of income disparity. Several possible explanations of skewness have been advanced. One view holds that although income receivers in particular occupations have approximately symmetrical income distributions, the aggregate of these different distributions is asymmetrical. A second, largely tautological, view argues that income-earning abilities, and thus incomes, are not symmetrically distributed. In contrast, a third view holds that abilities *are* symmetrically distributed, but that other factors intervene to distort the link between ability and income. Chief among these distorting factors are inheritance laws, which permit the concentration of wealth, power, and social position among a relatively small number of families. Other factors include differences in parents' willingness to devote time and money in schooling for their children, and credit rationing by leaders who allocate funds only to those with high

Chart 2

RATIO OF NONWHITE TO WHITE MEDIAN FAMILY INCOME, 1947-1970



Sources: U. S. Bureau of the Census, Consumer Income, Current Population Reports, Series P-60, Nos. 75 and 78; U. S. Department of Commerce, Survey of Current Business, various issues.

income-earning abilities, thereby accentuating the initial advantage of a particular group of earners. A fourth explanation is based upon mathematical models of probability in which random proportional changes in individual incomes will generate a skewed income distribution. Much current research is being devoted to the specification of such factors as length of schooling, age, job experience, incidence of chance factors, such as accidents, business failure, lack of job information, etc., which will produce the percentage or proportional differences in incomes required by the probability model.

SUMMARY MEASURES OF INCOME DISPARITY

Although graphs and tabular data, like those appearing in Chart I and Table 1, provide a good general description of income size distributions, statisticians must employ more precise measures in the analysis of distribution patterns. In fact, analysts often use a single measure or statistic to summarize the entire distribution. A summary measure characterizes the degree of income disparity existing in the distribution. Some of the more important summary measures are described in this section.

Measures Based on Mathematical Curves Fitted to Empirical Data Single-statistic descriptions of income distributions are of relatively recent origin, dating back no further than 1896. Vilfredo Pareto, an Italian economist, was the first to use a summary measure of income inequality. Pareto plotted income data from tax returns on double-logarithm graph paper, i.e., graph paper on which the vertical and horizontal axes are scaled in the logarithms of numbers. He observed that the plotted data fell along a straight line described by the linear equation $\log N = K - a \log X$, where N is the number of income recipients with incomes of amount X or greater, K is a constant fixing the location of the line on the graph, and a is a constant coefficient representing the slope of the straight line.

Pareto used the coefficient a , the slope of the straight line, as a measure of inequality. He argued that the larger the value of the coefficient, i.e., the steeper the slope of the straight line, the smaller would be the degree of inequality. For example, if all families received identical incomes of \$5,000, then on a double-log chart with the percentage of families depicted on the vertical axis and income shown on the horizontal axis, the Pareto curve would appear as a vertical line at the \$5,000 income level, and the slope coefficient would approach a value of infinity.

Pareto thought that he had discovered in the coefficient a one of the great constants of economics.

Examining income data for a number of countries and historical periods, Pareto found that the coefficient displayed little variation from country to country or from time to time. He inferred from the observed stability of the coefficient an inevitable law of income inequality. He concluded that income inequality is immutable, i.e., that the skewness of the distribution is impervious to social welfare legislation and redistributive income taxation.

Today, most statisticians believe that the Pareto formula fits well only the data for the upper levels of the income distribution, but that it does not adequately describe the entire distribution. The good fit that Pareto obtained with his linear equation is ascribed to the fact that his data came from surtax schedules and was limited to the top stratum of income recipients, i.e., those with incomes too large to conceal from the tax collector.

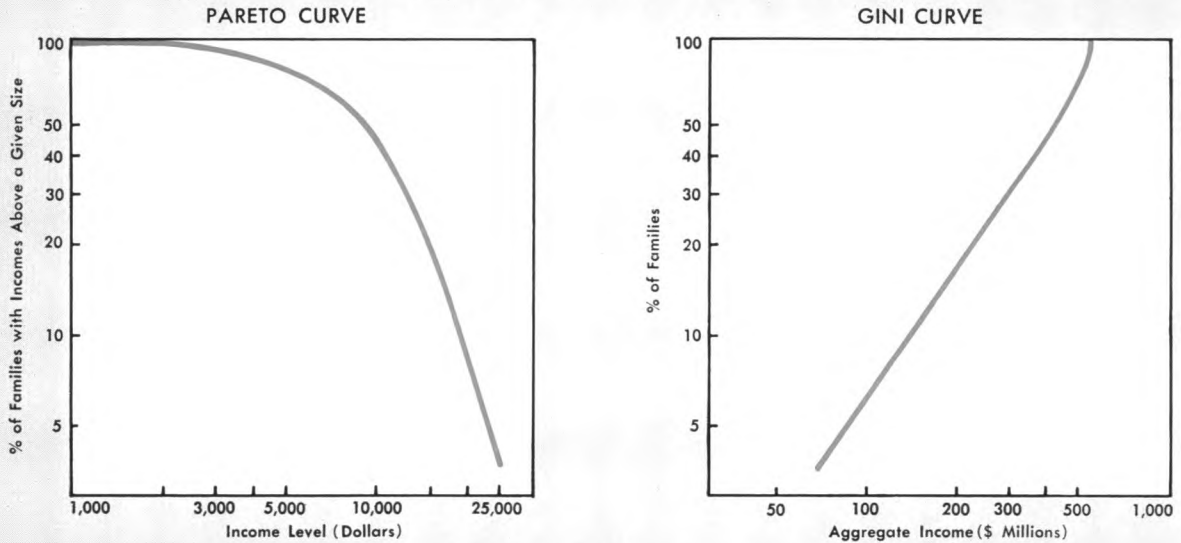
Chart III shows the distribution of income among U. S. families in 1969 measured on a Pareto or double-logarithm graph.² The percentage of U. S. families making incomes above designated amounts can be read easily from the chart. For example, the chart shows that about 90%, 80%, and 3.7% respectively, of the families received incomes in excess of \$3,000, \$5,000, and \$25,000 in 1969. The chart amply illustrates the failure of the Pareto equation in characterizing the income distribution. According to Pareto's formula the entire distribution should appear as a single straight line. Actually, only the "upper tail" of the distribution, i.e., incomes in excess of \$15,000, conforms to the Pareto formula. Today, the Pareto formula is used only in studies of the upper range of the income scale. For example, the Census Bureau uses the Pareto formula to estimate the average income of families included in the open-ended above-\$50,000 income interval.

Another index of inequality similar to Pareto's was suggested by the Italian statistician Corrado Gini. Gini's *index of concentration* is the coefficient d in the log-linear equation $\log N = K + d \log S_x$, where N is the number of income recipients with incomes in excess of S , S_x is the sum of all incomes greater than X , and K and d are constants representing the position and slope of the linear equation on a chart. The only difference between the formulas of Gini and Pareto is that the former relates the number of income receivers (N) with the *sum* of all incomes above a particular level, whereas the Pareto formula relates the number of income receivers with

² Note that the logarithm scale of Chart III telescopes the numbers. Equal distances along a logarithm scale represent equal *percentage* increments. Equal *percentage* increments correspond to ever larger dollar increments as one moves outward along the income scale.

Chart 3

PARETO AND GINI CURVES OF THE DISTRIBUTION OF FAMILIES BY INCOME SIZE, 1969



The vertical and horizontal axes of the charts are scaled in logarithms. The curve of the actual 1969 distribution conforms closely to Gini's, but not to Pareto's, straight-line formula.

