COMMENTS ON PRICE INDEXES AND INFLATION

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2/71

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"Yes," said Michael, "and He said He would establish Natural Law - the Law of God - throughout His dominions, and its authority should be supreme and inviolable."

Letters From the Earth
Mark Twain

The purpose of this paper is twofold: (1) to provide a

brief summary of the three major price measures of the United States

economy which will permit the economic layman to understand the fun-

damental concepts of the construction of the indexes and what they

are attempting to measure[1]/ and (2) to discuss some of the problems

inherent in these indexes as measures of inflation.

All of the measures discussed are indexes. Therefore, they

can only be used as measures of price changes--the level of the index

has no intrinsic meaning except as a comparison against other values

of itself. Consequently, comparisons between the levels of two dif-

ferent indexes are of limited value. One common error in this regard

is to use the Consumer Price Indexes of two different cities to infer

that the cost of living in one city is higher than in the other. This

fallacious use of the Consumer Price Index possibly arises from the

fact that it is frequently referred to as the "cost of living" index

when a more accurate description would be "change in the average cost

of living" index since it is in fact measuring price changes from some

base period.

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[1]/Essentially all of the material in this paper pertaining
to the description of price indexes is abstracted from the following
government publications:
> (1) U.S. Department of Labor, Bureau of Labor Statis-
> tics, Handbook of Methods for Surveys and Studies,
> (Bulletin No. 1458)
> (2) _____, The Consumer Price Index: History and
> Techniques, (Bulletin No. 1517)
> (3) U.S. Department of Commerce, Office of Business
> Economics, Business Statistics 1969
> (4) U.S. Congress, Joint Economic Committee, 1967
> Supplement to Economic Indicators
> The Monthly Labor Review and the monthly releases of
> the CPI and WPI are also valuable sources of information.
Also see a paper written from a similar point of view as this one by
William H. Wallace, Measuring Price Changes: A Study of the Price Indexes,
published by the Federal Reserve Bank of Richmond, December 1970.

Another improper use of price indexes is to take the difference between the Consumer Price Index and the Wholesale Price Index as a measure of profit margins. That this is a meaningless inference, if not clear from the discussion so far, will be from that which follows on the individual indexes.

The first part of this paper considers the fundamental concepts underlying the three most common price indexes of the United States economy. The second part discusses these price indexes in the context of measuring inflation. Some alternative price measures are also calculated and compared with the published data of the relevant alternatives. The primary conclusion of this discussion is that while all price indexes have deficiencies, they also have a contribution to make in analyzing inflation. Raising the question as to which of the indexes is the best forces the investigator to establish appropriate "goodness" criteria, and these are likely to be different for different questions.

The Consumer Price Index

The Consumer Price Index (CPI) is an abbreviation for the price index whose official title is <u>Consumer Price Index for Urban Wage Earners and Clerical Workers</u>. Thus, the CPI, which is compiled by the Bureau of Labor Statistics (BLS), is not necessarily applicable to persons who fall into such categories as the self-employed, farmers, or rural inhabitants.

The CPI is a fixed weight or fixed "market basket" index which measures the price changes of about 400 goods and services commonly purchases by urban wage earners. This representative market basket and the relative importance of each item in the consumer's budget were established from data gathered in the Survey of Consumer Expenditures

taken during 1960-61. Major categories of expenditures together

with their relative importance in the index are shown in Table I.

TABLE I

Weights in the Consumer Price Index

(as of December 1963)

Food	22.43
Housing	33.23
Apparel and Upkeep	10.63
Transportation	13.88
Health and Recreation	19.45
Miscellaneous	.38
	100.00

Special Groups:

Commodities		65.97
Durable	18.78	
Nondurable	47.19	
Services		34.03
		100.00

The constancy of this percentage distribution of expenditures is what

causes the CPI to be referred to as a fixed weight index. The weights

reflect annual relative expenditures on particular commodities so that

the fixed weight system results in minor difficulties of interpretation

in particular months of the year. Golf fees, for example, are allocated

the same weight in the index during all 12 months even though during

the year there would be a substantial seasonal change in these expenditures.

Average family (after tax) income of the Survey panel in 1960 was about $6,250, while median (before tax) family income for the entire U.S. was about $5,620.[2] Thus the weight patterns shown in Table I appear to reflect those of the above average income family but neither the rich nor the poor.

Computation of the CPI generally follows the formula

$$(1) \quad I_t = \frac{\sum\limits_i (p_{oi} q_{oi}) \dfrac{P_{ti}}{P_{oi}}}{\sum (p_{oi} q_{oi})} \times 100$$

where I_t = the price index for period t,

P_{oi} = the price of the ith commodity in the base period (indicated by the first subscript value of o),

q_{oi} = the quantity of the ith commodity in the base period

$\sum$ means sum over all the commodities,

and

p_{ti} = the price of the ith commodity during period t.

The essence of this formula may be seen more clearly if the factor 100 is ignored (since it only serves to make the base of the index 100 rather than 1) and the summation is expanded as

$$(1') \quad I_t = \frac{p_{o1} q_{o1}}{E} \cdot \frac{p_{t1}}{p_{o1}} + \frac{p_{o2} q_{o2}}{E} \cdot \frac{p_{t2}}{p_{o2}} + \cdots$$

where $E = \sum\limits_i p_{oi}$ is the total expenditure on all items in the index in the base period.

