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THE GOVERNMENT SECTOR OF THE ECONOMY

The government sector of the economy has been in the forefront of political-economic discussions in recent years—in fact, even more than usual. This is probably due largely to the significant change that has occurred in the role of government finance. The handling of government receipts and expenditures at the Federal level has tended to take on a longer-term quality, and is now being directed more toward helping promote the nation's economic growth rather than being used only countercyclically to combat recessions.

Recognition of the need to rely more on the private sector of the economy to keep the economy moving is indicative of this turn in thinking. The attempt to encourage the private sector through greater incentives for private spending and investment is revealed in the large-scale tax cut that was imple-

mented in March 1964, and in the earlier liberalization of depreciation allowances and the investment tax credit; it is also revealed in attempts to slant more Federal spending toward developing human resources. Some observers consider the recent shift in attitude toward the role of the government sector as a "fiscal revolution".

In addition to changes in attitude toward the broad sweep of government activity in the economy, a number of major developments have occurred within the government sector itself. While most attention and analysis have been devoted to Federal activity, the really dramatic developments have taken place in the state and local component of the total government sector. In short, the "mix" of government activity has undergone some striking changes. The nature of the changing mix is such that, in the past decade, the fastest

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growing sector of total economic activity—in terms of contribution to Gross National Product—is the state and local government sector.

Rates of growth of expenditures, revenues, and employment of state and local governments have outstripped those of all other parts of the economy, public or private. Such growth, however, has not occurred without creating some serious financial strains for state and local governments. This has been evidenced, for example, in the crossfire between rapidly growing demands for increased and improved services that require substantial additions to revenues, on the one hand, and growing opposition toward further increases in state and local taxes, on the other.

The combination of a change in attitude toward fiscal policy and a change in the mix of the government sector will have some important implications for the economy in the next few years—in the nature of public spending as well as in the utilization of revenues. Recent and possible future shifts from spending on goods to spending on services—education, medical, highways, urban redevelopment, poverty, mass transit programs, among others—as well as the possible return of some Federal revenues to the states (through shifts in use of tax resources, no-purpose grants, or specific grants) have possible far-reaching consequences at national, state, and local levels. It thus would seem instructive at this juncture to attempt to place in broad perspective the government sector of the economy, both in terms of its relationship to total economic activity and its structure and composition.

GOVERNMENT SECTOR AND ECONOMIC ACTIVITY

The total output of goods and services and the contribution of the major sectors of the economy during the postwar period are shown in the accompanying chart.¹ Total economic activity, as measured by GNP, more than doubled between 1947 and 1963, despite the interruptions resulting from four recessions.

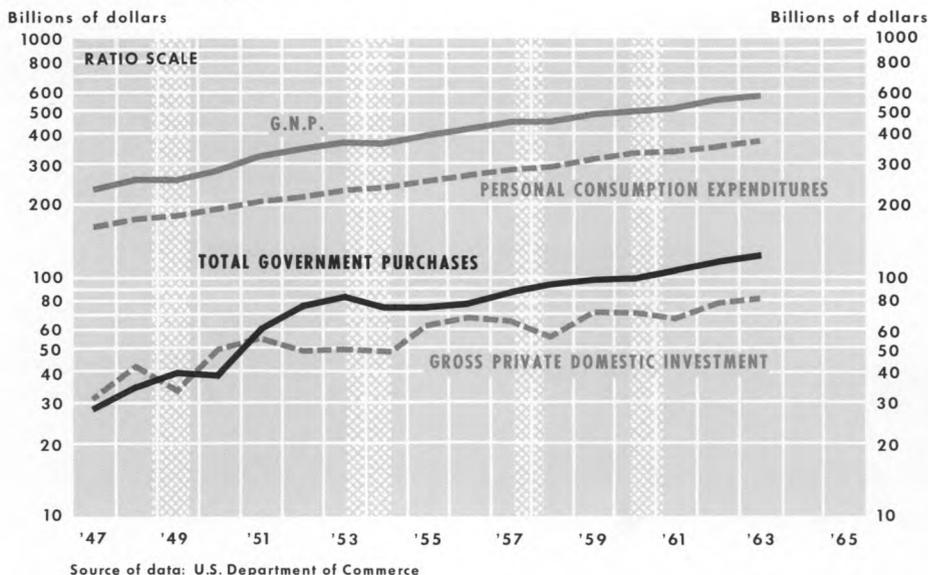
The largest single sector within GNP is the consumer sector (personal consumption expenditures). This sector has more than doubled since 1947, accounting for nearly two-thirds of GNP in 1963. Changes over time in the consumer sector have essentially paralleled changes in GNP. Consumer spending, however, has demonstrated less sensitivity to business recessions than other sectors of the economy.

The business sector (spending by business for fixed investment, residential construction, and inventories) has demonstrated a behavior pattern that is much more volatile than the other major components of GNP, and as such is a major contributor to the cyclical swings in total economic activity. This sector increased more than one-and-a-half times between 1947 and 1963; it accounted for about 14 percent of GNP in 1963, or roughly the same as in 1947. As the chart indicates, the ratio of the business sector to GNP has moved up and down in intervening years.

