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STUDY PAPERS NOS. 7, 8, AND 9
THE INCIDENCE OF INFLATION:
OR WHO GETS HURT?

BY
Seymour E. Harris

PROTECTION AGAINST INFLATION

BY
H. S. Houthakker

THE SHARE OF WAGES AND SALARIES IN
MANUFACTURING INCOMES, 1947-56

BY
Alfred H. Conrad

MATERIALS PREPARED IN CONNECTION WITH THE
STUDY OF EMPLOYMENT, GROWTH, AND
PRICE LEVELS

FOR CONSIDERATION BY THE
JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES

ON the Office of Congressman
William B. Wilson
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STUDY OF EMPLOYMENT, GROWTH, AND PRICE LEVELS

(Pursuant to S. Con. Res. 13, 86th Cong., 1st sess.)

OTTO ECKSTEIN, *Technical Director*

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These are part of a series of papers being prepared for consideration by the Joint Economic Committee in connection with their "Study of Employment, Growth, and Price Levels." The committee and the committee staff neither approve nor disapprove of the findings of the individual authors. The findings are being presented in this form to obtain the widest possible comment before the committee prepares its report.

LETTERS OF TRANSMITTAL

NOVEMBER 20, 1959.

To Members of the Joint Economic Committee:

Submitted herewith for the consideration of the members of the Joint Economic Committee and others are study papers 7, 8, and 9, "Incidence of Inflation: Or Who Gets Hurt; Protection Against Inflation;" and "The Share of Wages and Salaries in Manufacturing Incomes, 1947-56."

These are among the number of subjects which the Joint Economic Committee has requested individual scholars to examine and report on to provide factual and analytic materials for consideration in the preparation of the staff and committee reports for the "Study of Employment, Growth, and Price Levels."

The papers are being printed and distributed not only for the use of the committee members but also to obtain the review and comment of other experts during the committee's consideration of the materials. The findings are entirely those of the authors, and the committee and the committee staff indicate neither approval nor disapproval by this publication.

PAUL H. DOUGLAS,
Chairman, Joint Economic Committee.

NOVEMBER 17, 1959.

HON. PAUL H. DOUGLAS,
*Chairman, Joint Economic Committee,
U.S. Senate, Washington, D.C.*

DEAR SENATOR DOUGLAS: Transmitted herewith are three of the series of papers being prepared for the "Study of Employment, Growth, and Price Levels" by outside consultants and members of the staff. The authors of these papers are Seymour E. Harris, Harvard University, Cambridge, Mass.; H. S. Houthakker, Stanford University, Stanford, Calif.; and Alfred H. Conrad, Harvard University, Cambridge, Mass.

All papers are presented as prepared by the authors, for consideration and comment by the committee and staff.

OTTO ECKSTEIN,
*Technical Director,
Study of Employment, Growth, and Price Levels.*

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STUDY PAPER NO. 8, "PROTECTION AGAINST INFLATION," BY H. S. HOUTHAKKER, STANFORD UNIVERSITY, STANFORD, CALIF.

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STUDY PAPER NO. 9, "THE SHARE OF WAGES AND SALARIES IN MANUFACTURING INCOMES, 1947-56," BY ALFRED H. CONRAD, HARVARD UNIVERSITY, CAMBRIDGE, MASS.

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STUDY PAPER NO. 7
THE INCIDENCE OF INFLATION: OR WHO
GETS HURT?
(By SEYMOUR E. HARRIS)

STUDY PAPER NO. 7

THE INCIDENCE OF INFLATION: OR WHO GETS HURT?

(By Seymour E. Harris¹)

CHAPTER 1. GENERAL SUMMARY

In this paper, I am concerned with the problem of the effects of inflation on different groups of the population. My major interest is, of course, the inflation that has confronted the country in recent years. In order to get some measure of the effects of inflation on different groups, I have also had to take into account earlier inflations and to consider what happened as prices rose.

I should say at the very outset that it is not always easy to disentangle the effects of inflation from other forces. For example, through long periods of our history we have not only had a modest amount of inflation, though there have been important periods of deflation, but we have also had rising gross national product (GNP) associated in part with an increase in population and in part with the growing productivity of our economy. Often the damage done by inflation results from its contribution to a failure to adjust prices or incomes of various groups to the general trends in the economy. But if average per capita income is rising and if returns to some elements in our economy lag in relation to the growth of the economy, and if on top of the increase in productivity there is also a rise in prices, then the failure to achieve adjustments may be aggravated by the rising prices. Again we may find, for example, that the adjustment to rising prices or even to rising per capita incomes has been more than adequate in some segments of the economy. But the explanation may be in part that, for example, benefit payments in a new social security program had been most adequate at first; and it takes time to adapt benefits to the general standard of living. It may then be found that benefits rise more than the price level and yet a correct analysis may very well suggest that, in the absence of inflation, benefits would have risen more in relation to the real standard of living. In other words, what seems to be a response to inflation or to a rising per capita income may, in fact, be an attempt to adapt our benefit structures to the current standard of living.

¹ I am indebted to Messrs. Gordon Smith and Reginald Green for research help with this paper. I am also greatly indebted to Mrs. Anna Thorpe, who in general supervised all the details involved in producing this study.

INFLATION AND GROWTH

What inflation does to the economy depends to some extent upon the relationship between price movements and the growth in the economy; and here by growth I mean largely the rise in per capita income at stable prices, though, of course, one should also consider to some extent the increase in the numbers on the labor market and, therefore, relate it to the rise of population.

A historical examination of the movement of prices and the rate of growth of the economy does not yield any very clear-cut results. Apparently we have had growth of substantial proportions in periods of falling prices as well as of rising prices. We are equally surprised by the extent of growth in periods of falling prices as we are by that in periods of great inflation. One cannot be sure; but if we had not had the fall of prices, for example, in the last quarter of the 19th century, we might have had an even greater rate of growth. There is a considerable amount of evidence that the economy was not getting enough money, and the failure to achieve an adequate increase in the supply of money may have contributed both to falling prices and to a somewhat lower rate of growth than the potential.

KIND OF INFLATION

At any rate, the major controversy here revolves around the period since 1950. Much more support is given to the general theory that in the last few years, that is, from 1955 to 1958, we have had a peculiar type of inflation when prices rose by 8 percent in the midst of a so-called peaceful world. Many more economists now believe that inflation is what is known as a cost-push inflation, that is, an inflation that is brought about by rising wage and other costs. But even here one must be cautious because this kind of inflation cannot be continued without providing adequate supplies of money and appropriate fiscal policies. This type of inflation is in contrast to the usual, the classic type, which is supposedly related to an excess of demand, that is, an excess flow of purchasing power and of demand in relation to the flow of goods. It is generally assumed that monetary policy can adequately deal with the excess and demand kind of inflation, although increasingly we seem to want a larger contribution from fiscal policy.

Of one thing we may be reasonably sure, namely, that in periods of great unemployment it is important to expand the supply of money and therefore the amount of spending greatly in order to achieve an improvement in the economic situation. This was shown clearly in World War II, for as late as 1939, unemployment was still at 9.5 million, or about 17 percent of the labor force. By 1944 military purchases had risen to \$88 billion and unemployment had fallen to 1 million.

We may conclude that if inflation is one of the costs of growth, then, of course, against the inequities and adverse effects of a given degree of inflation on the economy, we have to put any increased amount of output and employment that result from the inflationary process. We, of course, all want price stability, full employment, and maximum growth. But often we are unable to achieve all these objectives, in part because our instruments are blunt. We may have to choose be-

tween a given increase in prices or a given rise of output. The great current debate is whether we should sacrifice stability of prices to some extent in order to achieve larger degrees of growth and less unemployment. Of course, we all would acknowledge a 10 percent rise of output and a 1-percent inflation as splendid public policy, just as we would all denounce a policy that yields a 10-percent rise of prices and a 1-percent increase of output.

INCIDENCE OF INFLATION ON GOVERNMENT

What of the incidence of inflation on Government? Undoubtedly, because of the time consumed in the process of increasing public expenditures to a changing price level, there is a tendency when inflation progresses for Government to increase its spending less than the automatic rise of receipts. The gains are especially large for the Federal Government where receipts tend to rise more rapidly in response to a given amount of inflation than for State and local governments, which on the whole have more inflexible and less elastic tax revenues. Government, of course, also gains qua debtor, for one of the results of inflation is the financing of debt with dollars reduced purchasing power. The largest losses through inflation experienced by those who hold Government securities are likely to be felt by individuals and others who hold long-term securities. In general, financial institutions other than insurance companies and mutual savings banks tend to hold short-term securities, and therefore they have an opportunity frequently to adjust their holdings to the changing price level. Insofar as individuals have stakes in insurance companies and financial institutions, they, of course, suffer the losses resulting from the depreciation of the bond holdings of the institutions. In general, we should note that the upward adjustment of interest rates to inflation tends to lag greatly, though by 1959 there was some evidence that interest rates were responding more to the inflation. As individuals dispose of their Government bonds and other fixed return assets and move into equities, the rate of interest on new issues tends to rise as the prices of old issues depreciate. A Treasury issue of a 5-percent 5-year Federal note in 1959 is eloquent testimony of this process.

In general, it is evident that tax receipts respond much more to inflation when the dependence is largely on direct taxes, such as income and corporation taxes, and on the whole receipts from sales taxes respond more quickly to inflation than the general property tax. In an economy with rising prices and rising per capita incomes, any governments that are dependent on a general property tax are likely to suffer greatly. For example, from 1938 to 1948, the yield from a general property tax rose only from \$4.4 billion to \$6.1 billion, falling from 34 percent of total governmental revenue to 12 percent. By 1957, however, the yield was over \$13 billion and 13 percent of the total tax revenues. This rise is explained largely not so much by the increase of assessments and rates in response to inflation and rising incomes of existing property, but rather to the tremendous increase of new construction. In the 9 years from 1948 to 1957 total private construction rose by \$241 billion. Even without reassessments of old property and increase of tax rates, and on the assumption of a \$30 rate per thousand, the new construction would yield more than \$7 billion of additional general property tax revenue, or roughly the increase from 1948 to 1957.

Taxes that respond well to rising income and prices, such as the income and corporate taxes, are increasingly used. The ability of the Federal Government to finance the large demands being made upon it, is explained in no small part by its recourse to direct taxes. Corporate and personal income taxes of all governments accounted for about 60 percent of total taxes by 1957 as compared to only 23 percent in 1938, and 24 percent in 1927, and virtually no contribution in 1902.