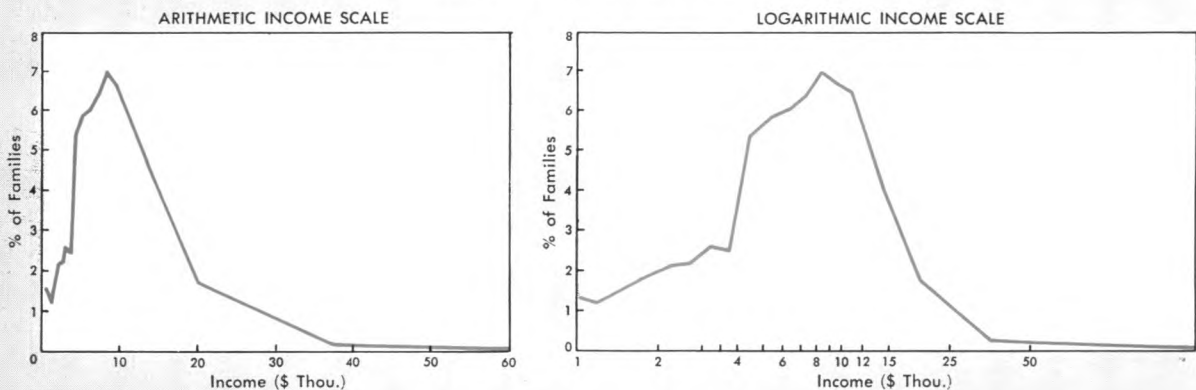
Source: U. S. Bureau of the Census, *Consumer Income*, Current Population Reports, Series P-60, No. 75.

a single income level. Gini thought that his formula would fit the income data, especially the lower end of the scale, better than Pareto's formula. As demonstrated in Chart III, the U. S. income data for 1969 does indeed conform closely to the Gini equation, much more closely than it does to the Pareto equation.

A third type of mathematical curve often fitted to income data is the *lognormal distribution curve*. The lognormal curve is drawn on a semi-log or "ratio-scale" chart on which only the horizontal axis has a logarithm scale, the vertical axis being scaled in ordinary numbers. On such a chart the lognormal curve will appear as a symmetrical bell-shaped curve.

Chart 4

FREQUENCY DISTRIBUTION OF FAMILIES BY INCOME SIZE, 1970



Source: U. S. Bureau of the Census, *Consumer Income*, Current Population Reports, Series P-60, No. 78.

Statisticians began to use the lognormal curve in income analysis when they noticed that graphs of the frequency distribution of income recipients ranked according to the logarithm of income more closely approximated the normal, bell-shaped curve of statistical theory than did graphs of the distribution of income receivers ranked by income. In fact, any skewed frequency distribution assumes a more normal shape when transformed into logarithms. Additional justification for the lognormal curve was provided by economists using mathematical probability models showing that random proportional changes in individual incomes could generate a lognormal form for the whole distribution. It can be observed from Chart IV that the distribution of U. S. families in 1970 according to the logarithm of income is much more symmetrical than the distribution of families ranked by income. The actual data, however, correspond imperfectly to the symmetrical lognormal distribution, just as they do in the case of the Pareto formula.

When the frequency distribution of income is "normalized" by using the logarithmic scale, the *standard deviation* of the distribution provides an adequate summary measure of income inequality. The standard deviation is a statistic that describes the scatter or dispersion of incomes about the average income.

The Lorenz Curve and the Gini Concentration Ratio The most widely used techniques for describing the extent of income concentration are the *Lorenz curve* and its associated measure, the *Gini concentration ratio*. A Lorenz curve is a graphical representation of income inequality. Chart V shows a Lorenz curve for the distribution of family income in the U. S. in 1969. Along the horizontal axis is measured the cumulative percentage of income recipients. Along the vertical axis is measured the cumulative percentage of total money income received by those recipients. If income were distributed equally, i.e., 10% of the families received 10% of the income, 20% received 20%, 30% received 30%, etc., the Lorenz curve would follow the diagonal line of equal distribution. If all income were concentrated in the hands of one family—the extreme limit of inequality—the Lorenz curve would follow the right-angled curve of perfect inequality formed by the horizontal and vertical axes of the chart. In fact, the Lorenz curve falls between the extremes of perfect equality and perfect inequality. But the greater the degree of inequality the greater the deviation of the Lorenz curve from the diagonal line. If inequality is great the curve bows sharply away from the diagonal;

if inequality is moderate the curve only sags slightly from the diagonal.

The Gini concentration ratio provides a precise numerical measure of the information shown in the Lorenz diagram. The Gini measure of concentration is defined as the proportion of the total area under the diagonal located between the diagonal and the Lorenz curve, and is depicted in Chart V as the ratio of Area A to Area A + B. Thus, the numerical value of the area between the Lorenz curve and the diagonal line, divided by the value of the entire area beneath the diagonal line, yields the Gini concentration ratio. The Gini ratio can vary from zero (complete equality) to unity (complete inequality) in value. As the income distribution approaches perfect equality, the Lorenz curve approaches the diagonal, Area A approaches zero, and the concentration ratio approaches zero. As the income distribution approaches perfect inequality, the area between the diagonal and the curve becomes synonymous with the total area beneath the diagonal, and the concentration ratio approaches unity.

The Lorenz curve analysis is useful in studying trends in income concentration in the United States. The behavior of the Gini concentration ratio for before-tax money income of all U. S. families since 1929 is shown in Chart VI. The chart indicates that while there has been some decrease in income inequality in the U. S. since 1929, the greater part of it took place during the depression of the 1930's and the years of World War II. There has been relatively little change in the degree of inequality since 1945. Between 1935 and 1945 the Gini ratio declined from .442 to .375. Since the end of World War II it has shown a tendency to drift downward slightly, decreasing from .375 in 1945 to .354 in 1970.

Movements in the Gini concentration ratio appear to be closely associated with movements in the unemployment rate, increasing when the unemployment rate rises, and declining when it falls. This relation is most conspicuous in the transition from the depressed 1930's to the full employment years of World War II, and it also appears in the post-war period. The Gini ratio declined during the years of relatively low unemployment in the early and middle 1950's. With the return of high unemployment in the late 1950's and early 1960's, the concentration ratio rose back to its 1945 level. All of the subsequent decline in the ratio occurred between 1961 and 1969 when the unemployment rate sank to low levels. Further evidence of the direct relation between income disparity and cyclical swings in the unemployment rate is revealed by a comparison

of year-to-year changes in the unemployment rate and the Gini ratio since 1947. In 18 of the 23 year-to-year intervals the two rates moved in the same direction. In only five of the intervals did they move in opposite directions.

There are a number of reasons why family income disparity, as measured by the Gini ratio, tends to shrink when unemployment falls. A tightening of the labor market provides jobs for the unemployed, thereby lifting some families out of the zero earnings class into the positive earnings category. Expansion of job opportunities attracts more people into the labor force and increases the number of families with more than one earner to augment family income. Tight labor markets provide not only *more* jobs, but also *better* jobs for families at the lower end of the income scale. The availability of employment enables workers to leave relatively low-paying agricultural jobs for higher-paying urban occupations. In addition, the shortage of skilled labor induces employers to train and upgrade relatively unskilled employees, thereby narrowing wage differentials between higher and lower paying occupations.

A slackening of the labor market, on the other hand, tends to expand income differentials. Breadwinners become unemployed and families drop back into lower income brackets. Workers, discouraged by the lack of jobs, drop out of the labor force, and the number of multi-earner families declines. Rural-urban migration slows and the stimulus to occupational upgrading of the labor force declines. The gap between the middle and the lower level of the scale widens. Breadwinners at the lower end, often unskilled and inexperienced, are among the first to be laid off, whereas skilled, experienced workers in the middle income levels may retain their jobs and be little affected by recessions.