The government sector (spending on goods and services by Federal, state and local governments) is about one-third the size of the

¹ The foreign sector of the GNP accounts (net export of goods and services) is excluded from the discussion mainly because of its relatively small size.

1.
GROSS NATIONAL PRODUCT



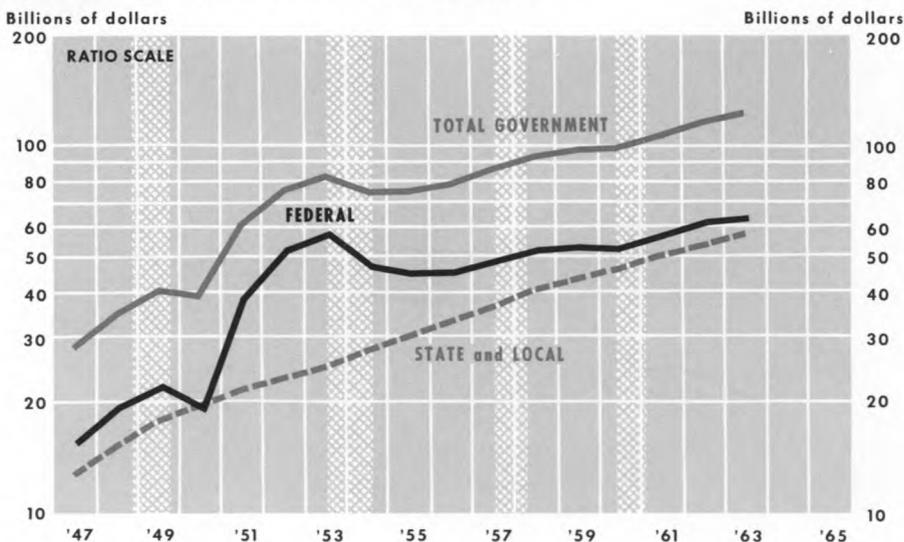
consumer sector and slightly more than twice that of the business sector. Following a doubling of government purchases of goods and services during the Korean War, this sector has shown a moderate but steady rise. Some relevant percentage increases are the following: since 1947 the government sector has increased more than four times; since 1953, the high mark associated with the Korean War, about one-half. As a percentage of GNP, the government sector accounted for about 21 percent in 1963, which is approximately the proportion that has prevailed in recent years.

It should be recognized that this concept of the total government sector measures only spending for goods and services, and thus represents the absorption by all levels of government of real resources such as labor of employees and goods and services purchased from business. This represents, therefore, the

portion of economic activity that is directly allocated by government; it does not include transfer spending that is allocated by government — such as the transfer of money to individuals for social security or unemployment benefits, or to other governments as grants-in-aid, or as payment of interest on debt. Nevertheless, it is important to remember that these redistributed or transferred funds in turn also enter the spending stream — get into the GNP — through other sectors of the economy — consumer, business, or other government.

Federal spending and state and local spending are shown separately in Chart 2 in order to illustrate the relative importance of each sector in the expansion of total government expenditures. Since the end of World War II, state and local spending for goods and services has increased in every year, with the gains ranging from \$2 to \$4 billion per year, and with the higher figure predominating in

2.
GOVERNMENT PURCHASES of GOODS and SERVICES



Source of data: U.S. Department of Commerce

recent years. Total state and local spending has increased about four-and-a-half times since 1947, while Federal spending has increased about four times. Putting it another way, while state and local spending accounted for two-fifths of total government spending in 1955, it had grown to 47 percent in 1963. Indications are clear that state and local spending will soon account for more than half of total government spending for goods and services.

RECEIPTS AND EXPENDITURES

In order to gain additional perspective on total government activity, it is necessary to consider the total spending and receipts of the sector, that is, direct spending for goods and services plus indirect payments. Table I presents the broad sweep of *Federal government* expenditures and receipts for selected years beginning in 1954.² In general, in

1963 about one-half of total Federal spending was for defense, about one-third for public welfare, and about 10 percent each for government operations and economic development.

The patterns that stand out in these total payments include the declining share of the total accounted for by defense.³ Defense spending represented about 60 percent of the total in 1954, compared with one-half in 1963. And this is so, notwithstanding the sharp increase in recent years due mainly to

² These data as well as similar data for state and local governments are taken from the budget of the National Income and Product Account. This budget is designed to provide a measure of the direct impact of fiscal activity on the nation's current flow of income and output.

³ It should be noted that within the GNP accounts Federal government spending for defense accounts for the large bulk of Federal purchases of goods and services.

the space program and an increase in military activity overseas. (Compare, for example, the figures for 1960 and 1963.) The volume of military expenditures thus explains the current high level of total Federal spending but not the rising trend.

The substantial increase in the welfare category also stands out in the figures — more than doubling since 1954 and moving up from approximately 20 percent of the total to about one-third of Federal cash payments. This has been due to increased emphasis on social and economic welfare programs, that is, to liberalization of existing programs as well as to introduction of new ones.

Spending in the general government category has a built-in growth factor for a number of reasons, including the need to provide additional services for an expanding population as well as the periodic increases in Fed-

eral salaries. Interestingly, spending for general government has tended to be maintained at about 10 percent of total spending. The other two general categories are a mixture of welfare and economic development programs and are further indications of expansion in nondefense areas. The figures in general thus reveal quite clearly the importance of nondefense spending in total Federal payments to the public.