Under the pressure of losses of general property taxes, that is, the failure of revenue to respond to rising prices and incomes, State and local governments increasingly depend upon sales receipts and the like. In 1927 these taxes accounted for one-quarter of State revenue, but by 1957, they accounted for 60 percent of total State revenue.

As a result of the rise of prices and incomes and the failure of revenues from property taxes to respond adequately, and even the inadequate help from sales receipts and taxes, the Federal Government tends increasingly to finance State and local governments. In other words, the flexibility of the Federal tax programs in periods of rising prices and incomes is to some extent passed on to other governments. In a similar way, the State governments with more responsive taxes tended to finance local governments increasingly.

Again, we note that under our present system of taxation, inflation tends to result in larger tax receipts as incomes rise, and therefore the taxpayer has to pay a higher rate of tax at higher brackets, an automatic result of inflation on tax receipts. Quite apart from any change in the statutory tax rates, inflation tends to shift taxpayers into higher brackets income tax liability and therefore increases the effective tax rates.

WELFARE PROGRAMS: OLD AGE INSURANCE

What of welfare programs and inflation? Here is one of the costly areas where inflation has a serious effect, for those who suffer are generally low-income groups with little capacity to increase any supplementary income. One reason for this is that adjustments in their benefits are made slowly in response to rising prices and income. Insofar as the financing is done by State and local governments with their unresponsive taxes, the danger is even greater.

Under our most important insurance program, old-age, survivors, and disability insurance, the effects of inflation in the forties were serious indeed. From 1938 to 1948, in dollars of stable purchasing power, the average benefits dropped by about one-third. The result was that the beneficiaries under this program experienced a reduction of real income of about 50 percent in relation to the rest of the population, which had experienced a substantial rise in their real income.

By 1950, however, the Federal Government began to revise the program every 2 years and this has continued up through 1958, so that by 1958 the real value of benefits under this program had increased substantially above the prewar level, though not as much as the real per capita income of the whole population. This experience does suggest the need of numerous revisions of the tax and benefit programs if the inflation is not to have a serious effect on the most vulnerable groups in our society—namely, the old who primarily are not members of the labor market and therefore are inhibited in any attempts to adjust their income to the rising price level. In fact, we might argue that if a 2 percent inflation is absolutely necessary, it would be wise to

have an escalator clause under this program. Currently this would only cost a few hundred million dollars a year if inflation were kept, say, at 2 percent a year. (This is not meant to be suggestive of a goal of 2 percent inflation.) I make this point even though in general I consider escalator clauses rather dangerous, for they tend to aggravate the inflationary process.

One other aspect of old age and survivors' and disability insurance program should be noted, and that is the problem of reserve financing. We have now accumulated more than \$20 billion of reserves in this program, and the current estimate is more than \$200 billion by the year 2020. Policies in the 1950's to increase taxes and reserves are to be explained in no small part by a fear that the old age account may be unbalanced later on and recourse would have to be had to general revenue. I find little to support a large reserve theory, and, in fact, in the 1930's, we had abandoned the general principle of a large reserve on the theory that this tends to have a deflationary effect on the economy; and also on the theory that every generation has to provide the resources for its own old, irrespective of financing policy. I would readily admit, however, that financing policy is not exactly an irrelevant problem.

But these large reserves, which are on the whole underestimated because they are based on the theory that present wage levels will continue, are not easily supported. In fact, we might very well estimate that the reserves on the basis of realistic anticipation of the wage levels might very well not be \$200 billion but \$600 to \$800 billion by the early part of the 21st century. But what actually happens, through the inflationary process and the rise of per capita income related to other factors, such as productivity, is that these large reserves are greatly eroded through the process of inflation and the rise of per capita income. Hence, there is a considerable waste here. It would be much better either to reduce the tax rate or, more sensibly, to increase benefit rates now and not build up such large reserves. In this manner the effects of inflation might be considerably neutralized.

The management of the program is subject to one other serious criticism—namely, that in the 1940's, when inflation was in vogue, no serious attempt was made to increase payroll taxes. This was just the period when payroll taxes should have been increased. Related also was the failure to raise the amount of wages subject to taxes. Under the original legislation, the ceiling of wages to be covered was put at \$3,000, and this figure was unchanged until 1950, when it was raised to \$3,600. Even by 1958 the rise was only to \$4,800. A ceiling related to wage trends should be about \$9,000. At any rate, it ought to be considerably above \$4,800. Had the ceiling been raised with the inflation, and with the rise of per capita income, then, of course, more resources would have been available; and particularly in view of the manner in which the program works, the low-income groups would have especially gained from such increases in coverage. Benefits would have been more nearly adequate. Even today (1959), benefits average only about \$70 monthly.

In discussing the old-age insurance program, I should add one other point—namely, that to some extent adjustments of benefits are not made merely through an increase in the benefits, say, for the retired worker, but also, as the years go on, in making benefits avail-

able to other members of the household—for example, the widow, children, parents, and the like—who are dependent upon the breadwinner who is now retired.

A word about old-age assistance. Here the response to rising prices and incomes is greater than under old-age insurance, all the more surprising since this is an aid, not an insurance program. The explanation in part is that the Federal Government provided increasing amounts of funds to be matched by State and local governments. These governments, anxious to get the maximum subsidy from the Federal Government, tend to be generous in their assistance programs, with the Federal Government playing a large and increasing part.

UNEMPLOYMENT COMPENSATION

With inflation, the percentage of wages covered by unemployment compensation has tended to fall over the years. Of course, inflation alone should not be held responsible for this unfortunate trend. The rise in average wages at stable prices is also part of the explanation, together with the ceiling on benefits in dollars to be paid to the unemployed worker. These weekly ceilings on benefits tend to become more restrictive as average weekly wages rise, either because of inflation or of the rising productivity of the economy. In December 1937, the maximum benefits in most cases were \$15 per week, with 95 percent of the covered workers subject to this maximum. This maximum benefit in 1939 was in excess of 60 percent of the average weekly covered wages in 31 States and less than 50 percent in 2 States. But by 1952 the total was in excess of 60 percent in 2 States and less than 50 percent in 40 States.

Yet the benefits under unemployment compensation have responded to inflation and the rise of per capita income or weekly wages much more than those under old age insurance. One reason for this is that in general the program is tied to wage levels. That the results on the whole have been disappointing is due both to the ceiling on weekly benefits and also the spread and effects of the merit-rating programs. Under merit rating employers are allowed to reduce their payroll taxes in accordance with their employment record. The result has been that the benefits have been kept down as payroll taxes, instead of being levied at close to 3 percent of payrolls, have been little more than 1 percent of payrolls. Ceilings on benefits, therefore, and the low taxes made possible by the merit-rating program have made it difficult to adjust benefits to the rise in prices and wage levels.

In 1939, the average weekly payments to total unemployment was \$10.66; in 1946, \$18.50; in 1957, \$28.21. In dollars of stable purchasing power there had been an increase in these years from \$10.72 to \$13.26 and \$13.90. Hence the increase was substantially less than the average weekly wage. Weekly manufacturing wages from 1939 to 1957 rose by 230 percent, whereas in current dollars the average weekly payment for unemployment rose by 170 percent.

Of course, these are not the only income maintenance programs. There are many others—for example, workmen's compensation and veterans' benefits and various private employee benefit plans.

Just a word about workmen's compensation, with problems similar to unemployment compensation. Here, again, the tendency has been for the benefits to rise less than rising prices and wages. Again, the

general prevalence of ceilings on benefit payments contributes toward this failure of adjustment. In their book, the Somers conclude that in workmen's compensation we have approached pretty close to a flat-rate payment and the adjustment to rising prices and wages is slow indeed. Interstate competition results in large pressures on State governments not to increase benefits which involve increased taxes on industry.

OTHER INCOME MAINTENANCE PROGRAMS

Wherever these maintenance programs require long-term commitments, there is the possibility that expectations are likely to be disappointed. The point is that the trend of incomes is upward as productivity increases and prices rise and a pension program, for example, which is based on present-day wages or income, will be inadequate at the income levels of the future. In colleges we have found, for example, that when a pension program was set up on the theory that 50 percent of the wages at the end of the working period would be available, what is actually available comes to about 25 percent. In other words, if one sets up a pension program for young employees at the present time, it would be wrong to assume that the average wage would be, say, \$4,000—the current level—but rather, say, \$8,000, within a period of 25 years and substantially more at the time of retirement of the current young worker. But few programs of this kind are based on such projections. Public maintenance programs, which accounted for \$2 billion in 1940, were up to \$11 billion in 1955 and were estimated at \$18, \$24, and \$30 billion in 1965, 1975, and 1985. Hence, the need of adequate adjustments to the rise of prices and incomes in these programs.

It is of some interest that the President's Commission on Veterans' Benefits in the United States (1956) would not adjust benefits to income levels but rather would base benefits on the minimum needs, as assistance programs are, and benefits, in their view, should in the long run be lower than benefits paid under old age insurance. The Veterans' Commission was concerned that the cost of these veterans' benefits would grow disproportionately in relation to GNP. But, on the whole, they tended to underestimate the GNP and, moreover, in tying the problem to the total charge on all maintenance programs they leave out of account the large contribution that has been made by the insured.

The average cost of veterans' benefits per serviceman in each war has been estimated at \$3,700 for the Civil War, \$12,200 for the Spanish American War, \$12,700 for World War I, \$14,100 for World War II, and \$14,900 for the Korean conflict. Apparently the response to rising prices and incomes was large after the Civil War, in part because of the very low benefits for the Civil War veterans; but to both rising prices and per capita income the adjustment was most inadequate after World War I, World War II, and the Korean war. But should the participants in recent wars receive ultimately the same service pensions as for the earlier conflicts before World War II, then the respective figures would be \$3,700, \$12,200, \$22,000, \$28,700, and \$34,500. The losses in dollars of stable purchasing power since World War I can be associated in part with inflation.

For 100-percent disability, the basic rate was \$30 per month in World War I, \$80 in 1919, \$100 in 1924, and \$181 in 1954. The increase by

1954 greatly exceeded the rise in the cost of living, with the cost of living at 263 in 1954 (1914=100) and benefits for total disability at 603. These benefits, which affect a small portion of the veterans, have stayed up reasonably well with the cost of living and the per capita income. This holds when comparison is made with the Civil War. But on a World War base, the lag in relation to World War I incomes is large indeed.

Insurance is another matter. In 1955 there were 5,600,000 policies still in force on a waiver status, with a total of \$37 billion in national service life insurance. Here, of course, the veterans have experienced substantial losses.