Chart VI also shows Gini concentration ratios for white and non-white U. S. families and for families living in the Southern region. The chart indicates that since World War II income inequality among Southern families has been persistently greater than income inequality among all U. S. families, and that incomes of non-whites have been more unequally distributed than incomes of whites. The Gini ratio for non-white incomes has exhibited more pronounced fluctuations that the ratio for white incomes, reflecting the differential impact of changes in the unemployment rate on white and non-white income distributions. Because a greater proportion of non-whites than whites suffer unemployment, and because the income-equalizing factors (job upgrading, less job discrimination, etc.) associated with reductions in the unemployment rate benefit non-whites more

than whites, fluctuations in the unemployment rate have a greater impact on the dispersion of non-white than white incomes.

The Lorenz curve analysis is also helpful in determining the extent to which Federal income taxation equalizes incomes. It is frequently contended that the highly graduated structure of the Federal income tax soaks the rich, thereby substantially leveling the distribution of incomes. However, a comparison of concentration ratios for before-tax and after-tax incomes of tax payers (families and single individuals) does not support this contention. In a recent study³ by Joseph Pechman and Benjamin Okner of the Brookings Institution, Gini concentration ratios for 1966 were calculated as follows:

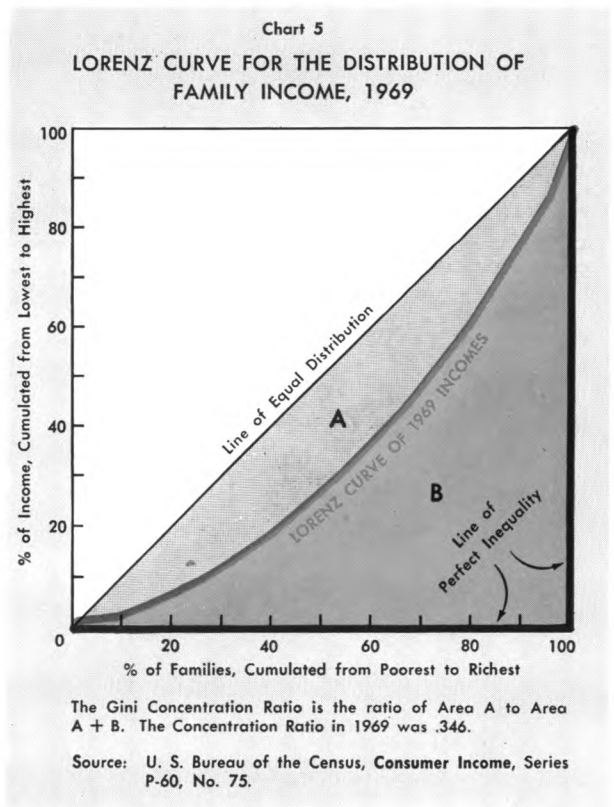
Concentration ratio for before-tax incomes	.446
Concentration ratio for incomes after tax	.409
Percent reduction in concentration ratio	8.3

As expected, the income tax does reduce inequality, but the extent of the reduction is remarkably small and probably far smaller than is commonly thought.

Gini concentration ratios have also been employed in studies that indicate that wealth is more unequally distributed than income, that income variations

(Continued on page 12)

³ Joseph A. Pechman and Benjamin A. Okner, "Simulation of the Carter Commission Tax Proposals for the United States," *National Tax Journal*, Vol. 22, (March 1969), p. 8.



THE ALL-IMPORTANT CONSUMER

Most discussions of current economic prospects include some mention of what the consumer is expected to do. The strength of the recovery depends crucially on whether households will decide to spend most of their income or whether they will continue to save an unusually high proportion of their income. Personal saving as a percentage of disposable personal income, or the saving rate, has reached relatively high levels during the past few quarters. During the third quarter of 1970 this rate moved above 8% to its highest level since 1952; since then it has remained over 8%. This higher saving rate has been interpreted by many to mean that the consumer is uncertain about the future state of the economy and is consequently postponing durable goods purchases.

Many observers have pointed to the abnormally high saving rate as a source of economic recovery, provided that the consumer's confidence can be restored. Thus, most speculations about the success of President Nixon's new economic program hinge in some measure on the state of consumer confidence. Since the excise tax reduction will effectively reduce domestic automobile prices, and since prices in general may be expected to rise after 90 days, the consumer may, indeed, reduce his saving and begin buying more. On the other hand, to the extent that income influences consumer spending patterns, the President's policy could have a different effect. For example, persons who were hard-hit by the wage freeze might well postpone their durable goods purchases until they know more

about their future income. In order to investigate the prospects for increasing consumer expenditures, a series of charts has been prepared to show the past actions of the consumer.

The U. S. Department of Commerce estimates personal consumption expenditures for each quarter. The estimates are classified into expenditures for durables, nondurables, and services. Analysis of spending by component is useful because the predictability of change in the three components is different. Consumer spending for services, for example, has been quite predictable in the past. Service expenditures have increased approximately 2% per quarter for the past several years, excluding disturbances for strike effects. The other two expenditure components are considerably more difficult to predict accurately.

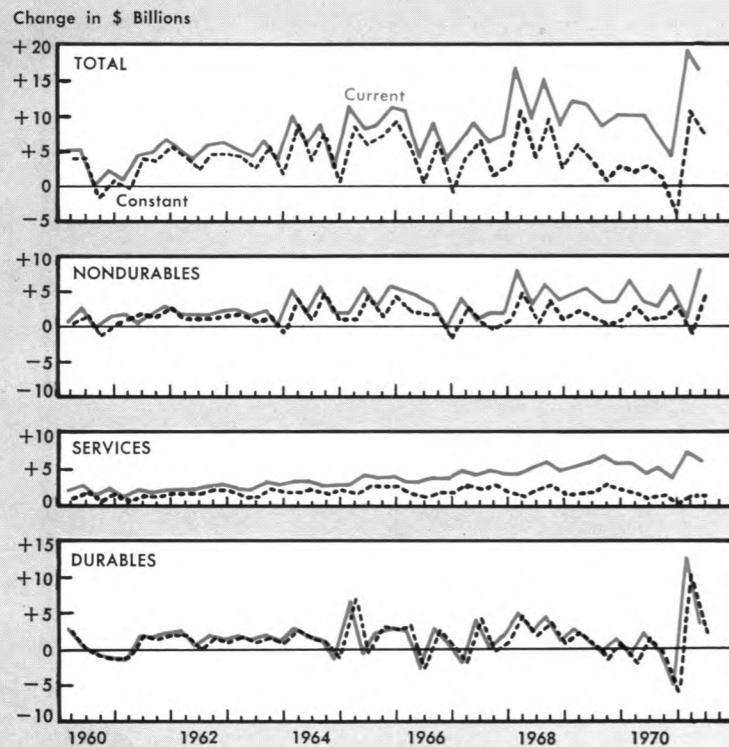
Both durable and nondurable goods expenditures vary with changes in the consumers' disposable income. Nondurable spending, however, maintains a closer relationship to disposable income and can be

predicted more accurately than durable goods expenditures, once something is known about the future state of consumers' incomes.

Durable purchases are influenced by income, but they are also influenced by expectational and other erratic forces. Durable expenditures consist, in large part, of spending for automobiles and consumer appliances. In order to gain some insight into the state of durable spending, therefore, it is often useful to investigate the automobile sales data and the state of new housing starts and completions, in addition to the state of consumer income. Housing starts, as the chart shows, have been recovering rather substantially in recent months. Preliminary figures indicate that automobile sales have also picked up considerably since the inception of the President's new program. If housing starts continue their recovery and automobiles continue to sell at their recent high rate, then a recovery in consumer spending for durables will probably come about.