The data on the Federal sector also suggest that the Federal government does a lot of reshuffling of money, or, in other words, the Federal government first taxes and then transfers funds to other sectors of the economy. As a result, outside of the defense area a relatively small amount of funds is expended by the Federal government in the direct purchases of goods and services. At the same time, the bulk of all government services to

TABLE I
Federal Government Expenditures and Receipts
Calendar years—Billions of dollars

	1954	1956	1958	1960	1962	1963
National Defense	42.1	41.3	45.9	47.1	55.6	57.6
Health, Education, Welfare,	13.8	15.9	23.0	25.5	31.1	32.8
Social Security and Special Welfare	8.1	9.8	15.9	17.7	22.1	23.0
General Government	6.7	7.3	7.7	9.5	10.1	11.0
Agriculture and Natural Resources	4.0	3.3	5.8	4.7	6.2	6.1
Commerce, Transportation and Housing	1.5	2.2	4.0	4.7	5.7	6.0
International Affairs and Finance	1.8	2.1	2.0	2.2	2.6	2.5
Less Government Sales	0.3	0.3	0.5	0.6	0.9	0.8
Total Expenditures	69.6	71.8	87.9	93.1	110.4	115.2
Personal Taxes	29.1	35.1	36.5	44.0	49.0	51.8
Corporate Profit Taxes	16.5	20.2	17.7	21.0	21.8	23.0
Contributions for Social Security	8.1	10.5	12.4	17.6	20.5	23.0
Total Excise Taxes	9.0	10.4	10.5	12.2	13.1	13.8
Other Taxes	1.1	1.3	1.4	1.8	2.0	2.0
Total Receipts	63.8	77.5	78.5	96.6	106.4	113.6

Source: U. S. Department of Commerce

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the civilian population is provided by state and local governments. This is reflected in the fact that spending by the Federal government has grown more slowly than state and local spending in virtually every category excluding defense, which does not exist at the latter levels. And this is the case, even though the Federal government has tended to preempt some of the major sources of revenue that are available to government in general.

As indicated in Table I, despite the substantial growth in the total the relative shares of *Federal revenue* contributed by the various categories have not changed appreciably in recent years, with the exception of social security contributions which have been the fastest growing source of funds. Social security contributions now account for about one-fifth of the total, compared with one-eighth in 1954. This rate of growth is due in part to increases in coverage and contribution rates.

On the other hand, the major source of Federal revenue continues to be personal tax receipts. The behavior of personal and corporate profits taxes is an indication of the relative pace of economic activity, and is reflected in their sources, i.e., personal income and corporate profits. The greater sensitivity of the business sector to swings in economic activity is suggested by the contrast between the receipts from these two taxes.

Reductions in the excise tax category are under consideration for 1965 action. This would not necessarily reduce the relative share of the total provided by excise taxes as a source of revenue. As is the case with the income tax categories, the relationships will continue to depend on the nature of tax reductions as well as the direction and pace of economic activity.

As shown in Table II, *state and local government* general expenditures totaled \$62.0

TABLE II
State and Local Government Expenditures and Receipts
Calendar years—Billions of dollars

	1954	1956	1958	1960	1962	1963
Education	10.1	12.4	15.2	17.8	20.7	22.4
Health and Welfare	9.1	10.4	12.5	14.2	16.2	17.3
Commerce, Transportation and Housing	5.9	6.8	8.8	8.9	10.0	10.9
General Government	3.8	4.7	5.9	7.0	8.1	8.9
Agriculture and Natural Resources	1.2	1.4	1.7	2.1	2.3	2.5
Total Expenditures	30.1	35.7	44.1	50.0	57.3	62.0
Property Taxes	10.0	11.8	14.0	16.4	19.6	21.0
Excise Taxes	6.5	8.0	8.8	10.9	12.4	13.4
Other Taxes	6.0	7.2	8.1	9.3	10.8	11.5
Federal Grants-in-Aid	2.9	3.3	5.4	6.3	8.0	9.1
Income Taxes	2.1	2.9	3.2	4.5	5.2	5.5
Contributions for Social Security	1.6	2.0	2.5	3.0	3.5	3.9
Total Receipts	29.1	35.2	42.0	50.4	59.5	64.4

Source: U. S. Department of Commerce

billion in 1963, more than double the amount spent 10 years earlier. This increase in expenditure levels has been accompanied by different rates of growth for the various functions performed by state and local governments. For example, while total expenditures increased 106 percent in the period under review, expenditures for education increased 122 percent. Despite the different rates of growth for individual functions, however, the proportionate allocation of total expenditures has not changed markedly in the past decade.

Table II clearly demonstrates the importance of education, health, and welfare services in state and local government spending patterns. For example, in 1963 these services accounted for nearly two-thirds of total expenditures. Although spending for health and welfare appears to have leveled off, education expenses have continued to advance rapidly, accounting for an increasing proportion of the total.