Private pension funds also raise some interesting problems. The first problem is one already mentioned—the fact that incomes at time of payment of pension life would be much higher than the incomes on which the plans are evolved. The Fund for the Republic estimates that 45 to 55 percent of all the wage and salary force will be subject to these private pensions within 10 years. Currently about 18 million are covered, and the assets are about \$40 billion. Obviously, with the rise of prices and incomes these funds become relatively inadequate. To some extent, the pension funds try to make up for this by investing in common stocks. For 1957 according to one estimate they had 25 percent of their funds in common stocks, and new investments were going into stocks at the rate of 37 percent of net receipts.

The inflationary process, of course, also influence the value of assets. Thus, in 1945 there were \$152 billion of life insurance in force; by 1958, \$494 billion. Obviously, those who obtained payments from life insurance with insurance in force before 1945 have suffered large losses. Those involved in the large increase from \$214 to \$494 billion, from 1949 to 1958, have not as yet experienced large losses, but the continuance of inflation will seriously affect the purchasing power of money received under these policies. It is interesting, however, that despite the large inflation since 1940, life insurance per family has risen roughly in the same ratio as the average family disposable income has increased. This certainly does suggest that the public is still not very much aware or very much interested in the process of inflation; and one of the greatest blocks to inflation is the lag in the general realization of its presence. Insurance companies are not able to protect themselves against inflation through purchases of common stocks in part because of legal restrictions. Of \$108 billion of assets held in 1958, the U.S. insurance companies held only \$4 billion in common stocks.

An examination of the total assets of the Nation suggests that from the early part of the century until 1949 savings accounted for roughly one-half the increase in wealth, the other major factor being, of course, the increase in the price level. Savings accounted for about two-thirds of the rise of net worth. Inflation has made its largest contribution to the rise in asset value in real estate. Between 1900 and 1949 the current value of real estate held by individuals increased by about \$200 billion more than the owners' savings; and this represents well over one-half of the individuals' total unearned increment.

The large rise of liquid assets in relation to total assets from 7.8 percent in 1900 to 19.7 percent in 1949 also suggests the vulnerability of those that hold liquid assets. These assets remain unchanged in dollar value as prices change. The holders suffer losses as prices rise.

This increase in the proportion of liquid assets and intangible assets in relation to total assets, points to vulnerability to inflation. Households, in particular, increased their share of intangible assets to total assets from 37 percent in 1899 to 53 percent in 1949. The proportion of the rise for business enterprise was not as large, and governments' increase has been from 18 to 36 percent. Price-sensitive assets to total assets for households declined from 81 to 65 percent of total assets, for business enterprises from 50 to 40 percent, for nonfinancial corporations rose from 67 to 75 percent, and for governments declined from 71 to 50 percent. Those that experienced declines in price sensitive assets are likely to be affected by the inflationary process to that extent.

But we should also consider the change in debt ratios. Here, households experienced losses in the sense that they did not gain as much from rising prices with a decline of debt ratios, for their debts declined from 10 to 8.6 percent. The debts of business enterprises rose from 54 to 57 percent, and governments from 48 to 156.2 percent. Here governments are the main gainers and households the main losers.

MORTGAGES AND THE INFLATIONARY PROCESS

In late 1959, total mortgages were about \$181 billion, and they are held largely by financial institutions. With the rise of prices and the increase in per capita incomes, the mortgagee, of course, gains with the passage of time. His payments in dollars of stable purchasing power tend to decline and in relation to the total income available even more. Nonfarm residential mortgages absorb an increasing percentage of new savings.

It is of some interest that when we examine the income distribution of those who get into debt on installment payments of all kinds, we find that the lowest incomes do not incur much indebtedness of this type. For example, those with incomes of less than \$1,000 in 1957 and 1958 incurred little indebtedness; for all incomes, 52 percent did not have installment debt payments to make, but 73 percent of those with incomes under \$1,000 had no debt payments. Then the amount of indebtedness tends to increase up to incomes of \$6,000 to \$10,000, where they seem to be at a maximum, and then decline after that.

One of the peculiar developments of our Federal housing program has been the tendency for houses to be covered under Federal guarantees at higher and higher values. For example, in 1952 the average property value under FHA, section 203 guarantees, was \$10,022; by 1957, the total was \$14,261. Hence the appeal had to be made to higher and higher income groups, because per capita income did not rise nearly as much. Therefore, Federal policy tends to favor especially the middle and high income groups who profit further from the large mortgages currently being put on houses. In view of the increased tendency to put large mortgages on houses, it might be assumed that the burden of mortgages tends to rise vis-a-vis income. But this does not seem to be true for two reasons: first, because the mortgages tend to go to higher income groups, and, secondly, because there are longer period mortgages and this tends to bring down the annual cost. On reasonable assumptions concerning the rise of prices and incomes, a 30-year mortgage today might well reduce the real cost in terms of dollars of stable purchasing power by about 20 percent.

WAGES, OTHER SHARES, AND PRICES

The distributive effects of inflation on different shares of income depend in part upon the type of inflation that prevails. Indeed, if the current theory of the cost-push explanation of inflation is accepted, then to that extent it may be assumed that wages lead the rise of prices, and to that extent gain at the expense of other shares of the national income. In fact, if we examine the relative movements of prices and wages in the three major wars—the Civil War, World War I, and World War II—we will find a considerable lag of wages in the Civil War, a substantial lead in World War I, and a much greater lead in World War II. This large gain for wages in World War II should be written down to some extent, however, in view of the control of spending and the unavailability of goods.

An examination of recent trade cycles or even a comparison of trade cycles before the war and recent trade cycles does point toward a tendency for prices to decline less and even rise in recession periods, and wages, instead of falling substantially in recession periods, tend to be stabilized and wage rates even rise. Here again we note a tendency for wages to rise even in periods of recession, and even more, of course, in periods of prosperity.

It is clear, of course, that as the economy has grown, real wage rates have increased. Moreover, they have increased more than might be suggested by the rise of product man-hour output or even by the rise of man-hour output corrected for any change in prices. Other costs, however, have also increased per unit of output about as much as wages. In 1948-56 employee compensation per dollar of real product rose by 28 percent, and nonlabor payments per dollar of real product by 27 percent, and though the real product per employee rose by 26 percent, average hourly compensation rose by 61 percent, suggesting an inflationary effect of rising wage rates. As might be expected, consumer prices rose, and actually by 22 percent.

In general, labor gained in the percentage of income, though this gain is to some extent tied to the changing distribution of employment; that is to say, employments where labor's share of total income was large tend to become more important. The increase in the proportion of income going to labor is partly explained by the much larger rise in the supply of capital than of labor.

An examination of the rise of productivity, output, and real wages over a period of 50 years yields some interesting results.

Variations in the rise of productivity are very large, as are those in output. But the differences in real wages are considerably less. What is striking is the lack of any close correlation between the rise of output or productivity and the trend in real hourly earnings. For example, in the electric light and power industry, output rose by 244 times, and output per unit of income by almost 17 times, and yet real hourly earnings only rose by 189 percent and prices actually declined by 38 percent. In contrast, in anthracite coal the rise of output was only 51 percent; of productivity, 47 percent; of prices, 336 percent; and real hourly earnings actually rose by 262 percent. It might be expected, when output rises little, prices would rise a great deal. These figures do suggest that the gains of productivity are distributed over the whole economy and that even industries that do not experience large improvements share in these gains. In the short run, there

is some evidence that in those industries where production rises greatly real wages would also rise substantially. But the longrun trends do not carry similar implications.

We should mention one other aspect of the inflationary process, namely, the tendency to set aside funds for replacement of equipment and capital and inventories on the basis of costs of acquisition. This practice, which is generally the one required by Government for tax purposes, does mean that as prices rise the amounts allocated for depreciation and replacement of inventories become inadequate. Therefore, profits seem to be larger than they really are and this stimulates output and investment. One estimate put replacement costs of construction and equipment in manufacturing industries at 158 of acquisition costs in 1948, and 138 in 1955.

There can be little doubt in general that the wages are much more likely to exceed the rise of productivity, corrected for the price movements than was true in earlier years. Senator Douglas' study on the movement of real wages from 1899 until 1926 showed this earlier trend very clearly. There seemed to be some lag in the upward movement of real wages, though there were very serious differences among different industries. For example, in this period teachers' real income went up very much as did real income in manufacturing, but in many of the service industries and Government real wages tended to fall. Of course, an explanation of these movements is partly the change in demand for the products of the various groups. Education was on the rise during this period, and State and local governments did not have the grave financial problems they have today and therefore teachers' salaries rose. At that time, also, there seems to have been less of a tendency for the general gains of productivity to be spread more evenly over the economy as currently.

ATTEMPTS TO BEAT INFLATION

In various ways, groups of our society tend to protect themselves against inflation. For example, many pension contracts are now made with an escalator clause. Again, institutional investors of pension funds tend to put a larger proportion of their assets in common stock. The recent tendency to desert the bond market and invest in common stock has been reflected in the very large rise in security prices. But there are limits to the extent to which this can be done. As the bond market is deserted and people increasingly invest in equities, the tendency will be for equities to rise in price and the yield to fall. With current tax advantages in financing through the issue of bonds and the desertion of the bond market, the result tends to be an increased yield on Government and other bonds. Hence, we can explain a 5 percent yield on bonds by 1959 and of considerably less than 3 percent on equities. In an economy that is growing steadily, the gains of growth, as well as the increasing profits associated with inflation, go especially to the holders of equities. Therefore, an investor in choosing between bonds and stocks will expect to be compensated in the purchase of bonds by a few percent for any possible rise of prices and also an additional few percent for growth. But this movement into the stock market does result in much higher yields on bonds, and the protection through the purchase of equities is gradually reduced as the yield on these securities is greatly reduced.

One study showed that a given sum of money invested on December 13, 1948, would have the following real value in 1958 in 1948 dollars: Cash, a loss of 16.7 percent; U.S. Treasury 2½s of 1967-72, a loss of 29 percent; preferred stocks, a loss of 25 percent; common stocks, railroads, a gain of 106 percent; industrials, a gain of 225 percent; public utilities, 125 percent; fire insurance, 19 percent; and New York City banks, 81 percent. The selling price for a typical one-family residence, a gain of 0.8 percent; farm real estate, a rise of 28 percent.