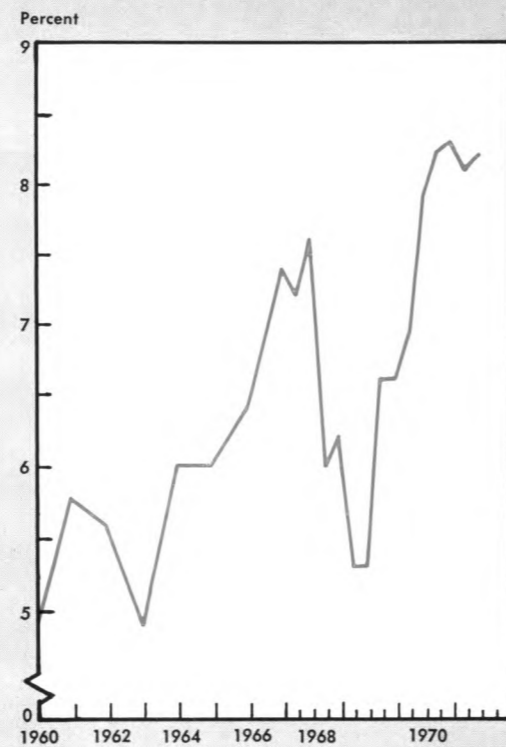
William E. Cullison

PERSONAL CONSUMPTION EXPENDITURES



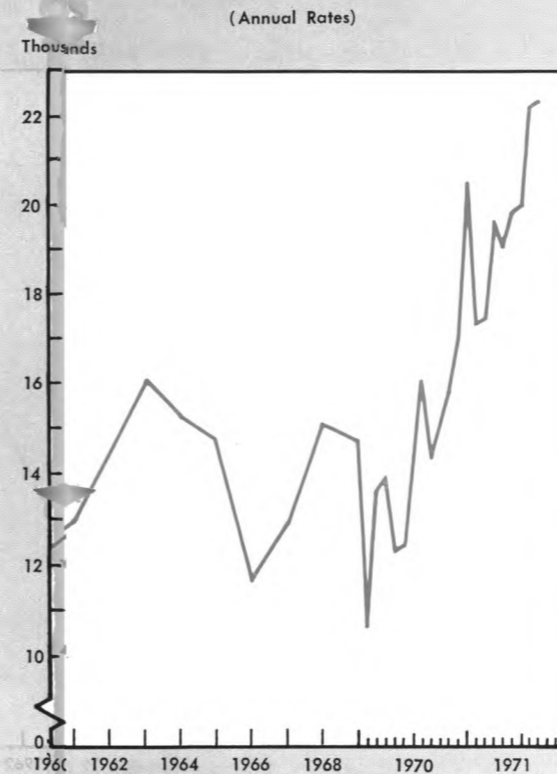
Source: U. S. Department of Commerce.

PERSONAL SAVING AS A PERCENTAGE OF DISPOSABLE PERSONAL INCOME



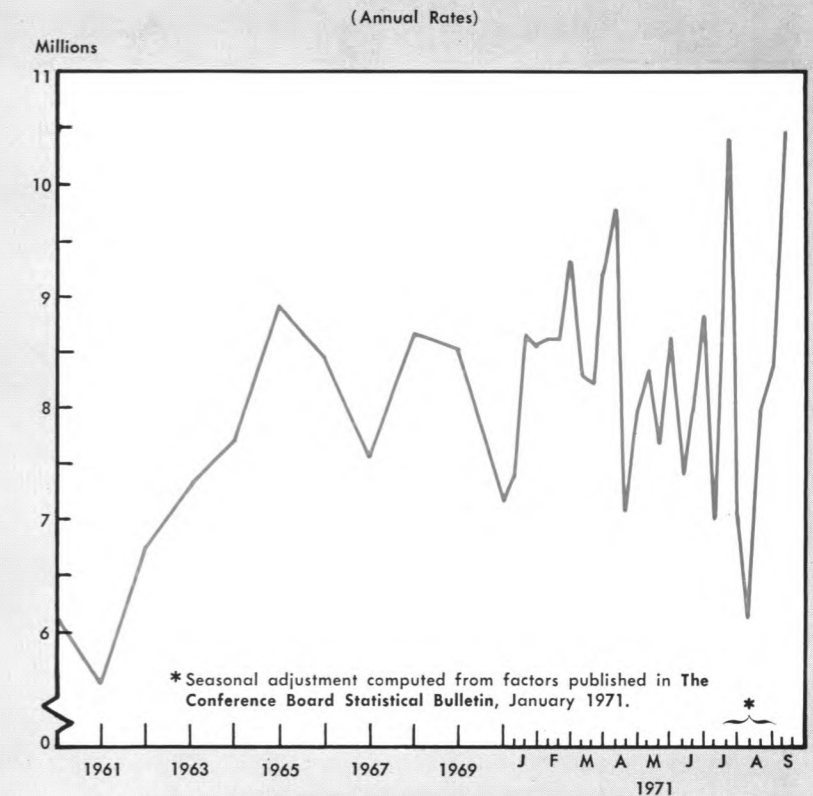
Source: U. S. Department of Commerce.

NEW PRIVATE HOUSING UNITS STARTED



Source: U. S. Department of Commerce.

AUTOMOBILE SALES



Source: The Conference Board Statistical Bulletin, August 1971, p. 11.

Income Distribution and Its Measurement

(Continued from page 9)

among female employees are greater than among male employees, that wage income is more equally distributed than dividend income, and that income within professional and technical occupations is more equally distributed than incomes of laborers and entertainers.

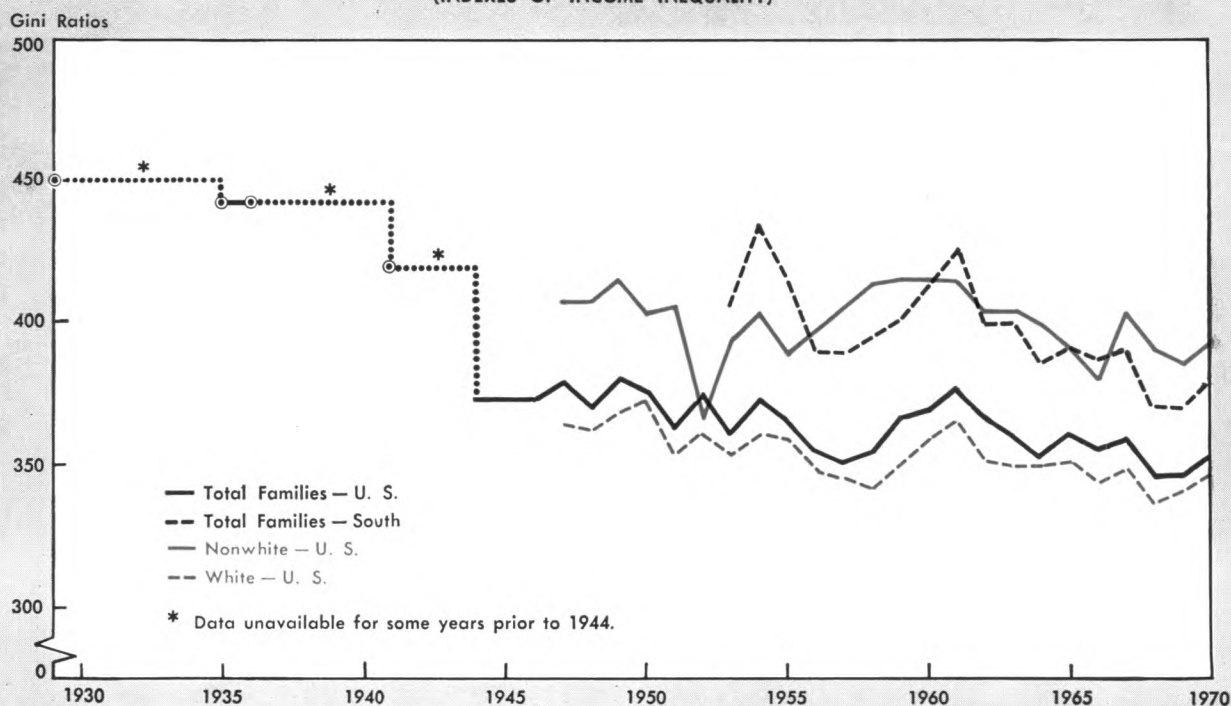
Measures of Dispersion Some students of income distribution prefer statistical *measures of dispersion* to the Pareto coefficient and the Gini concentration ratio as indexes of inequality. A dispersion measure indicates the extent of the spread or scattering of family incomes about the average family income. The greater the dispersion of the income distribution, the larger the proportion of incomes that differ from the average income by more than any specified amount and thus the greater the degree of inequality.