The nature of state and local expenditures in the years to come will depend on such factors as the pace of population growth with accompanying increases in the relative importance of school age and aged segments of the population, the acceleration in urbanization, and increased demands for a generally higher level of public services.

The overall increase in general revenues of state and local governments has in most instances kept pace with expenditures. Furthermore, as the table shows, the sources of state and local revenue did not shift significantly during the period under review. The largest relative increase occurred in Federal grants-in-aid to state and local governments. The proportion of total revenue provided by

grants-in-aid has been increasing steadily, and in 1963 accounted for more than 14 percent of total revenue.

Perhaps the most remarkable aspect of the distribution of revenue sources has been the performance of the property tax. Despite earlier dire predictions concerning its future, in 1963 property taxes provided one-third of total state and local government receipts, and were also the largest single source, or nearly 90 percent, of local government tax revenue. While local governments continue to rely heavily on property taxes, state governments have been steadily abandoning the use of such taxes.⁴

BUDGET IMPACT OF GOVERNMENT

Aside from the obvious task of allocating spending among alternatives and developing sources of revenue to pay for such spending, the budget of the government sector can be used as an important element in helping to balance total economic activity. In fact, it has become almost traditional for the Federal

⁴ One of the most pressing problems of local governments in the immediate future is the ability of the property tax to meet swiftly mounting expenditures. Most tax experts agree that real property ownership is no longer an efficient or equitable basis for determining ability to pay taxes, and with the current emphasis on industrial development many public officials are reluctant to recommend increases in property taxes that affect businesses. Thus, the residential real estate owner is caught in a squeeze that may prove to be intolerable. Furthermore, many major cities have discovered that the ability of residents to pay increased property taxes has diminished as higher and middle income groups move to the suburbs and, in turn, businesses follow these more affluent consumers to the suburbs. However, local governments have found it difficult to adopt other tax systems because nearly all alternative systems are being used by either the state or Federal governments.

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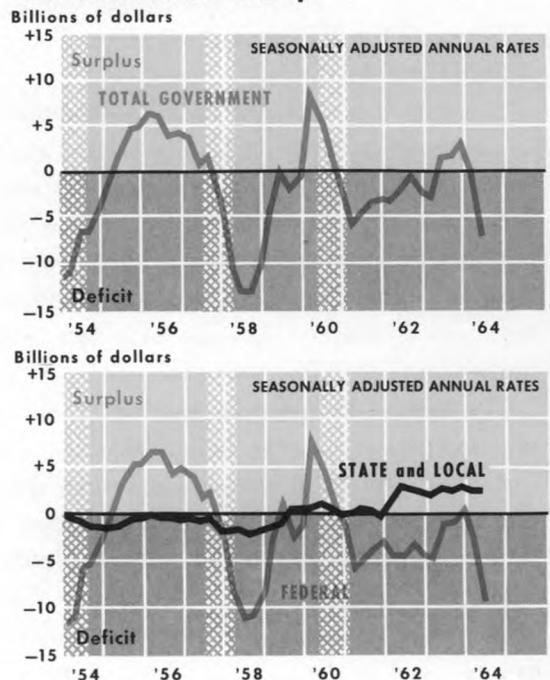
government budget to be used to dampen the business cycle. In other words, subject to conditions such as the existence of inflationary pressures, etc., the Federal budget would be in surplus during expansion and in deficit during recession. When the budget is in deficit it is an expansionary factor in the economy, since the government is adding to economic activity by spending more than it receives in revenue. The gap between receipts and expenditures is of course covered by borrowing, which means an increase in the public debt. On the other hand, a budget in surplus is restrictive to the economy, that is, the government is restraining economic activity. A large part of the countercyclical behavior of the budget occurs automatically — on the receipts side in response to changes in economic activity and the level of income, and on the expenditures side mainly because of welfare programs. Much of the budget impact is also discretionary, however, being effected through an increase or decrease in spending programs.

Although swings in Federal budget figures have not reacted to the business cycle as quickly and as fully as desired, as indicated in Chart 3 there has been a general conformance to countercyclical budget behavior, at least until the present advance in business activity. Recently, there have been almost continuous budget deficits, reflecting reduced emphasis on balancing the budget over short periods of time, and more stress on using the budget impact to stimulate the overall growth of the economy. Thus, the recent liberalization of depreciation allowances and the investment tax credit represent attempts to encourage greater spending and investment by

the private sector. So too, even though it meant sizable deficits during an upswing in business activity, the tax cut last March represented an effort to produce greater growth by reducing the drag of the tax structure on the economy. That a drag did exist is evidenced by developments in 1963, when the budget was moving toward surplus (which would tend to restrict economic activity), while the economy had not yet reached a generally accepted level of full employment.

Although there has been a conscious effort at the Federal level to use fiscal policy both countercyclically and, more recently, to encourage economic growth, state and local governments have not played an important

3.
GOVERNMENT BUDGETS
- National Income Concept



Source of data: U.S. Department of Commerce

part in economic stabilization, nor can they be expected to do so. Budget figures show that state and local governments in the aggregate have been operating nearly in balance over the past 10 years. During recession periods there have been very small deficits while the current expansion has been characterized by modest surpluses.