SOME INTERNATIONAL ASPECTS

The dramatic change in the balance of payments to the United States has occurred since 1957 and has again raised the question of the relationship between inflation and the balance of payments. It is generally known that a rise of prices tends to bring about an increase of imports and a reduction of exports and, therefore, an unfavorable balance of payments. In 1958 we lost about \$3 billion in gold and dollar claims to foreigners and in 1959 the losses might very well rise to \$4 billion additional. There is great concern about this dramatic reversal in the balance of payments.

What is the explanation? Unudoubtedly, we have had a little inflation in the last 3 years but the amount of inflation as compared to other countries has not been large. In fact, since the beginning of the postwar period our record has been unusually good as compared with that of other countries. Indeed, to some extent, other countries correct for their rise of prices by devaluation, though generally the devaluation follows the price rise and if devaluation proceeds under full employment conditions, prices rise rapidly to a point suggested by the new external value of the currency.

I would emphasize especially the improved competitive position of foreign countries that might be expected after a devastating war as the major explanation of our adverse balance of payments—not inflation here. I would also stress especially the large foreign payments for military establishments abroad, foreign aid of other kinds, private capital movements and the like. With an excess of exports of \$3 billion and payments of this nature of about \$9 billion obviously international difficulties may arise.

What is the solution to this problem? Clearly, a great deal of inflation would damage our balance of payments position. I am not inclined to believe that a 1 or 2 percent inflation would be a very serious matter in view of the inflationary trends in the rest of the world, especially with their large investment and development programs. One solution is, of course, for foreign countries to reduce their barriers to American goods. Another is for military aid abroad that is not necessary to be cut, and also to stop encouraging excessive exportations of private capital. Insofar as our competitive position has deteriorated too much, as it has in some industries, the solution would lie partly in reduced barriers abroad to our goods and partly in improved methods of production here.

CHAPTER 2. THE PROBLEM

My task is largely to discuss the effects of inflation on the economy, on the shares going to different groups of the population, on

the Government responsible for raising the revenue and spending it, and also on our international position. The "real" problem which we cannot completely disregard is the relationship between inflation and growth. One of the effects of inflation is, of course, to what extent it contributes to a rise or fall of output.

In this particular study, I am concerned primarily with what we generally refer to as "creeping inflation." In the minds of most, this means a rise of the prices of 1, 2, or possibly even 3 percent, though the last is such a serious increase that it should not perhaps be included under creeping inflation. A long continued rise of prices of 3 percent a year bring serious results even in a generation.

I shall say very little about the larger doses of inflation, for example, the experience during the French Revolution, when prices seemed to have risen 200 times in a period of several years, the Russian inflation after World War I, which was apparently brought on partly to expropriate all those who had claims to rubles, or the Chinese inflation and certainly not the postwar Hungarian inflation when prices rose 10¹⁷—a world's record. These are tremendous inflations and they bring about problems and effects that are largely irrelevant for the kind of problems we are discussing today. Indeed, much has been said of the possibility of a creeping inflation bringing on a galloping inflation. But when one considers that over 120 years we have had a rise of prices averaging a little more than 1 percent, I do not think the dangers are as serious as often made out, though I am also convinced that the more we talk about these dangers the greater the chance that a creeping inflation will result in a galloping inflation.

I shall not discuss here wartime inflations. Indeed, in World War II the rise of prices was surprisingly moderate, an increase of roughly 30 percent from 1940 to 1945; but the price rise was contained by various control measures, and once the controls were removed, we had a much more serious rise of prices in 1946 and 1947.

At any rate, inflations in wartimes are likely to be much more than creeping inflations despite the great progress made in handling inflations during wartimes. I once estimated that, if one allows for the proportion of economic resources used for war purposes, inflation in the Civil War was about 12 times as great as in World War II, and the inflation in World War I was about 4 times as great as in World War II. Nevertheless, despite our increased capacity to handle inflation during war times, it is unlikely that in a major war the inflation would proceed at a rate of less than, say, 2 percent a year. I might even go further and say that in a modern atomic age the rate of inflation, in view of the great destruction that would be done, would be a matter of tertiary importance.

I also assume that the inflation we are discussing is genuine. By that I mean there has been a good deal of discussion of the point that the statistics on price rises overestimate the increase in prices, because we allow inadequately for quality. This point has been made numerous times.

Professor Ruggles has made this point effectively in the compendium before the Joint Economic Committee. He said:

* * * It would indeed be interesting if price comparisons, taking quality and improvement into account, could be made between periods. This question might be asked another way. Suppose an individual were given \$1,000 and a choice of

ordering goods either from an early postwar Sears, Roebuck catalog (say, 1948) or a current (1957) catalog. If he were permitted to spend the money in terms of only one catalog, which catalog would he choose? The 1948 catalog has substantially lower prices, but also less advanced products. If the 1957 catalog were chosen, it could not be said that the prices rose from 1948 to 1957, despite the evidence of the price indexes. Different people would undoubtedly answer this kind of question differently, but it is by no means certain that an overwhelming majority would choose to spend their money under the 1948 price and product conditions rather than on the 1957 conditions, despite the fact that the implicit price indexes of consumer goods have risen about 17 percent since 1948.²

It is scarcely necessary to remind the reader that the extent of inflation depends, in no small part, upon the base period chosen. For example, if we take 1913 as the base year for the Consumer Price Index, we would find that the annual rate of inflation from 1913 to 1958 was 2.4 percent, but from 1920 the increase would be 1 percent, and from 1955, 2.5 percent. But from 1939 the rise would be 3.9 percent. We often discuss the 50-cent dollar, meaning the reduction of value since 1939; but note that in comparison with 1929, the dollar is now worth 59 cents. In other words, part of the inflation was a correction of deflation in the 1930's.

The 1958 dollar was worth as follows, in relation to various base years:

	Cents		Cents		Cents
1913-----	36	1933-----	45	1950-----	83
1920-----	69	1939-----	48	1951-----	90
1922-----	58	1945-----	62	1953-----	93
1929-----	59	1948-----	83	1955-----	93

Source: Business Week, Aug. 3, 1959, p. 95.

I am to discuss later the problem of whether the current inflation is an excess demand, that is a classic inflation, or a cost-push and administered price inflation. I have discussed this problem at various times.³ Indeed, an excess demand inflation is likely to have a different incidence on the distribution of the costs of inflation than a wage-push inflation. A wage-push inflation obviously means that wages (and other costs) rise first and then prices follow, and, therefore, one would assume that labor does reasonably well in such an inflation. The excess demand inflation may more likely result in a lag of wages behind the rise of prices and, therefore, a less satisfactory position for labor income.

CHAPTER 3. INFLATION AND GROWTH

INTRODUCTORY

One of the strongest arguments used on behalf of inflation is that it is a necessary price to pay for progress. The argument seems to be especially valid when applied to the history of the 1950's. But it could also be relevant for an understanding of our history since 1939. Only when a wartime demand was superimposed on a modest peacetime demand did this country achieve real prosperity. As late as 1939, unemployment was still at 9.5 million or about 17 percent of the labor

² Joint Economic Committee, "Relationship of Prices, Economic Stability, and Growth," compendium of papers submitted by panelists appearing before the Joint Economic Committee, March 1958, p. 298.

³ For example: the "Investigation of the Financial Condition of the United States. Pt. 7: An Analysis of Pts. 1-6 Held During the 85th Congress," Senate Committee on Finance, August 1959, pp. 2140-2143.

force. Then came defense and war and by 1944 military purchases had risen to \$88 billion and unemployment had fell to 1 million. Prices rose by 25 to 30 percent and the real rise was concealed by controls. A price rise seemed to be a necessary condition for increased output. Growth is one aspect of the problem of incidence of inflation.

But I do not want to carry this argument too far. The historical and geographical material summarized in this chapter does not yield a clear-cut picture of the positive relation of price rise and output. But it does suggest that even with very large inflation (and in some instances a galloping inflation) output continues to rise. But the effects of galloping inflation are so serious in other respects that few would endorse it.

Perhaps the strongest argument for inflation as a price to be paid for rising output can be raised by the experience in the last 10 years. Here there seems to be a real danger that excessive concern with the price level and restrictions on monetary supplies may bring unnecessary curtailments of output and recessions.

INFLATION, A NECESSARY COST OF GROWTH?

The relationship between the price level and growth has had a long history. The view widely held for many years has been that when prices rise output also tends to rise. The explanation of this, in part, is that with rising prices the businessman profits because costs do not increase as rapidly. The assumption is that wages lag behind and fixed charges also tend to become less burdensome as prices and sales increase. Of course, as trade unions become more powerful and as they tend to eliminate the lag and perhaps even anticipate the rise of prices through an increase in wages, this argument loses a considerable amount of its force.

But in recent years, the problem has become of much greater general interest. The charge has been made, for example, that the present administration is too much concerned with the stability of the currency, and in order to achieve absolute stability endangers the economy by reducing supplies of money and therefore tends to bring about a fall of prices, or at least a reduction in the available supply of money and thus induces unemployment.

There is no doubt but that the administration does stress greatly its anti-inflation policy. Especially since the Democratic Party was in power during the Great War and postwar inflation, the party in power now tends to exploit the inflationary trends in the economy. Their concern emerges partly in trying to protect the interests of those that have claims to dollars and who would, therefore, suffer through a rise of prices, and in particular those who have bonds, other kinds of property and income that do not respond to the rise in prices, and particularly older men and women who have relatively fixed incomes; and since they are not generally members of the labor market, are unable to protect themselves.

Many have been critical of the administration and monetary authority, particularly in 1953 and in 1955-57, for restrictive monetary policies were followed by recessions. Undoubtedly there are other explanations of the recession; for example, the excessive rise of investments from 1955 on, but many do believe that restrictive monetary policies contributed toward the resultant recession.

Professor Slichter, for example, argued that under current conditions of setting wages and with the great influence of the strong trade unions it was not possible to prevent increases in wages that tend to bring about higher prices. He then said that it is better to allow some rise in prices and maintain output at a high level than to try to stop the rise of prices associated with higher wages and, therefore, tend to bring about reduced output and a recession. Though Slichter was willing to admit that in the past growth had been accomplished by both rising and falling prices, he did not believe that this was possible in the future; it is inevitable that growth would be accompanied by a rise of prices.⁴

THE CASE FOR GROWTH

Growth rate is important for many reasons. The greater the growth, the larger the income and, therefore, the more available for our needs for consumption as well as for investment. In this connection, it can also be pointed out that, on the whole, the present administration has tended to favor investment as the main objective of economic policy rather than increased consumption. Yet we all know that one of the serious problems of maintaining an adequate demand for our highly productive economy is to maintain consumption at an adequate level. There is no use turning out more and more investment goods if the buying power is not available.