Formulas (1) and (1') both reflect the fact that changes in the index through time come only from changes in commodity prices through time. The products $p_{oi} q_{oi}$ are the expenditures on each commodity in the base period and are fixed through time. It is these values, relative

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[2]/To help keep this number in perspective, median family income in 1969 was about $9,400.

to the total value of purchases, which are reflected in Table I.[3]

These "value weights" serve as multipliers against the "price relatives" (p_{ti}/p_{oi}), and the products are summed to obtain the total index.

The weights in Table I may be interpreted as follows. Since food has about a 22 percent weight in the total index, a 10 percent increase in the price of food will result in an increase of approximately 22 percent of 10 percent or 2.2 percent in the total index, assuming other prices are unchanged. Similarly, with service prices unchanged, a 10 percent increase in the price of durable commodities together with a 10 percent decline in nondurable commodities will result in a decline in the total index of about 2.8 percent, approximately 10 percent of the difference in the weights.

Price data for most of the 400 items in the market basket are collected by personal visits of BLS agents. A few, such as utility rates, are collected by mail, and some, home purchases, for example, are collected from other government agencies. To the extent possible, the BLS adjusts the price index for quality changes as well as for the elimination of old and introduction of new commodities. Elaborate statistical procedures are employed to handle these and other problems encountered in this complex price survey.

The CPI attempts to measure prices which are actually paid by a consumer for a particular commodity; therefore, sales and excise taxes are included in the compilation of the index as are real

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[3] In actual practice, it is only the quantities (q_{oi}) which remain invariant with time, for the prices are in fact adjusted from time to time to give a more accurate reflection of current relative money outlays for the market basket. As formula (1) stands, it is a Laspeyres type of index; but because of the adjustments performed in actual calculations of index, the CPI is referred to as a modified Laspeyres type index.

estate taxes which are treated as a cost of home ownership. Mortgage interest is also included in the index, but its weight reflects the fact that only a relatively small number of persons incur new mortgage debt during any given year. While an increase in mortgage rates may have a large impact on the individual contracting for a new mortgage, it has no direct effect on existing mortgages. These considerations illustrate the two fundamental ideas inherent in the CPI: it attempts to measure the average impact of price changes on a particular classification of individuals.

The Wholesale Price Index

With data extending back to 1890, the Wholesale Price Index (WPI) is one of the oldest continuous statistical series published by the Federal Government. It attempts to measure price changes of goods sold in primary markets throughout the United States. In fact, the word "wholesale" in the title is somewhat of a misnomer since "primary," as used here, means sales in large quantities and not prices received by wholesalers, jobbers, or distributors. Prices used in constructing the index represent, for the most part, the first significant commercial transaction in the United States for that particular commodity. Transactions for the same item are not included at all stages of the distribution system except insofar as they are transformed into semi-finished and finished goods.

The BLS attempts to maintain continuity over time in the index by adjusting for quality changes and changes in contract and shipping terms which are treated as part of the price of the product. Most of the price quotations which go into the compilation of the index are received through mail questionnaires wherein the producer lists in

detail the price and terms of actual market transactions for a well-specified product. Participation is entirely voluntary. A few prices, particularly for grains and livestock, are taken from organized exchanges or other government agencies.

Unlike the CPI, the WPI excludes excise taxes as well as subsidies to the producer insofar as they can be identified and allocated on a per unit basis. Also excluded are goods sold at retail directly from the producing establishment and military goods. Nonmilitary government-purchases goods are included.

The actual computation of the WPI is essentially the same as that described above for the CPI; value weights are applied to price relatives and summed to obtain the total index. Thus, the WPI is also a fixed weight or market basket kind of index, but these value weights are determined by the value weights are determined by the value of shipments of commodities within the various industrial classifications. The current weighting scheme, shown in Table II for selected industrial classifications, is primarily based on the 1963 Census of Manufacturers.

TABLE II

Wholesale Price Index Weights

Farm Products	10.64
Processed Foods	16.53
Industrial Commodities	72.83
	100.00

While price data for the CPI are collected during the entire month, price observations for the WPI are generally taken on one particular day of the month—in most cases, the Tuesday of the week containing the 15th day of the month. In terms of number of subindexes, however,

the WPI is much more extensive than the CPI. Data are collected on
over 2,000 commodities. The BLS attempts to have at least three
respondents for each of the individual items so that a wide variety
of subindexes may be published. Essentially no regional data is avail-
able from the WPI compilations which corresponds to the city informa-
tion available via the CPI collection process.

The Implicit GNP Deflator

Of all the measures of inflation which are currently avail-
able, the implicit deflator of total Gross National Product is the most
paradoxical in that it is the easiest to define but the most difficult
to interpret. An index of price changes in the GNP, it is defined as
the ratio of current dollar (or money) GNP to constant dollar (or real)
GNP.

The fundamental difference between the deflator and the CPI
and WPI discussed earlier is that the former is a variable weight index
while the latter have fixed weights. Thus the deflator cannot be thought
of as a measure of price changes in a fixed market basket through time,
It more closely represents the price changes in the market basket of
goods and services actually purchases through time and it is these
shifts in the market basket which make the resulting measure difficult
to interpret.[4/] Consideration of the way in which the various output
measures are constructed will perhaps clarify the confusion.