This, however, should not necessarily be taken as an indication of what some people refer to as "fiscal responsibility" on the part of state and local governments. The fact is that these budget figures do not include all of the expenditures of state and local governments. A large part of the capital spending of state and local governments and the non-guaranteed debt incurred to finance such spending is not included in the budget figures. Only the spending from the proceeds of borrowing with guaranteed securities—those that are backed by the full taxing power of the issuing unit of government—is considered as part of state and local expenditures. Non-guaranteed debt instruments, or revenue bonds, are obligations whose principal and interest are payable solely from pledged specific revenue sources (such as tolls collected on a limited-access highway). Since they are not guaranteed by the full faith and credit of the issuing body, the spending of the proceeds of these securities is not included as part of state and local expenditures.

Long-term nonguaranteed state and local debt grew from \$9.9 billion in 1954 to \$32.4 billion at the end of fiscal year 1963. When expenditures resulting from nonguaranteed debt are counted as a part of their activity, it is evident that state and local governments incurred a constant deficit in the period under

review. Thus, the aggregate spending of state and local government has actually provided a continuous stimulus to economic activity, and has performed in a countercyclical fashion only during periods of recession.

GOVERNMENT DEBT

While various circumstances dictate whether a state or local government will issue a guaranteed security, *all* direct obligations issued by the Federal government are fully guaranteed, that is, backed by the full faith and credit of the United States government. The lender is assured of complete safety in his investment, knowing that the full taxing power of the Federal government guarantees that he will always receive both the contracted interest payment, and the par value for his security when held to maturity.

The greatest part of Federal (public) debt was incurred during World War II. The Federal debt stood at \$48.5 billion at the end

TABLE III
Government Debt in the United States
(in billions of dollars)

End of Fiscal Year	Federal ¹	State and Local
1954	271.3	38.9
1955	274.4	44.3
1956	272.8	49.2
1957	270.6	52.7
1958	276.4	58.2
1959	284.8	64.1
1960	286.5	70.0
1961	289.2	75.0
1962	298.6	81.0
1963	306.5	87.5

¹ Includes total gross debt and guaranteed obligations held outside the Treasury.

Sources: U. S. Treasury Department and U. S. Department of Commerce

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of fiscal year 1940, rose to a wartime peak of \$279.8 billion in February 1946, and settled back to \$259.5 billion at the end of 1946. Since that time most of the increase in the debt can be traced to the Korean War, a step-up in military preparedness during the cold war, and deficit spending to combat recessions. In contrast, state and local indebtedness has been incurred mainly to finance capital projects, such as educational facilities, public housing, mass transit improvements, urban renewal, and roads and highways.

Total state and local indebtedness rose by 122 percent between fiscal 1954 and 1963. During the same period, the Federal debt grew at a much slower pace, rising 11 percent to a level of \$306.5 billion on June 30,

1963. (The Federal debt subsequently increased to \$312.5 billion by the end of fiscal 1964.)

Although Federal debt has increased by relatively small amounts in recent years, the borrowing of new money and the refinancing of maturing issues for a debt of such size are bound to influence importantly the nature of economic conditions, particularly as they affect credit and capital markets and interest rates. This in turn involves the important association between the tasks of Federal debt management and Federal Reserve monetary policy as the former attempts to handle the large public debt and the latter attempts to maintain money and credit conditions consistent with the broad objectives of the economy.