The higher the rate of economic growth, the more will be available to meet the needs of the people that cannot be met through private spending. In other words, a more rapid rate of growth means much larger income and increased capacity to spend for schools, roads, health, urban redevelopment, and similar services on which we are underspending now. For example, the Rockefeller report shows that, as compared to \$86 billion Government purchases of goods and services in 1957, Government purchases of goods and services with a growth rate of 4 percent might yield \$153 billion in 1967.

On the assumption of expected increases in population and relatively small amounts of unemployment, and continued rise of productivity, we can make reasonable guesses about our future gross national product (GNP). For example, a study by the McGraw-Hill Co. in 1956 estimated that the GNP in 1955 was at \$391 billion at that time, and on assumptions in the table, would rise to \$653 billion by 1970, or an increase of almost two-thirds.

	Gross national product	Workers	Hours per week	Output per man-hour
	<i>Billions</i>	<i>Millions</i>		
1955.....	\$391	63.1	39.9	\$2.99
1970.....	653	80.5	36.0	4.33

Source: Hearings, Joint Economic Committee on "World Economic Growth and Competition," 1956, p. 13.

In a study of economic growth the CED showed that the average annual rise since 1880 was 3 percent (a doubling in 20 years as the gains are compounded), and in the last 10 years, roughly 4 percent.

⁴ See hearings, Joint Economic Committee, 1959, on "Employment, Growth, and Prices," pp. 6-11.

The CED also points out that, should the rate of growth in GNP continue at 3 percent, by 1975 the GNP would rise to \$725 billion in 1956 prices; at that time, if the share of GNP absorbed by Government does not change, American families would have an average income of \$7,000 available for spending and savings after taxes as compared with \$5,300 in 1956.⁵

The Rockefeller report brings out dramatically the difference between the rise of GNP under differing assumptions of growth. In 10 years a 3-percent rate of growth would yield a GNP of \$83 billion in 1967 as compared with \$434 billion in 1957 (in 1957 dollars). But a 4-percent growth rate which had been achieved over the 10 years, 1947-57, would yield \$642 billion by 1967 and, at an accelerated rate of 5 percent which the Rockefeller report considers as possible, the product would be \$707 billion. Note the difference of \$124 billion of annual product obtained from a 5-percent growth as against a 3-percent.⁶

Perhaps the most potent reason for a high rate growth of GNP is our struggle with communism. Mr. Allen Dulles made this clear at the 46th annual meeting of the U.S. Chamber of Commerce as follows:

Whereas Soviet GNP was about 33 percent of the United States in 1950, by 1956 it had increased to about 40 percent, and by 1962 it may be about 50 percent of our own. This means that the Soviet economy has been growing, and is expected to continue to grow through 1962 at a rate roughly twice that of the economy of the United States.

This indicates a rate of growth of about 9 percent for the Soviet Union. At this rate of growth, it would not be very long before the Soviet's GNP would be as large as ours. This is on the assumption that our GNP does not rise much more than 2 percent a year, a rate of growth in some recent years but less than we are likely to achieve. Moreover, a given GNP yields much more in security outlays to the Soviet than to this country. For example, they devote only about one-half as much of their GNP for services relatively as this country does, roughly 25 percent as against 50 percent by the United States. Hence, they can, for this and other reasons, divert resource to security much more easily than this country can.

According to an official Soviet report, the Soviet Union's annual rise of industrial production averaged 11.5 percent from 1928 to 1955; according to Hodgman's study, 9.2 percent; according to the Joint Economic Committee staff, 7.7 percent. The corresponding production rise in the United States was 3.6 percent from 1928 to 1955; and from 1867 to 1907 when the U.S. economy was roughly at the stage of development as the Russian from 1928 to 1955, our growth was 5.2 percent per year.⁷

⁵ CED: "Economic Growth in the United States, Its Past and Future," February 1958, pp. 15, 36.

⁶ The Rockefeller Report on the U.S. Economy, "The Challenge to America: Its Economic and Social Aspects," 1958, p. 66.

⁷ "Soviet Economic Growth: A Comparison With United States," a study for the Joint Economic Committee by the Legislative Reference Service of the Library of Congress, 1957, p. 24.

GROWTH AND PRICES: THE HISTORICAL RECORD

Historical record on the relationship between prices and growth does not yield clear conclusions. Dr. Goldsmith presented the following table to the Joint Economic Committee:

TABLE 3-1.—*Trend of gross national product and personal consumption, 1839-1959*[Percent increase per year ¹]

	Entire period, 1839-1959	60-year subperiods		40-year subperiods		
		1839-99	1899-1959	1839-79	1879-1919	1919-59
	(1)	(2)	(3)	(4)	(5)	(5)
Gross national product:						
1. Aggregate, current prices.....	4.85	4.13	5.59	4.48	5.69	4.40
2. Price level.....	1.15	— .10	2.42	.16	1.91	1.40
3. Aggregate, constant prices.....	3.66	4.23	3.09	4.31	3.72	2.97
4. Population.....	1.97	2.50	1.45	2.71	1.91	1.30
5. Per head, constant prices.....	1.64	1.67	1.62	1.55	1.76	1.64

¹ Calculated from values in 1st and last year of period.

Source: Hearings, Joint Economic Committee, 1959, on "Employment, Growth, and Price Levels," p 271.

This table shows that with an average increase in prices of 1.15 percent over the years 1839 to 1959 the national product rose in constant prices by 3.66 percent per year. A rise of population of 1.97 percent contributed to this increase. Against the rise of price levels of 1.15, the gross national product per head in constant prices rose 1.64.

It will be noticed from this table that in the 60 years, 1839-99, the price level dropped on the average of 0.10 percent, and yet output per head in constant prices rose by 1.67 percent. But in the period from 1899 to 1959, when the rise of productivity, that is, the rise of output per head in constant prices was 1.62 percent, or roughly the same as 1839-99, the rise of prices was 2.42 percent per year. When these 120 years are broken into 40-year subperiods, it will be found that the largest average rise of productivity was in the period 1879-1919, when the increase was 1.76 per year, and this was also the period when there was the largest rise of prices, 1.91 percent.⁸ Perhaps one might expect a larger rise of output vis-a-vis the price level in the 19th century than in the 20th since natural resources were more ample.

Discussing the duration of long swings and output, Professor Abramovitz showed that these generally run from 10 to 20 years, and that they involve a movement in the rate of growth from about 2 percent per annum to about 6 percent, an average of around 4 percent.

Professor Abramovitz did not go into the relationship between these long periods of growth or the long swings in the growth with prices, but he does suggest that there is some relationship between these and the supply of money. He agrees with Professor Friedman that—

* * * whereas in ordinary recessions, there is mere retardation in the growth of the money supply, severe slumps were marked by an actual decline in the money stock. These facts can be fitted into the story already related without difficulty * * *. So long as the stock of money, corrected for business cycles, rises at a sufficient rate, prosperity is well maintained, and output rises steadily, subject only to minor recessions. Presumably, such steady growth would be

⁸ Hearings, "Employment, Growth, and Price Level. Pt. 2: Historical and Comparative Rates of Production, Productivity, and Prices," p 271.

traceable to the stimulus which rising money balances afford to expenditures of all kinds. But if the rate of growth of money balances falls below a certain level, a fortiori, if money stock declines, demand ceases to rise fast enough to absorb our growing capacity to produce, and investment expenditure then falls.⁹

Inadequate supplies of money obviously would tend to curtail the rate of growth. In a recent period the Federal Reserve was criticized for allowing the supply of money to rise by only 1 percent per year when output was rising by several percent. Obviously, the Federal Reserve depended in part upon an increased use of the existing supplies of money. Additional money is needed not only to finance rising output, but also, because the public holds a rising part of its resources in money in relation to income, to cover increased liquidity needs. In other words, as income rises the increase in the supply of money should ordinarily be of equal proportion to the rise of output and in excess insofar as the public increasingly tends to hold a larger proportion of its income in cash.

In a paper before the Joint Economic Committee,¹⁰ Professor Friedman notes that output and prices both rise in the upward swing of the business cycle and both tend to decline during contractions. As we shall show later, the recent tendency has been for prices to rise even in contractions and also even for wages to rise during periods of economic contraction. In other words, we are not as likely, in our present institutional setup, to experience a fall of costs in periods of declining output.

Over the longer period, Professor Friedman finds it difficult to draw any conclusions between output and prices.

What happens to a nation's output over long periods of time depends, in the first instance, on such basic factors as the resources available, the industrial organization of the society, the growth of knowledge and technical skills, the growth of population, the accumulation of capital, and so on. This is the stage on which money and price changes play their parts as the supporting cast.

Indeed, Friedman holds that inflationary price rises seriously distort the effective use of resources.

In the discussion of the cyclical relationship between prices and output, Friedman acknowledges the usual arguments about the lag of costs, inclusive of wages and rates of interest. He also points out that rising prices tend to cut down on efficiency and also to reduce the amount of savings. Over the longer period, he notes that from 1865 to 1879, a period of exceedingly rapid progress, prices were cut in half, though he also notes that in general the larger growth of output was when prices were rising slightly during this period rather than in a period of price decline. In the years 1880-97, the period of generally declining prices, the increase in output was not as large as in the period of rising prices from 1897 to 1913. He also notes that in the period of the 1920's growth was rapid and prices were relatively stable. It should be noted here, however, that there was a considerable amount of profit inflation during this period; in other words, prices did not fall with costs during this period.

Dean Bach holds that there is little evidence—

that inflation has either increased or decreased significantly total economic output in the United States over the last two decades * * *.¹¹

⁹ *Ibid.*, p. 431.

¹⁰ Joint Economic Committee, "Relationship of Prices to Economic Stability and Growth," compendium, 1958, pp. 251-255.

¹¹ Hearings, "Relationship of Prices, Economic Stability, and Growth," Joint Economic Committee, May 1958, pp. 18-20.

Bach's general view is that, if wages and commodity prices are pushed up through governmental monetary and fiscal policies faster than is consistent with high employment and a stable price level, the results will not be good.

Such a policy, fully relied on, will remove most of the incentives for sellers to refrain from continually seeking ever larger income shares through higher wages and prices. We will be continually faced with the necessity of accepting inflation to maintain high level employment * * *.

* * * Indeed, it may become increasingly difficult to have full employment even with inflation, if inflation becomes increasingly accepted and expected. Unions, businessmen, and farmers can readily increase their asking price further the next time around * * *.