Of the large variety of dispersion measures, three are most often used in income studies. The chief dispersion measures are (1) the variance, (2) the standard deviation, and (3) the coefficient of variation. The details of the calculation of these measures are shown in the Appendix to this article.

Dispersion measures may be calculated for the original distribution or for its logarithmic transformation. The variance and standard deviation statistics computed from the original distribution express the variation of incomes from the average as a dollar amount. Dispersion statistics computed from the logarithmic transformation of the distribution express the variation of incomes about the average in terms of proportional or percentage differences.

Some economists argue that, because the logarithmic transformation of the income distribution approximates the symmetrical bell-shaped curve used in statistical analysis, dispersion measures should be based on the logarithm of incomes. These economists also argue that dispersion measures expressed in terms of proportional differences in income, instead

Chart 6
GINI CONCENTRATION RATIOS, 1929-1970
(INDEXES OF INCOME INEQUALITY)



Sources: U. S. Bureau of the Census, Trends in the Income of Families and Persons in the United States: 1947-1964, Technical Paper No. 17, Washington, D. C., 1967; Historical Statistics of the United States, Colonial Times to 1957, Washington, D. C., 1960.

of absolute dollar differences, are more appropriate in the analysis of the welfare significance of income inequality. A dispersion measure expressed in terms of absolute dollar differences, for example, implies that an equal dollar difference of, say \$100, has the same significance for a millionaire as for a pauper. An equal proportional difference is more plausible because it corresponds to a greater dollar difference at higher income levels than at lower levels.

Inequality at the Extremes Other measures of income inequality include the proportion of income going to the top 5% of income receivers and the proportion of families receiving incomes less than some stated amount. These measures, unlike those previously discussed, focus on income concentration and inequality at the *extremes* of the distribution.

As measured, the degree of income concentration at the upper end of the distribution has declined substantially over the last 40 years. Scholars, including Simon Kuznets of Harvard and Selma Goldsmith of the National Bureau of Economic Research, have estimated that the share of total personal income claimed by the top 5% of families decreased from approximately 30% to about 20% between 1929 and 1944. Since then the income share commanded by the top 5% has continued to decline. These estimates, however, may have overstated the reduction of income concentration at the top of the scale. High Federal income tax rates may have induced the wealthy to take an increasing proportion of their income in the form of stock-options, capital gains, generous expense accounts, long vacations, use of corporation property, and other non-taxable forms. As previously mentioned, these types of income are not included in measured family money income, and thus it is likely that a rising proportion of the income of the rich has gone unmeasured. Even if this bias is accounted for, however, the figures still indicate a marked diminution of the income share of the top 5%.

In recent years, interest has shifted from income concentration at the top of the scale to the incidence of poverty at the bottom end of the scale. Poverty lines distinguishing the poor from the non-poor have been defined in both *absolute* (fixed) and *relative* terms. The most widely-publicized absolute standard is the \$3,000 family poverty line established in 1964 by the Council of Economic Advisors. A relative standard often used by economists defines poverty

as all incomes less than one-half the median family income. Unlike the absolute standard, the relative standard also provides a measure of the inequality existing in the lower half of the income distribution. Whereas a fixed standard of poverty is independent of the shape of the distribution, the location of the relative poverty line is determined by the shape of the lower half of the distribution. For example, increasing skewness of the frequency distribution of incomes at the lower end of the scale would enlarge the distance separating the relative poverty line from the median income, thereby increasing the inequality of poverty incomes compared to the middle or median income.

There has been very little change since World War II in the degree of inequality at the lower end of the distribution. Researchers, including Victor Fuchs of the National Bureau of Economic Research and Mary Jean Bowman of the University of Chicago, have found that the proportion of families with incomes less than half the median family income has hovered around 19% and 20% from 1947 to the present. Moreover, the income share claimed by the lowest 20% of families has varied little from the 1947 figure of 5%. In short, increased equality of incomes has occurred in the upper and middle ranges of the distribution, but not in the lower range.

SUMMARY

The frequency distribution of family incomes in the United States displays the skewness or asymmetry that characterizes most income distributions. The explanation of the source of this skewness characteristic has long stood as a challenge to economists. Since the turn of the century, economists have attempted to define it with mathematical formulas and to explain it with economic reasoning. The bulk of successful research on income distribution, however, has been at the empirical, descriptive level rather than at the theoretical level.

Analysts employ a variety of measures of income inequality in their empirical studies of income distribution. The most widely used measures are the Lorenz curve and the Gini concentration ratio. These and other measures have been used to show that there has been a reduction in the degree of income inequality in the United States since 1929, chiefly due to the redistribution of incomes away from the upper income groups in favor of the middle income classes.

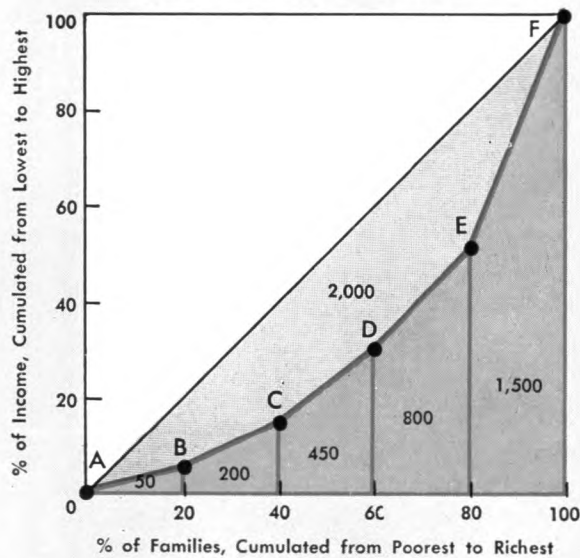
APPENDIX

This section describes how some of the measures of income inequality discussed in the text are calculated. For simplicity it is assumed that there are only five families and that their combined money income is \$100,000. The distribution of income among the families in this hypothetical example is as follows:

<u>% of Families</u>	<u>Income Received (Thousands of \$)</u>	<u>% Income Received</u>	<u>Cumulative % of Families</u>	<u>Cumulative % of Income Received</u>	<u>Point on Lorenz Curve</u>
0	\$ 0	0%	0%	0%	A
Lowest Fifth	5	5	20	5	B
Second Fifth	10	10	40	15	C
Third Fifth	15	15	60	30	D
Fourth Fifth	20	20	80	50	E
Highest Fifth	50	50	100	100	F

Mean Income = \$100,000 / 5 = \$20,000.