PERSPECTIVE ON PRICES —

A FURTHER NOTE

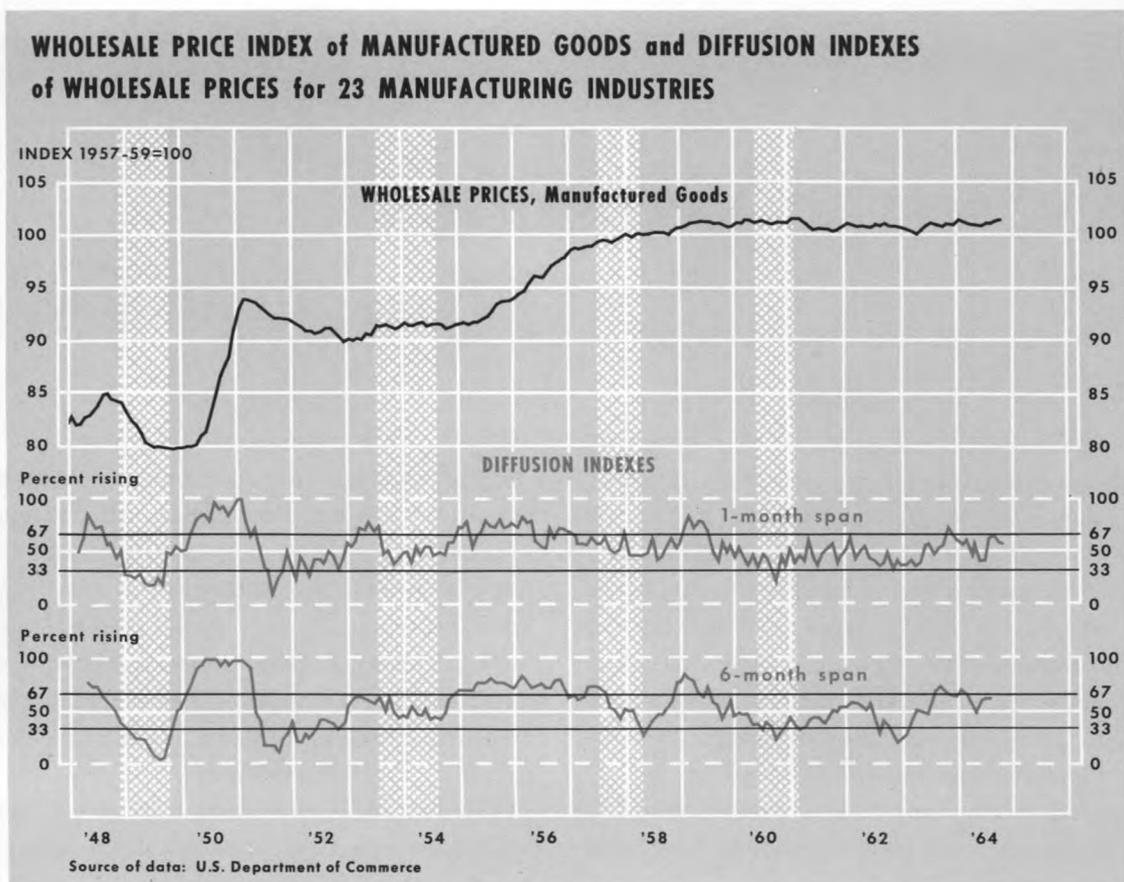
THE ARTICLE "Perspective on Prices," which appeared in last month's *Economic Review*, included a discussion on price diffusion indexes. It was pointed out in the article that diffusion indexes have been designed by the Bureau of the Census to aid in the early recognition of general movements in wholesale prices. It was also explained that the diffusion index of wholesale prices for 23 manufacturing industries tends to foreshadow changes in the Wholesale Price Index of total manufactures.

Observers who pay close attention to price developments are aware that a sharp rise in the diffusion index during 1963 was followed by only a modest firming in the prices of manufactured goods. Because of this, a legitimate question may be raised as to whether the 1963 experience encroaches upon the reliability of the price diffusion index. The purpose of this article is twofold: first, to examine that question specifically and, second, to consider broadly the forecasting properties of the diffusion index of manufacturers' wholesale prices in an attempt to improve understanding of its behavior.

Price changes in manufacturing tend to spread from firm to firm and from industry to industry. Cyclical peaks and troughs in individual price series, however, are not randomly distributed over time; instead they tend to cluster. A diffusion index attempts to depict the prevasiveness of price changes by measuring the percent of price series rising or falling over selected periods of time.

The record of the price diffusion index, beginning with 1948, is shown in the accompanying chart, together with the WPI of total manufactures. Diffusion indexes computed on 1-month and 6-month spans are illustrated, since each of these has certain advantages in the analysis of price behavior.¹ Short-term changes in the direction of price movements are revealed by the 1-month span diffusion index. Since month-to-month price changes often are irregular, it is helpful to use a span of six months, which both avoids emphasis on

¹ These indexes are published monthly in *Business Cycle Developments*, U. S. Department of Commerce. The chart follows the convention established by the Bureau of the Census of centering the 6-month span diffusion index in the middle of each interval over which the change is measured. (The index could be plotted on the terminal month of the span.)



erratic monthly movements and reveals more clearly cyclical elements. It should be noted, however, that while the 6-month span diffusion index shows what is happening over successive 6-month intervals, it does not reveal price movements *within* the intervals.

BEHAVIOR OF THE DIFFUSION INDEXES AND MANUFACTURERS' WHOLESALE PRICES IN RETROSPECT

The sequence of major swings in the diffusion indexes and corresponding movements in the WPI of total manufactures can be seen in the chart. During 1948, sharp declines in the diffusion indexes, both 1-month and 6-

month spans, preceded by six months a significant decline in the WPI of total manufactures. The diffusion index on a 1-month span began to increase during the last half of 1949; on a 6-month span it moved up steadily from 6.5 percent in July 1949 and crested in 1950—early 1951 between 95.7 percent and 100.0 percent. Those developments were underway *before* the outbreak of the Korean War in June 1950 and *before* manufacturers' wholesale prices began to spiral upward in May 1950.

As the WPI of total manufactures approached a cyclical peak early in 1951, more and more components of the diffusion index began

to decline. Early in 1951 the downswing in the 1-month span diffusion index signaled a change in the direction of prices while the 6-month span diffusion index was still on a high plateau. When both diffusion indexes fell below the 50 percent level, the WPI of total manufactures began a decline that lasted almost two years. The rate of decrease in the aggregate price index was slowed down, however, when the diffusion indexes turned upward during the last half of 1951. After that upswing carried both diffusion indexes above 50 percent in late 1952, the aggregate price index bottomed out and began to firm early in 1953.

The period of stability in the WPI of total manufactures during the 1953-54 recession was accompanied by fluctuations in the diffusion indexes around the 50 percent level. A sustained advance in the 6-month span diffusion index, beginning in September 1954, foreshadowed the inflationary episode that began in mid-1955. Between May 1955 and April 1956, the diffusion index on a 1-month span remained above a level that showed two-thirds of the series rising, while the diffusion index on a 6-month span was above the 67 percent level from November 1954 to November 1956.