In a general way, Professor Baumol's position is a good deal like Professor Bach's.¹² As long as the public expects that inflation is not going to continue forever and believes it will end some day, this expectation can lead businessmen to liquidate inventory and postpone purchases. Another adverse development is the effect of rising prices upon savings and with the reduced real value of their savings, spendings will be curtailed. This reduction in savings will ultimately have adverse effects on investment. Again with inflation and the absence of real economic pressure, Baumol reminds us, the public will tend to reduce their standards of quality. Why produce better products, as Professor Baumol suggests, if the commodity can be sold anyhow?

PRICES AND OUTPUT—BY COUNTRIES

Another approach to this problem is to study the relationship between output and prices for a number of countries. On the basis of a study of Professor Kuznets, Professor Eckstein has produced figures for eight countries for a period of almost 100 years. These figures generally reveal the relation between price and output movements in one decade in relation to a preceding decade. In general these statistics do not prove very much. We do have large rises of output both when prices are falling and when they are rising. For example, in the United States from 1879 to 1888 the output growth was 88 percent above that of the preceding 10 years, while prices dropped by 19½ percent. From 1889 to 1898 the respective figures were 38.2 percent of growth and a price decline of 12.9. But from 1899 to 1908 the output growth was 56.4 percent and price rise 9.3 percent. Almost anyone would agree that a rise of output 10 times as great as in prices, say, an annual 10-percent rise of output and 1 percent in prices, would reflect a great achievement. But a 1-percent increase of output and a 10-percent increase of prices would spell failure. An acceptable and achievable policy lies somewhere in between. In later periods of 10 years, the relationship was more nearly a 1-to-1 relationship of prices and output rise. Of course, in the great depression the rise of output was small, 6.2 percent over 10 years, as against a fall in prices of 18 percent.

As might be expected, with growth, the relative rise of output tends to decline by 10-year periods, though this varies to some extent from country to country. These figures also suggest that one might have a very large increase of prices and one that might be considered almost catastrophic and yet output would rise.

¹² See the compendium, "Relationship of Prices, Economic Stability, and Growth," especially pp. 51-53.

In general, in the early 1950's the increase in output prevailed almost everywhere, and generally the rise of prices was much larger than the rise of output. In this respect the U.S. record was remarkably good compared to that of other countries. Output rose almost as much as prices in the United States during these early years in the 1950's, but in the United Kingdom the rise of prices was almost three times as great, in Japan almost 1,900 times as great, in Norway 5 times as large, in the Netherlands 4 times as large, in Italy almost 200 times as large; in Sweden the record was unusually good with an increase in output almost equal that of prices, and the increase of output was no less than 50 percent. In Denmark the rise of prices was about four times as large as that in output.

These statistics suggest again how difficult it is to draw any very clear conclusions on the relationship between prices and output over long periods of time, even if these statistics extend over many countries. One important explanation of this fact is that there are so many other relevant variables. In the latter part of the 19th century, for example, despite the depressing effects of falling prices, a large increase in output prevailed, in part because of the tremendous gains of productivity associated with the rising industrialization of the country and the movement into more productive industries and in particular the shift from the farms to the factories. In these years, also, in many countries the rise in population was relatively large. In some of these countries, the industrialization had just begun. For example, in Japan the largest industrialization began in the latter part of the 19th century.¹³

Again one might compare, for example, some countries in Latin America. One would find, for example, in a country like Bolivia and Chile, the price rises have been tremendous in recent years and on the whole the increase of output not spectacular. Here it is difficult to say whether the explanation of the slow rise of output and the decline of exports, for example, should be explained by the increase of prices or primarily by the exhaustion of important sources of raw materials.

PRICES AND PER CAPITA OUTPUT IN RECENT YEARS

The above discussion centers largely around the relation of prices and total output. Since during these years, the rise of population varies among countries and also from period to period, a better approach might well be to study the relation between price rise and in-

¹³ See Joint Economic Committee, "Compendium on Relationship of Prices to Economic Stability and Growth," 1958, especially pp. 361 and 362.

crease in real product per capita. Professor Slichter has produced such a table, which I now reproduce :

	Percent increase in consumer price index, 1948-57	Percent increase in real product, per capita, 1948-57		Percent increase in consumer price index, 1948-57	Percent increase in real product, per capita, 1948-57
Austria.....	124.0	93.9	Denmark.....	43.2	16.1
Finland.....	87.5	31.4	Ireland.....	41.8	14.8
France.....	76.7	47.4	Italy.....	27.9	48.1
Spain.....	55.7	34.5	Canada.....	26.2	20.7
Norway.....	51.4	12.6	United States.....	16.9	18.4
United Kingdom.....	50.6	22.7	Belgium.....	12.6	23.0
Sweden.....	46.8	14.6	Switzerland.....	9.4	16.3
Netherlands.....	46.2	20.2			

¹ 1948-55.

² 1950-56.

Source: Hearings, Joint Economic Committee, "Employment, Growth, and Price Levels," 1959, p. 11.

In general, Professor Slichter notes that the relationship is more in the direction of higher output with larger increases in prices during this period from 1948 to 1957. For example, Austria has the highest increase of prices but also has the highest rise of real product per capita, 124 and 94 percent, respectively. According to Professor Slichter the eight countries with the largest increase in consumer price level averaged 35 percent rise in real per capita income, and the seven countries with the smallest increase averaged only 22.5 percent. In general, the relationship between price rise and per capita output movements is not very close.

CREEPING INFLATION LEADS TO WHAT?

One of the arguments used against creeping inflation is that ultimately it becomes a galloping inflation, and the result of a galloping inflation is serious curtailment with output. One can recall, for example, the results of the great inflation after World War I, when not only did the effects of inflation have bad results on the structure of production and the attitude toward production, but also tended to result in a very large depreciation of the currency in Germany, for example, much greater than would be suggested by the relative rise of prices, say, in Germany and the United States. The result was that foreigners could purchase German goods at such a bargain, frequently at 10 cents for the dollar as compared with earlier periods, that the Germans were denuded of their goods. It became very cheap to buy in Germany and very expensive for the Germans to buy abroad. Ultimately, the Germans had to take measures to stop the large exportation of goods.

But it is not at all clear that creeping inflation does result in a galloping inflation. I have already mentioned the point that actually the average increase was only a little over 1 percent over a period of 120 years in American history. Most of that increase occurred in wartimes when it is very difficult to prevent a substantial inflation. In such periods the pressure of excess demand and the emergence of bottlenecks, once a high level of output is obtained, result in a very large rise of prices. Of course, if the rise of output and the increase

in demand occurs in a period when there is much excess capacity, as happened in World War II in the United States, then to that extent the increase in demand may very well be offset to a substantial degree by a rise of output. It is of some interest, as Professor Slichter points out, that for 11 countries the increase in the price level from 1953 to 1957 was substantially less, on the average, than the increase from the years 1948 to 1953. The explanation of this fact might very well be that, having once recovered from the disorganization caused by war, these countries are able to increase output, raise their incomes and provide less inflationary monetary and fiscal policies as the result.¹⁴

RECENT MOVEMENTS OF PRICES AND OUTPUT IN INDIVIDUAL INDUSTRIES

Perhaps a word should be said about the relationship between output and prices in individual industries.

In one respect, one might expect the greater the rise of output in any one industry the lower its prices would be relative to an earlier period. This would be based on a theory that increasing output results in better use of capacity and lower unit costs. Costs tend to fall in the period of rising output on the upward swing of the business cycle though in later stages with increased pressure and bottlenecks, the unit cost may tend to rise.

In the first study paper¹⁵ Professor Schultze presents effectively the general theory that at least from 1955 to 1957 there is a fairly high correlation between the rise of prices and that of output by industries. His conclusion is:

During the 2 years after 1955, total aggregate output and industrial production rose very slowly, and by significantly less than the increase in productive capacity. Aggregate demand was not excessive. The demands for capital goods, for exports and military equipment, however, were in excess of potential supply, while housing and auto demand fell well below the capacity of the two industries. Instead of a realignment of relative prices around a stable center, prices of almost all final goods and services rose. Price increases were generally larger for those goods in excess demand, but were not confined to those goods alone * * *.

He also writes:

* * * On the average, stability of output was associated with substantial price rise. But aggregate output rising less than capacity however, there was no aggregate excess demand over this period * * *.¹⁶

For the years 1947 to 1957 I examined the rise of wholesale prices and of industrial output in a number of industries where relatively comparable figures were available.

¹⁴ Ibid., p. 12.

¹⁵ Charles L. Schultze, "Study Paper No. 1—Recent Inflation in the United States," September 1959.

¹⁶ Ibid., pp. 111 and 113.

TABLE 3-2.—*Rise of wholesale prices and industrial output, 1947-57*

	Wholesale prices rank order	Output rank
Iron and steel.....	1	5
Tires and tubes.....	2	7
Electrical machinery and equipment.....	3	1
Nonferrous metals.....	4	4
Motor vehicles.....	5	6
Paper and pulp.....	6	3
Coal.....	7	10
Chemicals.....	8	2
Foods.....	9	8
Textiles.....	10	9

Here the association does not seem to be too close. Indeed, food and textiles have relatively unsatisfactory rates of growth and also experience relatively low rises of prices. The explanation in foods is undoubtedly, in part, the excess supplies of agricultural products, and in textiles the loss of consumer appeal in the American economy for textiles in competition with other products and services.

In iron and steel and tires the rise of wholesale prices was more than twice as large as in output. In electrical machinery and equipment increase in output was about one-third more than in prices, in non-ferrous metals roughly of equal proportion, and similarly for motor vehicles. Output in paper and pulp greatly exceeded, in fact was about twice as large relatively, as the rise in prices. In coal the wholesale prices rose by 24 percent, whereas output declined by 17 percent. Here the explanation undoubtedly in part is the unusual wage policy of the United Mine Workers Union, a policy that does not take into account the declining market for coal. Wage policy is set to achieve maximum gains for those who can still hold their jobs in an industry where rising productivity and unsatisfactory demand curtail jobs. In chemicals, despite an increase in output of 84 percent, the rise in wholesale prices was only 9 percent. Here is an industry that is clearly gaining in terms of the changing composition of demand and the great advances being made in research.