The value of total output of goods and services in the United
States at any point in time (Y_t) is simply the sum of its various

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[4/] The implicit deflator may be thought of as having an alge-
braic formulation which is essentially the same as (1) except that the
q_{oi}'s are replaced by q_{ti}, i.e., the value weights use current rather
than base period quanties. For this reason the GNP deflator is re-
ferred to as a modified Paasche type index.

components, that is,

$$(2) \quad Y_t = \sum_i Y_{it}$$

where Y_{it} is the ith component of GNP--personal consumption of resi-

dential construction expenditures, for example.

At the finest level of disaggregation possible, the Commerce

Department's Office of Business Economics (OBE) uses CPI and WPI data,

along with other information, to construct a component price index

(p_{it}) which is then used to compute "real" output (x_{it}) for that parti-

cular component. Total real GNP is then defined to be

$$(3) \quad x_t = \sum_i x_{it}$$

where, by definition,

$$(4) \quad x_{it} = \frac{Y_{it}}{p_{it}} \quad \text{or} \quad Y_{it} = x_{it} \, p_{it}$$

The overall price index that is implicit in all of these calculations

is the GNP deflator (p_t) which is simply defined by

$$(5) \quad p_t = \frac{Y_t}{x_t} \, .$$

In order to see the variable weighting scheme more clearly, (4) can be

substituted into (2) and the summation expanded into separate terms

so that the deflator may be written as

$$(6) \quad p_t = \left(\frac{x_{1t}}{x_t}\right) p_{1t} + \left(\frac{x_{2t}}{x_t}\right) p_{2t} + \cdots$$

The GNP deflator is clearly a weighted sum of the component price indexes

where the weights are the individual component shares of real GNP.

Because these component shares of real GNP will vary from period to

period, the implicit deflator is called a variable weight index. Table III

shows the weights for a particular component disaggregation of real

GNP at two different points in time.

TABLE III

Weights For the GNP Deflator

(Excluding Inventories and Net Exports)

	1958	1969
Personal Consumption Expenditures		
Durable Goods	.085	.118
Nondurable Goods	.314	.280
Services	.251	.252
Business Fixed Investment		
Nonresidential		
Structures	.037	.033
Producers durable equipment	.056	.079
Residential structures	.046	.033
Government Purchases		
Federal	.120	.105
State and Local	.091	.100
	1.000	1.000

Measuring Inflation

One of the primary reasons for developing price indexes is to measure inflation. The various price indexes described here serve as inputs to the monetary and fiscal policy decision process as well as partial indicators of the effectiveness of past policy decisions. The three basic price indexes clearly attempt to measure different phenomena: the CPI attempts to measure price changes of a fixed "market basket" of final products, the WPI, prices changes in production

inputs, and the GNP deflator, the average price change implicit in the total output of goods and services of the nation.

There are two fundamental aspects to the concept of inflation. First of all, it is a dynamic phenomenon. Inflation means a continually rising price level as opposed to a rise in the price level at a particular point in time without further rises thereafter. In this context, some economists meaintain that inflation requires not only a rising price level, but also the expectation of further rises.

Secondly, inflation is diffuse; it must arise from the upward movement of the prices of many items which constitute a significant part of total expenditures. A situation where all prices were unchanged except those of mink coats, therefore, should not be classified as an inflation.

There are, of course, certain quantitative aspects to inflation which are beyond the scope of this discussion. For example, is a dynamic and diffuse rise in prices at a rate of 0.5 percent per year an inflationary situation? What about such a rise in the prices of 100 of the 400 CPI items?

Although the three basic price indexes measure different kinds of price changes, they all compliment each other within the context of measuring inflation. A single price index which all analysts are willing to use as an inflation measure has not yet been developed. Depending on the particular question raised about inflation, only one or perhaps some combination of the three indexes may be relevant.

The tables and charts in this report present data on the three major price indexes plus selected components beginning in 1961.

For the latter part of the decade at least, all of the data indicate that the above criteria for an inflation have been satisfied (see Charts I, III, and IV). Since 1965, all three major indexes have been rising at a significant rate, and the advance has been widespread among all components. Also, as can be seen from the data in Table IV and Chart II, the Twin Cities metropolitan area has participated in the national inflation.

Since the GNP deflator is the most comprehensive of all the price indexes, it is perhaps natural to lean more heavily on this index for information concerning a general inflation. However, as the weights are changing from quarter to quarter, short term movements in prices may be obscured by weight changes. If the nation's expenditure patterns shift toward those goods and services which are experiencing the most rapid price rises, the deflator will tend to overstate the rate of price increase, at least relative to a fixed weight index. Conversely, if the nation's expenditure pattern shifts away from those goods and services whose prices are rising most rapidly, then the deflator will tend to understate the rate of price increase.

In order to investigate this question, a fixed weight GNP deflator was constructed using the 1958 distribution of expenditures as weights.[5] This data is presented in Table VIII and Chart V. Although there are a few quarters when the two deflators differ

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[5] The fixed weight deflator was actually constructed net of inventories and net exports because of the conceptual problems in the deflators for these two components. The results, however, are consistent with the more sophisticated analysis presented in Allen H. Young and Claudia Harkins' "Alternative Measures of Price Change for GNP," Survey of Current Business, (March 1969), pp. 47-52.

significantly in their rates of growth (say, by as much as 0.5 percent), the general picture of inflation during the 1960's presented by the two indicators is essentially the same. While consumers have tended to shift expenditures toward durable goods and relatively slowly advancing prices, from nondurable goods with relatively rapidly advancing prices they have slightly increased their relative real expenditure on services with the highest rate of price advance. Business spending over this period has tended to shift in the direction of equipment with relatively slow rates of price advance. But a major factor in maintaining the overall growth in the actual deflator was the shift in government expenditures from the federal to the state and local sector where the price advance has been the highest of all major GNP components.