During the 1957-58 recession, the 6-month span diffusion index was declining, but holding within the 67 percent—50 percent range for the most part, while the rate of increase in prices of manufactured goods was retarded. Between April 1958 and November 1958 the 6-month span diffusion index rose sharply from 28.3 percent to 80.4 percent and then remained above 80 percent through May 1959.

The WPI of total manufactures, however, increased only 1.2 percent from October 1958 to May 1959. The behavior of both the diffusion index and the aggregate price index in the 1958-59 period approximates the experience of 1963 and early 1964.

RECENT BEHAVIOR OF THE DIFFUSION INDEX AND MANUFACTURERS' WHOLESALE PRICES

A decline in the 6-month span diffusion index during 1962 anticipated a softening in the aggregate price index from 101.1 percent in September 1962 to a cyclical low of 100.00

TABLE I
Recent movements in the diffusion index of wholesale prices for 23 manufacturing industries and in the WPI of total manufactures

	Percent Rising During 6-month Span		Diffusion Index Centered On	WPI, Total Manufactures
23.9%	Aug. '62-Feb. '63		Nov. '62 100.4	Feb. '63
26.1	Sept. '62-Mar. '63		Dec. '62 100.2	Mar. '63
30.4	Oct. '62-Apr. '63		Jan. '63 100.0	← Apr. '63
45.7	Nov. '62-May '63		Feb. '63 100.4	May '63
54.3	Dec. '62-June '63		Mar. '63 100.8	June '63
52.2	Jan. '63-July '63		Apr. '63 101.0	July '63
50.0	Feb. '63-Aug. '63		May '63 100.8	Aug. '63
58.7	Mar. '63-Sept. '63		June '63 100.7	Sept. '63
71.7	Apr. '63-Oct. '63		July '63 100.9	Oct. '63
76.1	May '63-Nov. '63		Aug. '63 100.9	Nov. '63
73.9	June '63-Dec. '63		Sept. '63 100.9	Dec. '63
← 69.6	July '63-Jan. '64		Oct. '63 101.3	← Jan. '64
67.4	Aug. '63-Feb. '64		Nov. '63 101.1	Feb. '64
67.4	Sept. '63-Mar. '64		Dec. '63 100.9	Mar. '64
73.9	Oct. '63-Apr. '64		Jan. '64 100.9	Apr. '64
67.4	Nov. '63-May '64		Feb. '64 100.8	← May '64
60.9	Dec. '63-June '64		Mar. '64 100.8	June '64
50.0	Jan. '64-July '64		Apr. '64 101.1	July '64
60.9	Feb. '64-Aug. '64		May '64 101.0	Aug. '64
63.0	Mar. '64-Sept. '64		June '64 101.2	Sept. '64
63.0	Apr. '64-Oct. '64		July '64 101.4	Oct. '64

Source: U.S. Department of Commerce

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percent in April 1963. Beginning in December 1962 the diffusion index turned upward. Table I presents the monthly details of that advance, which culminated in the 6-month span diffusion index ranging between 67 percent and 76 percent for an 8-month period (shown by the broken bracket). That is to say, for each of the months on which the diffusion index is centered from July 1963 through February 1964, between two-thirds and three-fourths of the 23 manufacturing price groups

were registering higher prices as compared with the levels of each preceding six months.

Prices of manufactured goods increased 1.3 percent from April 1963 to January 1964. Between April 1963 and May 1964, which is the entire period embraced by the diffusion indexes centered within the bracketed area, the net increase in the WPI of total manufactures was only 0.8 percent (see pointers in Table I).

The data in Table II help to explain the

TABLE II

Changes in Wholesale Prices of 23 Manufacturing Industries over Selected Periods

	Relative Importance*	Net Change in Points		
		Apr. '63 to Jan. '64	Jan. '64 to May '64	Apr. '63 to May '64
Durable Goods				
Lumber and wood products	3.23%	+2.0	+2.8	+4.8
Furniture and other household durables	5.04	+0.3	+0.2	+0.5
Nonmetallic mineral products	3.64	-0.4	+0.2	-0.2
Iron and steel	6.00	+1.7	+0.1	+1.8
Nonferrous metals	3.56	+3.2	+2.5	+5.7
Fabricated structural metal products	2.41	+1.4	-0.3	+1.1
Fabricated nonstructural metal products	2.21	+5.5	-1.1	+4.4
General purpose machinery and equipment	2.50	+1.4	—	+1.4
Miscellaneous machinery	1.70	+0.7	+0.3	+1.0
Electrical machinery and equipment	5.87	-0.1	+0.8	+0.7
Motor vehicles	6.33	-0.4	+1.4	+1.0
Miscellaneous products	4.12	+4.6	-5.4	-0.8
Nondurable Goods				
Processed foods	17.68	+3.2	-3.1	+0.1
Tobacco products and bottled beverages	3.16	+3.2	-0.3	+2.9
Cotton products	2.54	+1.2	-1.7	-0.5
Wool products55	+2.4	-0.4	+2.0
Manmade fiber textile products	1.69	+0.9	+1.3	+2.2
Apparel	4.75	+1.0	+0.4	+1.4
Pulp, paper and allied products	6.06	+0.8	-1.1	-0.3
Chemicals and allied products	8.23	—	+0.4	+0.4
Petroleum products, refined	5.12	-1.6	-4.4	-6.0
Rubber and rubber products	1.75	-0.4	-1.1	-1.5
Hides, skins, leather, and leather products	1.89	-1.8	+2.0	+0.2
Total Manufactures Price Index	—	+1.3	-0.5	+0.8

*As a percent of the 23 manufacturing industries' total.