CHAPTER 4. THE INCIDENCE OF INFLATION ON GOVERNMENT

INTRODUCTORY

How inflation affects Government is of great importance since Government accounts for such a large part of the gross national product and performs such indispensable services as providing security for the Nation, underwriting education, developing our natural resources, building our highways and the like. In 1929 the Government accounted for only 8 percent of the gross national product (GNP), but by 1958, when Government purchases of goods and services were up to \$91 billion, Government accounted for 21 percent of the total GNP. By calendar year 1958, Government or Government receipts were \$115 billion, and expenditures \$125 billion. The difference between these figures and Government purchases of goods and services is, of course, explained largely by the importance of transfer payments which are not reflected in Government purchases of goods and services.

In a study for the CED¹⁷ Professor Eckstein noted that the effect of inflation is likely to be a reduction in the real value of Government budgets. For as inflation proceeds, it would take some time before the Government would appropriate sums or spend sums that would reflect the inflation. There are certain institutional delays involved here, even if the Government wants to achieve a stable level of real governmental expenditures. Because of the money illusion, of course, there might well be a tendency for the Government to cut real expenditures more or increase items less rapidly than otherwise would be the case just because of inflation. Contending that the response of taxes to inflation would be more prompt and effective than the rise of expenditure, Professor Eckstein concludes that, on the whole, inflation tends to improve the state of the budget rather than the reverse. This generalization, however, does not apply to State and local budgets.

Dean Bach contends that the major gains of inflation are obtained by the Government and the large losses by the public. Over a period of about 20 years he calculates "that * * * over \$500 million inflationary erosion of real purchasing power of creditors over the period" has occurred. Since—

householders have consistently been heavy net creditors and governments (especially the Federal Government) consistently net debtors, inflation has caused a huge transfer of purchasing power from households primarily to the Federal Government.

Since the Government debt is not likely to be repaid in the foreseeable future, Dean Bach argues that the real gainers of the reduced real cost of financing the debt are not the taxpayers but the nonbondholders, who are therefore able to increase their share of total output as their incomes increase with inflation. Government bondholders and money holders are partially expropriated by inflation, and the benefit is distributed over the whole population, with the biggest benefit for those who buy the most. All households, according to Bach, hold about 30 percent of their total wealth in the form of fixed dollar value assets, but they are in debt up to only a little over 10 percent of their total wealth.¹⁸

We should note, however, the distribution of Government securities. At the end of 1958, of the \$283 billion outstanding, commercial banks inclusive of the Federal Reserve banks held 33 percent, U.S. Government investment accounts held 19 percent, and other investors held 48 percent. In the last category individuals held 23 percent, State and local governments, miscellaneous investors, and corporations 6 percent each, insurance companies 4½ percent, and mutual savings banks 2½ percent. Obviously, individuals experienced the largest losses from inflation, particularly if we assume that the holdings of the banks really belong to the depositors. Of course, to some extent the holders of equities in banks would suffer, though insofar as their profits responded to inflation or gained from it this would not be true. Government itself was also a very important loser, especially in view of the fact that the excess profits of the Federal Reserve belong to the Gov-

¹⁷ CED, "Trends in Public Expenditures in the Next Decade," April 1959, pp. 8, 9.

¹⁸ Joint Economic Committee, "The Relationship of Prices to Economic Stability and Growth," compendium of papers submitted by the panelists appearing before the Joint Economic Committee, 1958, pp. 41-42.

ernment—but net on all issues, the Treasury gained. Inclusive of the Federal Reserve holdings, Government security holdings accounted for almost 30 percent of the total amounts outstanding.

Whereas commercial banks, excluding the Federal Reserve banks, held just under one-quarter of all outstanding Federal securities, they accounted for slightly over one-third of the total marketable debt and had concentrated two-thirds of their total Federal debt holdings in marketable issues maturing or callable in less than 5 years. This suggests that, unlike most individuals investors, the commercial banks were in a position to adjust their holdings from time to time in response to the growth of inflation. On the other hand, little more than one-tenth of U.S. Government funds' debt holdings were in publicly marketable securities and less than one-twentieth in marketable securities callable in less than 5 years. As a result, these funds seem especially subject to erosion by inflation. The U.S. Government also tended to hold short-term issues much more relatively than their total holdings. Here, when I refer to the U.S. Government, I include the Federal Reserve banks as well.

Obviously, in a period of inflation, those who hold the short-term securities make decisions from time to time as to whether they want to continue to hold securities that pay a fixed return in inflationary periods. It should be added, however, that over the years since 1939, the adjustments of interest rates to the inflation have been very small. Only in the last year or two has there been a substantial adjustment so that with the interest rate at 5 percent and with prices rising 1 or 2 percent a year in the last 10 years, the increase in the rate on short-term issues to 5 percent suggests some adjustment to the inflation. Of course, those that hold longer term securities experience losses as the rate of interest rises in response to inflation. This would be particularly true with those that held securities with more than 10 years to go. At the end of 1958, there were \$8½ billion of these securities and relative to their total holdings, the mutual savings banks and life insurance companies were especially involved and therefore they or their depositors and policyholders experienced to this extent losses from the inflation. This, of course, applies also to the large holders of savings bonds that generally run for 10 years.¹⁹

DISTRIBUTION OF TAX BURDENS AMONG DIFFERENT LEVELS OF GOVERNMENT

It is important to understand that the large rise of GNP over the years has been the result of an increase of productivity, a rise of population and capital, and also the inflationary process. For example, from 1939 to 1959, GNP rose from \$91 to \$437 billion, but at 1958 prices the rise was from \$209 to \$437 billion. These figures point to a rise of one-third to be explained by price changes and two-thirds by the increase in real income. With income rising at such a rate, it is, of course, important that Government revenue should respond. If Government revenue does not respond to the rise of prices, then, to that extent, the Government will perform a less effective job, and its contribution in "real" dollars will decline.

¹⁹ For the details on distribution of Government securities, see hearings, Joint Economic Committee, on "Employment, Growth, and Price Level." Pt. 6: "Government's Management of Its Monetary, Fiscal, and Debt Operations," 1959, pp. 1114-1117.

But we can go even further than that. It would be important for the Government to have sources of revenue that respond to rises in total income, whether the increase is real, or the result of price rises. Unless the Government does match the increase in the growth of real income, the Government contribution to the life of the country would relatively be reduced.

From 1952 to 1958, the increase of GNP in current dollars was \$90 billion and in 1958 dollars \$38 billion, or roughly the inflation accounted for about 58 percent of the rise of GNP as against only one-third from 1939 to 1958.

As I shall show presently, the structure of taxation varies a great deal at different levels of government, and with this there is a varying degree of sensitivity to price and income changes. Table 4-1, for example, shows quite clearly that the Federal Government's share has increased greatly, especially since 1938. In that year, the Federal Government tax revenue as a proportion of total revenue was 41 percent, but by 1957 it had risen to 71 percent. During this same period State tax revenue declined from 24 to roughly 15 percent and local tax revenue from 35 to 15 percent. It is of some interest that in 1902 State tax revenue was roughly 11½ percent of the total tax revenues and almost 15 percent in 1957, but local tax revenues, which were 51 percent of the total, or four to five times as large as the taxes of the State government in 1902, had declined to a proportion virtually identical with that of State tax revenue. One explanation of this very significant relative decline in the contribution of local tax revenue is the great dependence on the general property tax which on the whole responds very slowly, if at all, to rising prices and rising income. Under this pressure and for other reasons as well, the State governments had to take on a much larger relative share of the burden of government.

TABLE 4-1.—*Tax revenues and percent Federal, State, and local tax revenues of total tax revenues, all levels of government, 1902, 1927, 1938, 1948, and 1957*

	Total tax revenue (millions)	Federal tax revenue		State tax revenue		Local tax revenue	
		Millions	Percent	Millions	Percent	Millions	Percent
1957 (preliminary)-----	\$98,858	\$69,815	70.62	\$14,531	14.70	\$14,511	14.68
1948-----	51,218	37,876	73.95	6,743	13.16	6,599	12.88
1938-----	12,949	5,344	41.27	3,132	24.19	4,473	34.54
1927-----	9,451	3,364	35.59	1,608	17.01	4,479	47.39
1902-----	1,373	513	37.36	156	11.36	704	51.27

Source: Adapted and calculated from "Governmental Finances in the United States, 1902 to 1957," GCGA-No. 9, March 1959, U.S. Department of Commerce, Bureau of the Census, tables 2, 3, 5, 6.

Under the pressure of increased needs and inflexible tax systems, State and local governments have tended to respond by obtaining additional revenues from other governments—the State governments, of course, depending upon the Federal Government, and local governments, in turn, depending upon both the Federal and State Governments. Federal Government revenues are much more flexible than State and local, and State than local. It will be noted that there has been a steady decline in the proportion of tax revenue to general revenue for both State and local government. In 1902 tax revenue accounted for 94.5 and 82.5 percent, respectively, for State and local government in relation to general revenue. By 1938, the figures were 82 and 67 percent and by 1957, 79 and 57 percent. The major explanation here is the large contributions of the Federal Government to State government and of State and Federal Government to local government. The largest gains, of course, have been for local government, which obtained help from both Federal and State Governments. In this manner, the Federal Government, with its tax system which responds reasonably well to the rise in prices and increased income payments, tends to pass on to State and local governments the advantage of its more flexible tax system. It will be noted that the State governments obtain about \$4 billion more out of total general revenues than out of their tax revenues, and local governments obtain \$11 billion additional.

TABLE 4-2.—*Percent tax revenue of general revenue*
[Revenues in millions of dollars]

	All levels of government			Federal Government			State governments			Local governments		
	Tax revenue	General revenue	Percent	Tax revenue	General revenue	Percent	Tax revenue ¹	General revenue	Percent	Tax revenue ¹	General revenue	Percent
1957 (preliminary)-----	98,858	113,735	86.92	69,815	79,263	88.08	14,531	18,458	78.72	14,511	25,639	56.60
1948-----	51,218	59,666	85.84	37,876	44,277	85.54	6,743	8,483	79.49	6,599	11,373	58.02
1938-----	12,949	15,023	86.16	1,344	6,595	81.03	3,132	3,813	82.14	4,473	6,651	67.25
1927-----	9,451	11,551	81.82	3,364	4,396	76.52	1,698	1,766	91.05	4,479	5,903	75.88
1902-----	1,373	1,632	84.12	513	663	78.56	156	165	94.54	704	854	82.44

¹ Intergovernmental transfers are included in State and local governments' general revenues.

Source: Adapted and calculated from "Governmental Finances in the United States, 1902-57," G-CGA-No. 9, March 1959, U.S. Department of Commerce, Bureau of the Census, tables 2, 3, 5, and 6.