There are many reasons to be concerned about the inflation problem, but certainly a primary one is that in effect inflation is a tax on consumers. In this context, the CPI is the natural index to analyze although the limitations discussed earlier must always be kept in mind.

Since inflation does act as a tax on consumers, certain computations were made to attempt to gain some idea of the impact of this "tax" on various consumer groups. Table VII presents data for the CPI whose major components have been reweighted using expenditure patterns established by the Bureau of Labor Statistics for low, moderate, and high budget families.[6] As the table shows, there is essentially no

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[6] This is a very crude sort of experiment not only because of lack of comparability of data between the budget study and the CPI data, but also because the expenditure patterns within major components (as shown in Table I) are assumed to be identical. The budget data are taken from Jean C. Brackett's "New BLS Budgets Provide Yardsticks for Measuring Family Living Costs," Monthly Labor Review, (April 1969), pp. 3-16.

difference in these indexes which indicates that inflation is affecting these income groups about equally. Another way of viewing this result is that inflation is acting as a proportional tax. This analogy, however, should not be stressed, for it makes no allowance for savings where there is likely to be a substantial difference between the rich and the poor.

The outcome of the experiment just discussed follows logically for an inflation in which all prices are advancing proportionately. With a fixed weight index, the advance in the total index is then independent of the weighting scheme.

The impact of inflation on consumers might also be analyzed via the consumption deflator, one of the components of the GNP deflator. A fixed weight consumption deflator was also constructed in a manner similar to that described for the GNP deflator (see Table IX). Relevant comparisons are shown in Charts VI and VII, and the analysis is similar to that presented above for the GNP deflator. The CPI (shown in Chart VI) indicates a significantly higher rate of inflation over the last half of the decade than the consumption deflator. For example, the growth in prices from the fourth quarter of 1965 to the end of 1969 was about 18 percent when measured by the CPI and about 15 percent when measured by the consumption deflator. Which of the two is the proper measure to use in analyzing a particular problem, however, depends on the criteria for "goodness" associated with that problem. As a general consideration, housing costs are not included in the consumption deflator since home ownership is treated as a business in the national income accounts, and "used" or second hand prices are not included in the consumption deflator since the national income accounts only measure the output of new goods and services.

If nothing else, this paper should serve to emphasize the point that the various price measures are different and must be adapted to the question under investigation. In specific instances, particular components of one or more of the major indexes may be the relevant data to examine. From the policy point of view, all the indexes contain relevant information, and it is difficult to single out any one as the measure of inflation. Certain conceptual conflicts arise in the choice of fixed weight or variable weight (implicit) price indexes. Fixed weight indexes have the advantage of measuring price changes of essentially the same basket of goods over an extended period of time. However, it may be preferable to measure the price changes of goods which consumers purchase as they adjust their spending patterns to changing relative prices. As serious as these conceptual differences may be, over the decade of the 1960's, the picture of inflation painted by both types of indexes is basically the same.

TABLE IV

Consumer Price Index

		All Items	Services	Commodities less food	Food	Minneapolis-St. Paul All Items
1961	Jan.	103.8	106.8	101.5	102.8	103.3
	Feb.	103.9	107.0	101.6	102.9	
	Mar.	103.9	107.2	101.5	102.7	
	Apr.	103.9	107.3	101.4	102.7	104.3
	May	103.8	107.4	101.5	102.3	
	June	104.0	107.5	101.7	102.5	
	July	104.4	107.6	102.0	103.4	104.4
	Aug.	104.3	107.7	102.1	102.7	
	Sept.	104.6	107.9	102.5	102.6	
	Oct.	104.6	108.0	102.8	102.5	104.4
	Nov.	104.6	108.2	102.8	102.0	
	Dec.	104.5	108.5	102.5	102.0	
1962	Jan.	104.5	108.7	102.1	102.5	104.3
	Feb.	104.8	105.9	102.3	103.1	
	Mar.	105.0	109.0	102.4	103.2	
	Apr.	105.2	109.2	102.7	103.4	105.5
	May	105.2	109.4	102.7	103.2	
	June	105.3	109.5	102.7	103.5	
	July	105.5	109.8	102.6	103.8	105.7
	Aug.	105.5	109.9	102.6	103.8	
	Sept.	106.1	109.8	103.3	104.8	
	Oct.	106.0	109.8	103.4	104.3	105.9
	Nov.	106.0	110.0	103.4	104.1	
	Dec.	105.8	110.1	103.3	103.5	
1963	Jan.	106.0	110.5	102.6	104.7	106.0
	Feb.	106.1	110.5	102.7	105.0	
	Mar.	106.2	110.8	102.9	104.6	
	Apr.	106.3	111.1	103.1	104.3	106.5
	May	106.2	111.1	103.0	104.2	
	June	106.6	111.3	103.3	105.0	
	July	107.1	111.5	103.5	106.2	107.7
	Aug.	107.1	111.7	103.6	106.0	
	Sept.	107.1	111.9	103.7	105.4	
	Oct.	107.2	112.1	104.2	104.9	107.4
	Nov.	107.4	112.3	104.5	105.1	
	Dec.	106.7	112.2	104.5	105.1	
1964	Jan.	107.7	114.2	104.3	105.8	107.5
	Feb.	107.6	114.3	104.1	106.0	
	Mar.	107.7	114.5	104.3	105.7	
	Apr.	107.8	114.8	104.3	105.7	107.3
	May	107.8	114.9	104.3	105.5	
	June	108.0	115.1	104.3	106.2	
	July	108.3	115.3	104.3	107.2	108.1
	Aug.	108.2	115.3	104.2	106.9	
	Sept.	108.4	115.4	104.3	107.2	
	Oct.	108.5	115.5	104.6	106.9	108.6
	Nov.	108.7	116.0	104.8	106.8	
	Dec.	108.8	116.3	104.9	106.9	