CONSTRUCTION OF LORENZ CURVE
AND GINI CONCENTRATION RATIO



The data in the table will be used to construct a Lorenz curve and to calculate the Gini concentration ratio and the three most-often used measures of dispersion (the variance, standard deviation, and coefficient of variation of the distribution of incomes).

The Lorenz curve is derived by plotting the data in the last three columns of the table in the accompanying chart. The lowest 20% of the families receive 5% of income (Point B on the chart), the lowest 40% receive 15% of the income (Point C), etc. The charted line ABCDEF is the Lorenz curve. Had there been many more income classes than five, the Lorenz curve would have appeared as a smooth, rounded line instead of the connected line segments.

The Gini concentration ratio is the ratio of the area between the Lorenz curve and the diagonal line to the total area lying below the diagonal. It is computed by (1) calculating the total area beneath the diagonal, (2) calculating the sum of the trapezoidal areas lying beneath

the Lorenz curve, (3) subtracting (2) from (1), and (4) expressing the result as a fraction of the total area enclosed by the diagonal.

- (1) Total area beneath the diagonal: $\frac{1}{2} \times 100 \times 100 = 5,000$
- (2) Area beneath the Lorenz curve:¹ $50 + 200 + 450 + 800 + 1,500 = 3,000$
- (3) Area between diagonal and Lorenz curve: $5,000 - 3,000 = 2,000$
- (4) Gini concentration ratio: $2,000/5,000 = .40$

The *variance* of the distribution is found by squaring the deviation of each family income from the mean family income, summing the squared deviations, and dividing this sum by the number of families. Variance = $[(5-20)^2 + (10-20)^2 + (15-20)^2 + (20-20)^2 + (50-20)^2]/5 = 1,150/5 = 230$.

The *standard deviation* of the distribution is merely the square root of the variance. Standard Deviation = Square Root of 230 = 15.17.

The *coefficient of variation* of the income distribution is simply the standard deviation divided by the mean family income. Coefficient of Variation = $15.17/20 = .76$. Thomas M. Humphrey

¹ The area of each trapezoid is calculated from the formula $A = \frac{1}{2}(h_1 + h_2)b$ where A, b, h_1 , h_2 represent, respectively, the area, base, and heights of the left and right-hand vertical sides of the trapezoid.

Comparative Asset Structures of Selected Financial Institutions

The financial sector of our economy is made up of various types of institutions that collectively serve the varied needs of businesses and individuals. Since each type of institution has characteristic sources and uses of funds, one can distinguish among the various types by studying their respective balance sheets. This article will compare the asset side of the balance sheets of some major types of financial institutions and examine the reasons for these different asset structures. Also, the reactions taken by the different institutions in response to changing credit conditions will be discussed.

Mutual Savings Banks Mutual savings banks are included in the broad classification of thrift institutions, since their main source of funds is deposits of small individual savers. These funds are invested and loaned out by the mutual savings banks within a framework of legal and supervisory controls.

All savings banks are state-chartered and therefore are subject to state laws and to examination by appropriate state banking authorities. Some mutual savings banks have voluntarily joined the Federal Home Loan Bank System and must therefore meet certain standards set by the Federal Home Loan Bank Board. Those savings banks insured by the FDIC must also follow the regulations of this agency. Most states in which mutual savings banks operate have established so-called "legal lists." These "legal lists," which vary somewhat from state to state, place limitations on the investments and loans of mutual savings banks by specifying the types of loans and investments that may be held as assets. Specific loan and investment categories may also be subject to ceilings expressed as percentages of total assets or total deposits for each individual bank. In Maryland and Delaware savings banks are not subject to "legal lists" but rather to the "prudent man" rule. This rule, in effect, tells the trustees of savings banks that they are expected to lend and invest their savers' funds as would any prudent man in handling funds intrusted to him. While this rule gives them broad investment powers in theory, in practice they are restricted to high-grade investments. Moreover, Federal income tax laws affect the asset composition of mutual savings banks, as they do those of most financial institutions.

The investment powers of mutual savings banks are more circumscribed than those of commercial banks and life insurance companies but broader than those of savings and loan associations. Investment powers granted to mutual savings banks allow for investment in mortgage loans (both conventional and federally guaranteed), U. S. Government securities, federal agency securities, state and local government bonds, and certain high-grade corporate securities. The investment powers of mutual savings banks have been gradually broadened and made more flexible over the years. These broadened powers allow mutual savings banks to grant out-of-state mortgages as long as they are FHA or VA approved, to invest a certain percentage of their funds at their discretion, and to obtain special permission from supervisory authorities to invest in certain securities.

Like most financial institutions, mutual savings banks held a large proportion of their assets as U. S. Government securities at the end of World War II. This was the result of massive acquisitions of U. S. Government securities to help finance the war. After the war, savings banks disposed of a huge volume of Governments and invested the resulting funds in mortgages, corporate securities, and municipal bonds. The most dramatic change has been the increase in mortgage loans from 25% of total assets at the end of 1945 to 73% of total assets at the end of 1970. This large increase in the proportion of assets held as mortgage loans can be attributed to several factors, including the sharp post-war increase in the demand for housing, the enactment of legislation allowing savings banks to acquire out-of-state mortgages, and the relative attractiveness of mortgage yields.

Mutual savings banks hold a much larger share of assets in mortgages than commercial banks or life insurance companies but a smaller proportion than savings and loan associations. Mortgage lending by savings banks is mainly in the nonfarm residential mortgage market. Mutual savings banks exhibit more interest in federally underwritten mortgages than do other types of financial institutions and, in fact, rank first in the amount of dollar holdings of FHA and VA approved mortgages.

States requiring legal reserves of mutual savings banks count cash assets or, in some instances, cash

assets and certain securities, as legal reserves. Governments, which now comprise about 4% of total assets, are included in liquid assets or secondary reserves, depending upon their terms to maturity. The desired amount of liquid assets, as are the desired holdings of other types of assets, are affected by prevailing monetary conditions.

Monetary policy, through its effects on interest rates and overall money and capital market conditions, influences both the inflow of funds to mutual savings banks and their asset structure. By studying the period since 1966, one can clearly see the significant impact monetary policy exerts upon the portfolio management of mutual savings banks. During the "credit crunch" of 1966 and the restrictive monetary conditions of 1969, the percentage of assets held as corporate bonds increased relative to the percentage held as mortgage loans. This response took place as the interest rates on mortgages became noncompetitive with rates on other capital market instruments. As credit conditions eased between these periods of tight money, mortgages were acquired at a faster rate than corporate bonds because of the higher yield on mortgages. In some periods of credit ease, corporate bonds have been sold by savings banks to provide funds for increased investment in mortgage loans.

Mutual savings banks have shown a fairly flexible investment policy over periods of changing credit conditions. This ability to adjust the flow of funds into the various investment channels has allowed savings banks to achieve adequate earnings, which in turn has kept them competitive with other types of financial institutions.

Savings and Loan Associations Savings and loan associations are similar to mutual savings banks in that they are also classified as thrift institutions and normally hold the largest proportion of their assets in the form of mortgages. Nevertheless, asset structures of these two types of institutions typically differ as a result of divergent regulations and dissimilar investment policies.

Federally chartered savings and loan associations are required to be members of the Federal Home Loan Bank System and thus are subject to supervision and examination by the Federal Home Loan Bank (FHLB) Board. This agency also regulates state-chartered associations that have voluntarily become members of the System. All state-chartered associations are subject to supervision and examination by the appropriate state authority. In addition, all associations insured by the Federal Savings and Loan

Insurance Corporation (FSLIC) are required to meet the standards and requirements of this regulatory agency.