Sources: U. S. Department of Commerce; U. S. Department of Labor.

moderate firming in manufacturers' wholesale prices at a time when the 6-month span diffusion index first rose sharply and then hovered at a high level for eight months. It should be noted that, between April 1963 and May 1964, the 1-month span diffusion index was above the two-thirds level for only two months. In contrast, previous high levels of the 6-month span diffusion index were accompanied by significant periods of high values in the 1-month span (see chart).

Price changes in the 23 component series are grouped into three periods in Table II. Over the first period, April 1963 to January 1964, sixteen price series increased, one series was unchanged, and six series declined. Most of the price increases were moderate, i.e., 2 percent or less. The weighted effect of price declines on the WPI of total manufactures was less than -0.2 percent.

Price Groups With Net Declines From April '63 to January '64	Weighted Effect of Price Declines ²
Petroleum products, refined	-.082%
Hides, skins, and leather products	-.034
Motor vehicles	-.025
Nonmetallic mineral products	-.015
Rubber and rubber products	-.007
Electrical machinery and equipment	-.006
Total	-.169

Exclusion of the above six price groups from the aggregate index would have resulted in a 1.5 percent increase in the WPI of total manufactures instead of the actual 1.3 percent increase.

Over the second period, January 1964 to May 1964, twelve price series increased, one

² Derived by multiplying net change in percentage points times the relative importance of the item.

was unchanged, and ten series declined. The weighted effect of price declines on the WPI of total manufactures was -1.2 percent.

Price Groups With Net Declines From January '64 to May '64	Weighted Effect of Price Declines
Processed foods	-.548%
Petroleum products, refined	-.225
Miscellaneous products	-.222
Pulp, paper and allied products	-.067
Cotton products	-.043
Fabricated nonstructural metal products	-.024
Rubber and rubber products	-.019
Tobacco products and bottled beverages	-.009
Fabricated structural metal products	-.007
Wool products	-.002
Total	-1.166

Exclusion of the above ten price groups from the aggregate would have resulted in a 0.7 percent increase in the WPI of total manufactures from January 1964 to May 1964 instead of the actual 0.5 percent decrease. If only one group—processed foods—were excluded, there would have been virtually no change in manufacturers' wholesale prices.

Over the entire period, April 1963 to May 1964, seventeen price groups showed net price increases and six groups showed net price declines. The weighted effect of price declines on the WPI of total manufactures was -0.4 percent.

Price Groups With Net Declines From April '63 to May '64	Weighted Effect of Price Declines
Petroleum products, refined	-.307%
Miscellaneous products	-.033
Rubber and rubber products	-.026
Pulp, paper and allied products	-.018
Cotton products	-.013
Nonmetallic mineral products	-.007
Total	-.404

ECONOMIC REVIEW

Exclusion of the above six price groups from the aggregate would have resulted in a net increase of 1.2 percent in manufacturers' wholesale prices from April 1963 to May 1964, instead of the actual increase of 0.8 percent.

CONCLUSION

The foregoing discussion illustrates several possible shortcomings in the forecasting properties of the diffusion index, at least as based on experience during recent years. First, each price group has an equal weight in the diffusion index, although there are wide disparities in the relative importances of the individual groups.³ Second, in computing the diffusion index *very small* price increases (e.g., 0.1 percent) are counted as pluses. As previously noted, exclusion of those price groups that actually declined would have added only a small amount to the rise in the aggregate price index; in other words, although price changes were large in

³ A computation by this Bank of a 6-month span diffusion index, weighted by the relative importance of each price group, gave values above 67 percent for only two of the eight high-level months bracketed in Table I; the values for the remaining six months ranged between 53 percent and 64 percent.

number they were small in magnitude. Third, there is no published aggregate price index that corresponds precisely to the diffusion index, although the WPI of total manufactures is a close approximation. Commodities such as iron ore, scrap metals, hides and skins, and natural rubber are *excluded* from the WPI of total manufactures but are *included* in the 23 groupings of the diffusion index. Price subgroups such as hardware, plumbing and heating equipment, agricultural machinery, construction machinery, and metalworking machinery are *included* in the WPI of total manufactures but are *excluded* from the components of the diffusion index. Since the diffusion index contains some of the more sensitive commodities, it will often respond more easily to price movements than does the WPI of total manufactures.

Despite the limitations that have tended to converge recently, the diffusion index has a longstanding ability to anticipate changes in wholesale prices. Thus, movements in the price diffusion indexes, both on 1-month and 6-month spans, will continue to merit careful consideration by analysts of price developments.



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Fourth Federal Reserve District