TABLE IV (cont)

Consumer Price Index

		All Items	Services	Commodities less food	Food	Minneapolis-St. Paul All Items
1965	Jan.	108.9	116.6	104.9	106.6	108.7
	Feb.	108.9	116.9	104.7	106.6	
	Mar.	109.0	117.0	104.8	106.9	
	Apr.	109.3	117.3	105.0	107.3	108.9
	May	109.6	117.5	105.2	107.9	
	June	110.1	117.6	105.1	110.1	
	July	110.2	117.8	104.7	110.9	109.7
	Aug.	110.0	117.9	104.7	110.1	
	Sept.	110.2	118.5	104.9	109.7	
	Oct.	110.4	118.7	105.3	109.7	110.1
	Nov.	110.6	119.0	105.6	109.7	
	Dec.	110.0	119.3	105.7	110.6	
1966	Jan.	111.0	119.5	105.3	111.4	110.5
	Feb.	111.6	119.7	105.4	113.1	
	Mar.	112.0	120.1	105.6	113.9	
	Apr.	112.5	121.1	106.0	114.0	111.8
	May	112.6	121.5	106.3	113.5	
	June	112.9	122.0	106.4	113.9	
	July	113.3	122.6	106.7	114.3	112.0
	Aug.	113.8	123.0	106.6	115.8	
	Sept.	114.1	123.5	107.0	115.6	
	Oct.	114.5	124.1	107.6	115.6	113.4
	Nov.	114.6	124.7	107.8	114.8	
	Dec.	114.7	125.2	107.7	114.8	
1967	Jan.	114.7	125.5	107.3	114.7	113.4
	Feb.	114.8	125.9	107.6	114.2	
	Mar.	115.0	126.3	107.8	114.2	
	Apr.	115.3	126.6	108.4	113.7	114.2
	May	115.6	127.0	108.7	113.7	
	June	116.0	127.4	108.9	115.1	
	July	116.5	127.7	109.1	116.0	115.7
	Aug.	116.9	128.2	109.4	116.6	
	Sept.	117.1	128.7	110.0	115.9	
	Oct.	117.5	129.1	110.6	115.7	118.4
	Nov.	117.8	129.6	111.1	115.6	
	Dec.	118.2	130.1	111.1	116.2	
1968	Jan.	118.6	130.8	111.2	117.0	119.3
	Feb.	119.0	131.3	111.5	117.4	
	Mar.	119.5	132.1	111.9	117.9	
	Apr.	119.9	132.5	112.2	118.3	120.4
	May	120.3	133.0	112.5	118.8	
	June	120.9	133.9	113.0	119.1	
	July	121.5	134.9	113.2	120.0	121.8
	Aug.	121.9	135.5	113.5	120.5	
	Sept.	122.2	136.0	113.9	120.4	
	Oct.	122.9	136.6	114.7	120.9	122.2
	Nov.	123.4	137.4	115.3	120.5	
	Dec.	123.7	138.1	115.2	121.2	

TABLE IV (cont)

Consumer Price Index

		All Items	Services	Commodities less food	Food	Minneapolis-St. Paul All Items
1969	Jan.	124.1	139.0	115.0	122.0	122.9
	Feb.	124.6	139.7	115.7	121.9	
	Mar.	125.6	140.9	116.8	122.4	
	Apr.	126.4	142.0	117.2	123.2	125.1
	May	126.8	142.7	117.5	123.7	
	June	127.6	143.3	.118.0	125.5	
	July	128.2	144.0	118.1	126.7	128.0
	Aug.	128.7	145.0	118.2	127.4	
	Sept.	129.3	146.0	118.7	127.5	
	Oct.	129.8	146.5	119.8	127.2	130.3
	Nov.	130.5	147.2	120.2	128.1	
	Dec.	131.3	148.3	120.3	129.9	
1970	Jan.	131.8	.149.6	120.1	130.7	132.8
	Feb.	132.5	150.7	120.4	131.5	
	Mar.	133.2	152.3	120.8	131.6	
	Apr.	134.0	153.4	121.6	132.0	135.1
	May	134.6	154.1	122.3	132.4	
	June	135.2	155.0	122.8	132.7	
	July	135.7	155.8	122.9	133.4	136.7
	Aug.	136.0	156.7	123.0	133.5	
	Sept.	136.6	157.7	123.8	133.3	
	Oct.	137.4			133.0	138.2
	Nov.					
	Dec.					