Member associations must maintain liquidity reserves equal to a certain percentage of total savings and borrowings payable in one year or less. This required percentage of liquidity reserves set by the FHLB Board must be within the range of 4% to 10%. Acceptable liquidity reserves include cash assets, U. S. Government securities, government agency obligations, bankers' acceptances, and certificates of deposit.

Federal taxation of savings and loan associations also affects the asset structure of these institutions. Under present laws, a savings and loan association is penalized for failure to maintain at least 82% of its assets in residential mortgages, cash, government securities, and passbook loans. This penalty takes the form of deductions from an association's allowable tax-exempt additions to its loss reserves.

Although the investment powers of savings and loan associations are not as broad as those of some other types of financial institutions, several permissible channels of investment are open. Investment outlets, besides those previously mentioned, are loans for higher education, repair and modernization loans, state and local government general obligations (not revenue obligations), stock in corporations wholly owned by savings and loan associations (up to 1% of total assets), and direct investments in real property in urban renewal areas (up to 2% of total assets). Member associations are also required to hold stock in their respective Home Loan Banks.

Savings and loan associations hold approximately 85% of their total assets as mortgage loans. Unlike mutual savings banks, savings and loan associations have traditionally favored conventional mortgages. During the period 1960-1970, conventional mortgage loans consistently exceeded 90% of total mortgage loans granted by savings and loan associations. These institutions have been quite successful in developing and marketing conventional home mortgages, thus making it unnecessary for them to invest heavily in federally underwritten loans.

Although assets of savings and loan associations have always consisted predominantly of mortgage loans, the composition of assets has shown some sensitivity to changing credit conditions. In periods of tight money, holdings of U. S. Government securities, cash, bank deposits, and real estate have either stabilized or declined, depending upon the degree of monetary restraint, while mortgage loans have increased. This response by savings and loan associations is necessitated by the disintermediation

that generally takes place during periods of tight money. Disintermediation, induced by a reordering of interest rates, is the process whereby savers increase their investments in direct market instruments and reduce their additions to savings and time deposits in financial institutions. Savings and loan associations were confronted with disintermediation during 1969, which forced them to sell some of their assets to obtain funds for mortgage loans.

Because the assets and liabilities of savings and loan associations are unmatched with respect to maturities, the profitability of these institutions fluctuates significantly with varying monetary conditions. Since most funds are obtained on a short-term basis (savings deposits), the cost of funds to associations varies with the general level of interest rates. Long-term loans (mortgages) are granted at fixed interest rates, thus resulting in the varying spread between the cost of funds and the return on assets. Despite this susceptibility to oscillating profits, the investment policy of savings and loan associations has enabled them to achieve good rates of earnings.

Life Insurance Companies Life insurance companies have a greater degree of freedom in their investment operations than commercial banks, mutual savings banks, or savings and loan associations. Life insurance companies are not only subject to the laws of the state in which they are chartered but also to the laws of any state in which they write insurance. State laws regulate or set standards for the size of a company's policy reserves, the amount specifically allocated by a company for the fulfillment of its policy obligations. State laws require each company to maintain "admitted assets" at least equal to the amount of its policy reserves. "Admitted assets" are those assets that meet the state's investment standards. State insurance examiners review the loans and investments of insurance companies to determine if they qualify as "admitted assets."

Life insurance companies invest their funds to attain the dual goal of meeting future obligations to policyholders and achieving an adequate rate of return on their investments. Life insurance companies have a significant advantage over some other types of financial institutions in investment planning. Although the cash inflows of life insurance companies are cyclically sensitive, they are more stable than the cash inflows of mutual savings banks, savings and loan associations, or commercial banks. This relative stability enables them to act as long-term investors and to plan and project future investment policy with accuracy and confidence. In the

determination of premium rates for life insurance policies, a minimum rate of return on investments is taken into account. This assumed minimum rate of return is calculated from the previous earning rates on a company's portfolio, among other things.

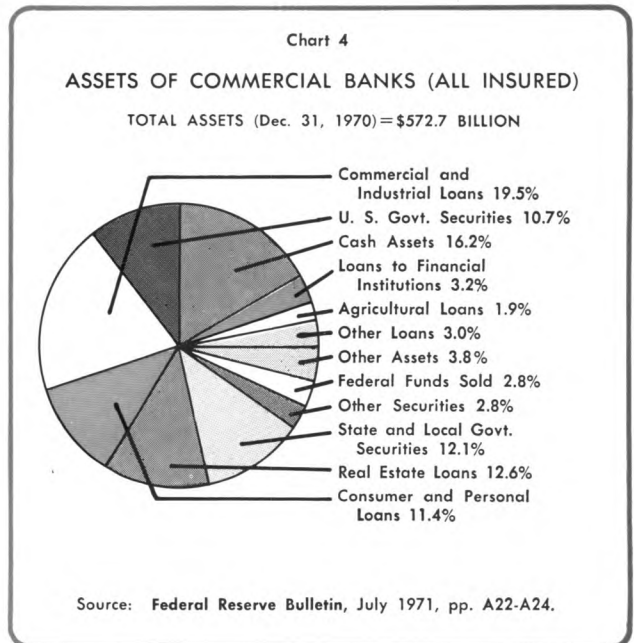
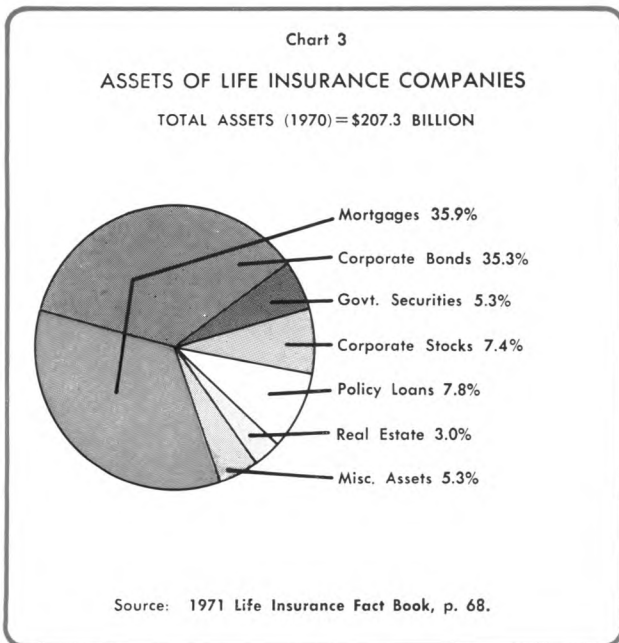
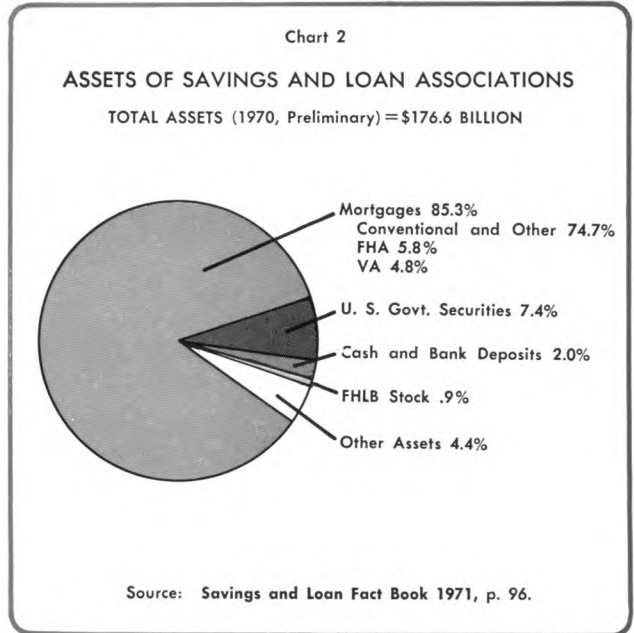
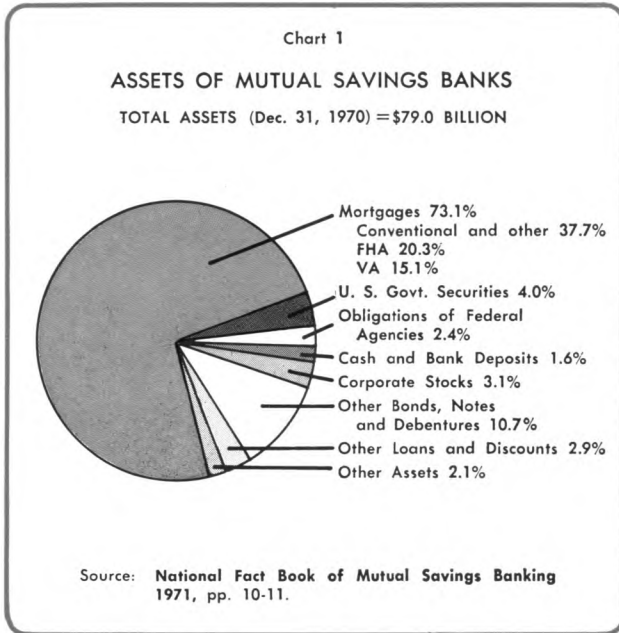
Life insurance companies have been allocating an increasing proportion of their assets into such higher yielding investments as conventional mortgages and corporate stocks and bonds. Like other financial institutions, life insurance companies held a large proportion of their assets as U. S. Government securities at the end of World War II. As their holdings of Governments declined during the postwar period, mortgages and corporate securities became the main investment outlets for life insurance companies. Policy loans, made by insurance companies to policyholders on the security of their policies' cash value, have increased in importance over the past decade. Largest increases in this asset category have occurred during periods of high interest rates when rates on policy loans are usually lower than those available at other financial institutions. Miscellaneous assets, such as due and deferred premiums, due and accrued investment income, leaseback arrangements of real property and equipment, and cash, have remained a fairly constant proportion of total assets. Life insurance companies' portfolios are more diversified than those of some other financial intermediaries. At the end of 1970, mortgages and corporate bonds accounted for more than 70% of total assets. Other important assets were policy loans, corporate stocks, and Government securities. Because life insurance companies have long-range investment plans, short-term adjustments in their portfolios, in response to changing monetary conditions, are not as marked as those of other financial institutions. However, some reactions to changing monetary conditions can be detected. For example, during periods of tight money, the rate of investment by life insurance companies in mortgage loans generally declines, while the proportion of assets held as policy loans usually increases.