TABLE V

Wholesale Price Index

		All Items	Industrial Commodities	Processed Foods	Farm Products
1961	Jan.	101.0	101.2	102.4	97.9
	Feb.	101.0	101.2	102.8	98.3
	Mar.	101.0	101.2	102.4	98.1
	Apr.	100.5	101.1	101.9	96.6
	May	100.0	100.8	101.4	94.8
	June	99.5	100.6	100.1	92.9
	July	99.9	100.6	100.7	95.1
	Aug.	100.1	100.6	101.1	96.7
	Sept.	100.0	100.7	101.2	95.2
	Oct.	100.0	100.5	100.9	95.1
	Nov.	100.0	100.7	101.4	95.6
	Dec.	100.4	100.9	102.3	95.9
1962	Jan.	100.8	101.0	103.2	97.9
	Feb.	100.7	100.8	102.9	98.2
	Mar.	100.7	100.8	102.7	98.4
	Apr.	100.4	100.9	101.6	96.9
	May	100.2	100.9	101.2	96.2
	June	100.0	100.7	101.2	95.3
	July	100.4	100.8	102.4	96.5
	Aug.	100.5	100.6	102.9	97.6
	Sept.	101.2	100.8	104.7	100.6
	Oct.	100.6	100.7	103.2	98.7
	Nov.	100.7	100.7	103.2	99.3
	Dec.	100.4	100.7	102.9	97.3
1963	Jan.	100.5	100.7	103.2	98.5
	Feb.	100.2	100.6	102.8	96.5
	Mar.	99.9	100.6	101.5	95.4
	Apr.	99.7	100.4	101.3	95.4
	May	100.0	100.5	103.1	94.4
	June	100.3	100.7	103.8	94.9
	July	100.6	100.8	104.3	96.8
	Aug.	100.4	100.8	103.4	96.3
	Sept.	100.3	100.7	103.6	95.5
	Oct.	100.5	100.9	104.5	95.1
	Nov.	100.7	100.9	104.6	96.2
	Dec.	100.3	101.2	103.2	93.3
1964	Jan.	101.0	101.3	104.9	96.3
	Feb.	100.5	101.2	103.3	94.5
	Mar.	100.4	101.1	102.8	95.2
	Apr.	100.3	101.1	102.6	94.4
	May	100.1	101.1	101.4	93.7
	June	100.0	100.9	102.0	93.2
	July	100.4	101.1	102.9	94.1
	Aug.	100.3	101.1	102.7	93.6
	Sept.	100.7	101.1	104.1	95.7
	Oct.	100.8	101.5	103.8	93.8
	Nov.	100.7	101.6	102.8	94.0
	Dec.	100.7	101.8	103.2	92.7

TABLE V (Cont)

Wholesale Price Index

		All Items	Industrial Commodities	Processed Foods	Farm Products
1965	Jan.	101.0	101.9	104.2	93.0
	Feb.	101.2	101.9	104.0	94.5
	Mar.	101.3	102.0	103.8	95.4
	Apr.	101.7	102.1	104.3	97.6
	May	102.1	102.1	104.9	98.4
	June	102.8	102.5	107.5	100.3
	July	102.9	102.5	108.2	100.0
	Aug.	102.9	102.7	108.0	99.1
	Sept.	103.0	102.7	108.0	99.5
	Oct.	103.1	102.8	108.2	99.4
	Nov.	103.5	103.2	109.1	100.3
	Dec.	104.1	103.2	110.4	103.0
1966	Jan.	104.6	103.5	111.5	104.5
	Feb.	105.4	103.8	113.0	107.4
	Mar.	105.4	104.0	112.2	106.8
	Apr.	105.5	104.3	111.5	106.4
	May	105.6	104.7	111.8	104.5
	June	105.7	104.9	112.0	104.2
	July	106.4	105.2	113.8	107.8
	Aug.	106.8	105.2	115.7	108.1
	Sept.	106.8	105.2	115.5	108.7
	Oct.	106.2	105.3	113.9	104.4
	Nov.	105.9	105.5	112.6	102.5
	Dec.	105.9	105.5	112.8	101.8
1967	Jan.	106.2	105.8	112.8	102.6
	Feb.	106.0	106.0	101.0	111.6
	Mar.	105.7	106.0	110.6	99.6
	Apr.	105.3	106.0	110.0	97.6
	May	105.8	106.0	110.7	100.7
	June	106.3	106.0	112.6	102.4
	July	106.5	106.0	113.1	102.8
	Aug.	106.1	106.3	112.1	99.2
	Sept.	106.2	106.5	112.7	98.4
	Oct.	106.1	106.8	111.7	97.1
	Nov.	106.2	107.1	110.9	96.4
	Dec.	106.7	107.3	111.5	98.7
1968	Jan.	107.2	107.8	112.4	99.0
	Feb.	108.0	108.3	113.3	101.3
	Mar.	108.2	108.6	112.9	102.1
	Apr.	108.3	108.8	112.8	102.1
	May	108.5	108.6	113.6	103.6
	June	108.7	108.8	114.6	102.5
	July	109.1	108.8	115.9	103.9
	Aug.	108.7	108.9	114.9	101.4
	Sept.	109.1	109.2	115.3	102.8
	Oct.	109.1	109.7	114.4	101.2
	Nov.	109.6	109.9	114.7	103.1
	Dec.	109.8	110.2	114.7	103.3

TABLE V (cont)

Wholesale Price Index

		All Items	Industrial Commodities	Processed Foods	Farm Products
1969	Jan.	110.7	110.9	116.0	104.9
	Feb.	111.1	111.4	116.3	105.0
	Mar.	111.7	112.0	116.4	106.5
	Apr.	111.9	112.1	117.3	105.6
	May	112.8	112.2	119.4	110.5
	June	113.2	112.2	121.4	111.2
	July	113.3	112.4	122.0	110.5
	Aug.	113.4	112.8	121.5	108.9
	Sept.	113.6	113.2	121.3	108.4
	Oct.	114.0	113.8	121.6	107.9
	Nov.	114.7	114.2	121.8	111.1
	Dec.	115.1	114.6	122.6	111.7
1970	Jan.	115.9	115.1	125.1	112.5
	Feb.	116.4	115.5	125.2	113.7
	Mar.	116.6	115.8	124.9	114.3
	Apr.	116.6	116.2	124.9	111.3
	May	116.8	116.6	124.1	111.0
	June	117.0	116.7	124.8	111.3
	July	117.7	116.9	126.6	113.1
	Aug.	117.2	-17.1	126.1	108.2
	Sept.	117.8	117.4	126.2	111.8
	Oct.	117.8	118.3	124.9	107.5

TABLE VI

GNP Deflator

	Total	Personal Consumption	Fixed Investment	Government
1961.1	104.3	103.8	102.9	106.9
1961.2	104.5	103.7	103.7	107.2
1961.3	104.5	103.9	104.4	106.2
1961.4	105.1	104.1	104.7	108.2
1962.1	105.4	104.4	104.5	108.4
1962.2	105.5	104.7	104.9	108.6
1962.3	105.8	105.0	105.2	108.9
1962.4	106.2	105.3	105.1	110.0
1963.1	106.7	105.6	105.3	110.6
1963.2	107.0	106.0	105.8	111.2
1963.3	107.2	106.2	106.3	111.7
1963.4	107.8	106.7	106.4	113.4
1964.1	108.2	106.9	106.7	114.5
1964.2	108.5	107.3	107.4	114.8
1964.3	109.1	107.4	108.0	116.4
1964.4	109.6	107.8	108.4	117.4
1965.1	110.2	108.2	108.6	118.0
1965.2	110.7	108.8	109.0	118.9
1965.3	111.0	109.0	109.4	119.8
1965.4	111.5	109.3	110.1	121.1
1966.1	112.4	110.2	110.4	121.9
1966.2	113.5	111.3	111.3	123.4
1966.3	114.5	111.9	112.2	124.9
1966.4	115.4	112.8	113.1	125.5
1967.1	116.2	113.3	113.8	126.6
1967.2	116.9	113.8	114.6	127.4
1967.3	118.1	114.8	116.6	129.2
1967.4	119.4	115.7	117.7	131.5
1968.1	120.5	116.8	118.0	132.8
1968.2	121.7	118.1	119.6	133.3
1968.3	122.9	118.9	120.8	136.2
1968.4	124.2	120.4	121.7	137.6
1969.1	125.7	121.3	124.2	139.5
1969.2	127.2	122.8	125.4	141.9
1969.3	129.0	124.2	127.1	145.4
1969.4	130.5	125.6	128.0	147.5
1970.1	132.6	127.2	129.6	151.5
1970.2	134.0	128.5	131.0	154.6

TABLE VII

CPI For Various Weighting Structures

		Actual CPI	Low Budget	Moderate Budget	High Budget
1966	Jan.	111.0	111.1	111.8	110.9
	Feb.	111.6	111.8	111.5	111.5
	Mar.	112.0	112.3	112.0	111.9
	Apr.	112.5	112.7	112.4	112.4
	May	112.6	112.8	112.6	112.5
	June	112.9	113.1	112.9	112.9
	July	113.3	113.5	113.2	113.2
	Aug.	113.8	114.1	113.8	113.7
	Sept.	114.1	114.4	114.1	114.0
	Oct.	114.5	114.8	114.5	114.4
	Nov.	114.6	114.7	114.5	114.5
	Dec.	114.7	114.9	114.6	114.7
1967	Jan.	114.7	114.7	114.5	114.5
	Feb.	114.8	114.8	114.6	114.7
	Mar.	115.0	115.0	114.8	114.9
	Apr.	115.3	115.1	115.0	115.1
	May	115.6	115.5	115.3	115.4
	June	116.0	116.0	115.8	115.9
	July	116.5	116.5	116.3	116.3
	Aug.	116.9	116.9	116.7	116.7
	Sept.	117.1	117.1	116.9	116.9
	Oct.	117.5	117.4	117.2	117.3
	Nov.	117.8	117.7	117.5	117.6
	Dec.	118.2	118.0	117.9	118.0
1968	Jan.	118.6	118.5	118.3	118.3
	Feb.	119.0	118.9	118.7	118.8
	Mar.	119.5	119.4	119.2	119.3
	Apr.	119.9	119.8	119.6	119.7
	May	120.3	120.3	120.1	120.2
	June	120.9	120.9	120.6	120.7
	July	121.5	121.4	121.2	121.3
	Aug.	121.9	121.9	121.7	121.7
	Sept.	122.2	122.3	122.0	122.2
	Oct.	122.9	123.0	122.7	122.9
	Nov.	123.4	123.3	123.1	123.3
	Dec.	123.7	123.7	123.5	123.6
1969	Jan.	124.1	124.1	123.8	124.0
	Feb.	124.6	124.5	124.3	124.4
	Mar.	125.6	125.4	125.3	125.4
	Apr.	126.4	126.1	126.0	126.2
	May	126.8	126.6	126.5	126.7
	June	127.6	127.6	127.4	127.5
	July	128.2	128.2	128.0	128.1
	Aug.	128.7	128.8	128.5	128.6
	Sept.	129.3	129.4	129.1	129.2
	Oct.	129.8	129.8	129.6	129.8
	Nov.	130.5	130.5	130.2	130.4
	Dec.	131.3	131.4	131.2	131.3