Commercial Banks Commercial banks are often called department stores of financial services because of their broad range of operations in both the acquisition and investment of funds. Commercial banks are subject to numerous regulations and to supervision and examination by regulatory authorities. These regulations limit bank lending operations and restrict their investments. The particular regulations and supervision to which a given commercial bank is subject depends upon the type of charter (national or state), membership or non-

membership in the Federal Reserve System, and whether or not the bank is insured with the FDIC. All national banks are under the authority of the Comptroller of the Currency, the Board of Governors of the Federal Reserve System, and the FDIC. Each of the fifty states has a supervisory agency to regulate state-chartered banks. The prime concern of all supervisory authorities is the safety of depositors' funds.

Investments by member banks in bonds and other debt instruments are made under rules established by the Comptroller of the Currency. One basic law

regarding investments limits the investment in debt instruments of any one obligor to 10% of a bank's capital stock and surplus. This law assures a suitable degree of diversification in a bank's investment portfolio. Investments in the obligations of the Treasury, federal agencies, state and local governments, Federal Home Loan Banks, and the Federal Housing Administration are exempt from this 10% rule. Commercial banks are expected to avoid bonds or debt instruments that are distinctly speculative. Member banks are subject to strict limitations on stock ownership; however, some stock holdings are



permitted. Specifically, member banks may hold stock in subsidiary and service corporations established for certain specified functions, such as owning and maintaining the building occupied by the bank. Other allowable holdings include stocks of subsidiary corporations that engage in a safe deposit business, foreign banking, or bookkeeping and statistical services for the bank. Also member banks may hold stock in the Federal National Mortgage Association (FNMA) and in small business investment companies. Investments in the above mentioned stocks are limited to stated percentages of a bank's capital stock and surplus.

Commercial banks are expected to give top priority to safety in their lending activities. A 10% rule applies to loans as well as to bonds. With few exceptions, banks must not lend an amount exceeding 10% of capital stock and surplus to any person, partnership, association, or corporation. In addition to the legal restrictions placed on commercial bank lending and investing, the attitudes and criticism of bank examiners play an important role in the loan and investment policies of commercial banks.

Bankers generally look upon lending activities as the principal function of commercial banks. This philosophy is borne out by the higher proportion of total assets in loans than in investments. Traditionally, banks were expected to specialize in short-term self-liquidating business loans. This philosophy was known as the "real bills doctrine" in England and as the "banking school theory" in the United States. While this type of loan is still looked upon with favor by commercial bankers, many other types of bank loans have developed over the years. Banks now offer loans of varying maturities and for different purposes to meet the new and changing needs of the economy. Term loans to businesses have become more important in banks' loan portfolios. Also, consumer, personal, and mortgage loans have shown a growing importance in the assets of commercial banks throughout the postwar period. One reason for these changes in the loan policies of commercial banks is the appearance of aggressive competitors in lending activities.

Overall, business loans continue to dominate bank loan portfolios, accounting for over 33% of all commercial bank loans. Mortgage loans follow in importance, comprising about 25% of total loans. Commercial banks prefer conventional mortgages to insured mortgages because of their higher rate of return. The third most important loan category by volume is consumer installment credit. The emphasis on this type of lending varies significantly from one

bank to the next. This sort of lending activity, which used to be looked upon with disfavor by commercial bankers, has become an acceptable activity for commercial banks and also one of the most profitable areas of loan operations.

Commercial banks are allowed to hold bonds of various obligors. They are expected to invest in only high grade securities, which include the obligations of federal, state, and local governments, foreign governments, public utilities, and some industrial corporations. Commercial banks are attracted to U. S. Government securities, particularly because of their gilt-edge quality. State and local government obligations also play a major role in commercial bank investment policies because of certain tax advantages these instruments offer.

Commercial banks generally exhibit characteristic responses to changes in monetary conditions. Since the reserve position of the commercial banking system is the focal point of monetary policy, changes in monetary conditions desired by the Federal Reserve Board are directly related to the reserve positions of commercial banks. When the reserve positions of banks tighten, banks tend to reduce their holdings of U. S. Government securities and cut back on their acquisition of other securities in order to obtain funds to meet loan demand. The desire on the part of bankers first to meet the loan demands of business borrowers is sometimes at the expense of mortgage borrowers. Acquisitions of state and local government securities proceed at a slower rate through periods of relatively tight reserve positions. During periods of slack business activity, when the reserve position of commercial banks tends to loosen, mortgage loan activity and purchases of U. S. Government, state, and local obligations generally increase.

Summary The types of financial institutions discussed in this article exhibit a wide range in the degree of asset specialization. At one end of the spectrum are savings and loan associations, which are highly specialized in mortgage loans, and at the other end are commercial banks, whose assets are dispersed among various types of loans and investments. By looking at the asset side of financial institutions' balance sheets, one can determine the manner in which savings and investments are allocated, depending upon the type of institution with which a person places his funds. Also, a knowledge of the characteristic responses of financial institutions to changing monetary conditions aids in explaining the differential impact of monetary policy on the various sectors of our economy. *John W. Scott*