TABLE VII (cont)

CPI For Various Weighting Structures

		Actual CPI	Low Budget	Moderate Budget	High Budget
1970	Jan.	131.8	131.8	131.5	131.7
	Feb.	132.5	132.6	132.3	132.4
	Mar.	133.2	133.2	132.9	133.1
	Apr.	134.0	133.9	133.7	133.9
	May	134.6	134.5	134.3	134.5
	June	135.2	135.0	134.8	135.0
	July	135.7	135.4	135.3	135.5
	Aug.	136.0	135.8	135.6	135.8
	Sept.	136.6	136.3	136.2	136.5

TABLE VIII

GNP Deflator and Growth Rates

	Total GNP Deflator	Percent Change at Annual Rate	Fixed Weight GNP Deflator	Percent Change at Annual Rate
1961.1	104.3	----	104.3	----
1961.2	104.5	0.8	104.4	0.2
1961.3	104.5	0.0	104.5	0.2
1961.4	105.1	2.3	105.0	2.2
1962.1	105.4	1.1	105.3	0.9
1962.2	105.5	0.4	105.5	0.9
1962.3	105.8	1.1	105.8	1.1
1962.4	106.2	1.5	106.3	1.6
1963.1	106.7	1.9	106.7	1.7
1963.2	107.0	1.1	107.1	1.6
1963.3	107.2	0.7	107.4	1.0
1963.4	107.8	2.3	108.1	2.6
1964.1	108.2	1.5	108.6	1.8
1964.2	108.5	1.1	108.9	1.4
1964.3	109.1	2.2	109.5	2.1
1964.4	109.6	1.8	110.0	2.0
1965.1	110.2	2.2	110.5	1.7
1965.2	110.7	1.8	111.0	1.9
1965.3	111.0	1.1	111.5	1.9
1965.4	111.5	1.8	112.2	2.5
1966.1	112.4	3.3	113.1	3.2
1966.2	113.5	4.0	114.2	3.9
1966.3	114.5	3.6	115.1	3.2
1966.4	115.4	3.2	116.0	3.0
1967.1	116.2	2.8	116.6	2.2
1967.2	116.9	2.4	117.3	2.3
1967.3	118.1	4.2	118.5	4.4
1967.4	119.4	4.5	119.7	4.1
1968.1	120.5	3.7	120.9	3.9
1968.2	121.7	4.0	122.1	4.0
1968.3	122.9	4.0	123.5	4.8
1968.4	124.2	4.3	124.8	4.3
1969.1	125.7	4.9	126.2	4.5
1969.2	127.22	5.0	127.9	5.5
1969.3	128.9	5.6	129.8	6.1
1969.4	130.5	4.9	131.4	4.8
1970.1	132.6	6.4	133.4	6.3
1970.2	134.0	4.3	135.2	5.5

TABLE IX

Consumption Deflator and Growth Rates

	Total Consumption Deflator	Percent Change at Annual Rate	Fixed Weight Consumption Deflator	Percent Change at Annual Rate
1961.1	103.8	---	103.8	---
1961.2	103.7	-0.3	103.7	-0.4
1961.3	103.9	0.8	103.9	1.0
1961.4	104.1	0.8	104.1	0.8
1962.1	104.4	1.2	104.5	1.2
1962.2	104.7	1.2	104.7	0.9
1962.3	105.0	1.2	105.0	1.0
1962.4	105.3	1.1	105.2	1.2
1963.1	105.6	1.1	105.7	1.7
1963.2	106.0	1.5	106.1	1.4
1963.3	106.2	0.8	106.2	0.6
1963.4	106.7	1.9	106.7	1.9
1964.1	106.9	0.8	107.0	1.2
1964.2	107.3	1.5	107.4	1.2
1964.3	107.4	0.4	107.6	0.7
1964.4	107.8	1.5	107.9	1.5
1965.1	108.2	1.5	108.5	1.9
1965.2	108.8	2.2	109.0	1.8
1965.3	109.0	0.7	109.3	1.2
1965.4	109.3	1.1	109.7	1.6
1966.1	110.2	3.3	110.8	3.9
1966.2	111.3	4.1	111.7	3.6
1966.3	111.9	2.2	112.4	2.4
1966.4	112.8	3.3	113.3	3.1
1967.1	113.3	1.8	113.7	1.7
1967.2	113.8	1.8	114.3	1.9
1967.3	114.8	3.6	115.2	3.4
1967.4	115.7	3.2	116.1	3.2
1968.1	116.8	3.9	117.4	4.5
1968.2	118.1	4.5	118.7	4.5
1968.3	118.9	2.7	119.7	3.3
1968.4	120.4	5.1	121.1	4.7
1969.1	121.3	3.0	122.0	3.3
1969.2	122.8	5.0	123.6	5.2
1969.3	124.2	4.6	124.9	4.4
1969.4	125.6	4.6	126.5	4.9
1970.1	127.2	5.2	127.9	4.8
1970.2	128.5	4.2	129.3	4.5