Before discussing the general structure of our tax system, I should point out that an increasing proportion of general revenue comes from insurance trust revenue, except from 1938 to 1948. All governments, by 1957, were receiving \$12.3 billion in insurance trust revenue as against \$1.6 billion in 1938 and, of course, the largest receipts of this nature were Federal Government, with an increase from \$630 million to \$8.7 billion from 1938 to 1957. For State governments the rise was from \$890 million to \$3.2 billion.

These trust funds or trust revenues raise an especially serious problem with the trend toward inflation and rising income payments. In a general way, one would expect that these funds would pay out in various benefits, for example, old age or unemployment, an amount that would correspond roughly with the rise of income on a per capita basis. We shall discuss these various funds much more fully in a later chapter. I should say a word about the problem here. Generally, whatever the program is—for example, it may be a civil service retirement program or an old age insurance program—the assumption is that the benefits have been paid out on the basis of the income at the time of retirement. Therefore, if benefits match the high income at the years of retirement, it can be said that these programs would, in a general way, provide benefits that match the rise in per capita income. Actually, in practice, this does not tend to happen. In some instances, the benefits are given as a flat sum. This is perhaps more true in private benefit programs than in public. Even when the sum is not a flat sum, it is tied to some extent to current wage levels rather than wage or income levels at time of retirement. The average actuary does not generally assume that, for example, 25 years from now even without inflation, the average per capita income will be about twice as large as it is now. If we assume inflation, the rise in per capita income would be even greater. Therefore, adjustments have to be made frequently, but they are often greatly delayed and therefore the benefit payments not only frequently do not keep up with the rise of prices but even more so they fall greatly, relative to the rise of per capita income. In this connection, it is of some interest that, in 1957, the proportion of insurance trust revenue to total general revenue was roughly the same as in 1938, and that despite the tremendous growth of these insurance programs. At least in relation to the total position of government, these funds are becoming surprisingly unequal to the demands being put upon them and suggest the need of later periodic upper revisions of benefits which would be financed either through general taxation or much larger increases in payroll taxes.

In this connection, it is of some interest that under the old age and survivors' insurance program, the most important of all these programs, the assumption made by the actuary is that wages will not change. Obviously, insofar as they do change, benefits would have to be adjusted to the rising price and wage level.

TABLE 4-3.—*Percent insurance trust revenue of general revenue*

[Revenue in millions of dollars]

	All levels of government			Federal Government			State governments			Local governments		
	Insurance trust revenue	General revenue	Per-cent	Insurance trust revenue	General revenue	Per-cent	Insurance trust revenue	General revenue ¹	Per-cent	Insurance trust revenue	General revenue ¹	Per-cent
1957 ² -----	12,305	113,735	10.82	8,663	79,263	10.93	3,209	18,458	17.38	433	25,639	1.69
1948-----	4,828	59,666	8.09	2,977	44,277	6.72	1,494	8,483	17.61	140	11,373	1.23
1938-----	1,584	15,023	10.54	631	6,595	9.57	890	3,813	23.34	63	6,651	.95
1927-----	237	11,551	2.05	73	4,396	1.66	137	1,766	7.76	27	5,903	.46
1902-----	-----	1,632	-----	-----	653	-----	-----	165	-----	-----	854	-----

¹ Intergovernmental transfers are included in State and local governments' general revenues.² Preliminary.

Source: Calculated and adapted from "Government Finances in the United States, 1902-57," G-CGA-No. 9, March 1959, U.S. Department of Commerce, Bureau of the Census, tables 2, 3, 5, and 6.

I now turn to the problem of the tax structure of different governments, as well as the trend in these structures. This is all elaborated in table 4-4. Note, first, that total tax revenue rose from a little more than \$1 billion in 1902 to \$13 billion in 1938, to \$51 billion in 1948, and \$99 billion in 1957.

On the whole, it is generally assumed that the direct income taxes, both personal and corporate, respond to rises in prices and incomes much more than, for example, sales receipts, custom duty, or the property tax. In a general way, the property tax may be assumed to be the least flexible of all the taxes we have under consideration, except for the poll tax.

Fortunately, the largest yield of revenue comes from the personal income tax, for it yields \$37 billion, almost 38 percent of all tax revenue. This contribution toward the Federal tax receipts has tended to grow greatly, though there was some decline during the depression, relatively speaking. By 1957, when the personal income yielded more than half of the total revenue of the Federal Government, its contribution to State revenue has also tended to increase, but not nearly so much as to the Federal Government, and even by 1957 State income taxes yielded only about 11 percent of total tax revenue.

The corporate income is also tending to become much more important, though its growth absolutely and relatively has not been nearly as great as for the personal income tax. For example, its relative contribution rose from 25 percent in 1938 to 50 percent in 1957, whereas the relative contribution of the personal income tax has increased more than 200 percent.

On the whole, the increased contribution of corporate income taxes to State finance have been disappointing. One explanation of this undoubtedly is the fear of interstate competition which tends to result in a slower growth of direct taxes and therefore results in a less than adequate use of direct taxes by State government, and to that extent, of course, the response of tax revenues to rising prices and incomes is disappointing.

Sales receipts and custom duties respond, to some extent, to increased income, since as incomes rise consumption expenditures also tend to

rise. Where there has been a very large increase in direct taxes, the gains of consumption may not be as large as they otherwise would be. This will explain, for example, to some extent, why GNP rose by 414 percent from 1938 to 1958 and consumption only rose by 349 percent. In general, the trend has been downward in sales tax receipts and custom duties, yielding 37½ percent in 1902 and 20.8 percent in 1957. The explanation of this fact lies largely in the greater importance of Federal tax receipts and also in the unresponsiveness of sales receipts and custom duties to the large rise of income.

But whereas the contribution of these taxes to its total tax revenue to Federal Government tended to decline greatly, their contribution to State revenue tended to increase, and by 1957 they accounted for 58 percent of all State tax revenue. The explanation of this fact is partly that State governments were reluctant to increase their direct taxes on income and corporations and partly because of the high rates of these taxes imposed by the Federal Government and in part because of the fear of interstate competition. On the whole, the sales tax does not have as serious an impact on the interstate competition as do the direct taxes. Another reason for this change is, of course, the great flexibility of the income and other direct taxes and the great need for additional revenue in the great depression and in war. Sales taxes were an obvious source of additional revenue in a period like the 1930's, and it was particularly in the 1930's that these taxes became a much larger part of the total State tax revenue. But the largest absolute gains of these revenues occurred since 1938.

Now I turn to the property tax. This is a tax that responds very slowly to rising prices and rising incomes. One reason for this is that it is difficult for administrators to increase their assessments as the value of property rises. It requires great political courage to reassess on the basis of changing values. Related is the fact that property values frequently do not respond quickly and adequately to increases in income and prices.

The importance of the general property tax lies largely in its important contribution in financing school education. Under our peculiar institutional setup, the major contribution of finance for the public schools comes from the local government, which even today provides close to 60 percent, whereas State government provides somewhat less than 40 percent, and Federal Government provides only 3 or 4 percent to the total cost of public school education. The local governments depend almost wholly on the property tax, roughly 53 percent in a recent year of the total cost of schools was financed by the property tax.²⁰ Undoubtedly, the property tax could be made into a more flexible tax if assessment and rates were adjusted more quickly, but here the pressure of the local taxpayer becomes a dominant factor. But we note differences in the capacity of tax assessors to make adjustments. For example, it is difficult, on the basis of varying rates of growth, to explain an increase in assessed valuation of real and per-

²⁰ See the National Citizen's Commission for the Public Schools, "Financing Public Education in the Decade Ahead," December 1954, p. 58.

sonal property from 1940 to 1953 of 323 percent for Chicago and only 2 percent for Pittsburgh, 6 percent for Boston, and 17 percent for New York. Here, for example, are some increases in valuations from 1940 to 1953:

Percentage of changes in assessed valuation of real and personal property in large cities, 1940-53

New York-----	17	Washington-----	70
Chicago-----	323	Boston-----	6
Philadelphia-----	27	San Francisco-----	130
Los Angeles-----	128	Pittsburgh-----	2
Detroit-----	90	Milwaukee-----	75
Baltimore-----	82	Houston-----	261
Cleveland-----	89	Buffalo-----	9
St. Louis-----	85		

Source: "Financing Public Education in the Decade Ahead," p. 59.

Under the great pressure of increased needs for the public school with public school expenditure rising from a little more than \$2 billion in 1929 to almost \$14 billion in 1959, the need for additional revenue has been great. To some extent the local governments have leaned on State governments, which have contributed an increasing share of the total amounts needed. Some indication of the inflexibility of the general property tax is suggested by the fact that its yield was \$4.7 billion in 1927, \$4.4 billion in 1938, and \$6.1 billion in 1948. It is of some interest that in these years, from 1938 to 1948, the gross GNP rose by more than 200 percent and yet the general property tax rose by less than 40 percent, and its share of total tax revenue dropped from 34 to 12 percent.

But it should be added that from 1948 to 1957 the general property tax recovered considerably. Its increased yield was 114 percent, as compared to a rise of GNP of 170 percent. As a percentage of total revenue, it rose from 12 to 13.2 in 1957, a rather remarkable achievement. The explanation of this very large increase lies partly in the great need for additional expenditure for education, partly in the unavailability of other resources, and partly in the large increase of new construction, which in turn raised total assessments.

In this period of 9 years from 1948 to 1957, total private construction rose by \$241 billion. Even if there were no reassessments of old property and taxes were only \$30 per thousand, this would yield more than the \$7 billion additional of general property tax revenues in 1957 as compared to 1948.²¹

The revitalization of the general property tax in the last 10 years is worthy of note. But we should also make the point that this is a most regressive tax which on the whole has a very serious impact on the low income groups, and we may ask the question whether it is desirable for the general property tax to yield as much as 13 percent of total tax revenue and as much as 87 percent of total local tax revenue. At least the State governments have gradually reduced the contribution of the general property tax to its revenues, the yield declining from 53 percent in 1902 to 3 percent in 1957.

²¹ Totals calculated from the "Economic Report of the President, 1959," p. 175.

TABLE 4-4.—*Percent selected tax categories to total tax revenue, 1902, 1927, 1938, 1948, and 1957*(Revenues in millions¹ of dollars)

	Tax revenue	Personal income		Corporate income		Sales, receipts, customs		Property		Miscellaneous and licenses	
		Amount	Per cent	Amount	Per cent	Amount	Per cent	Amount	Per cent	Amount	Per cent
1957 ¹ :											
Total.....	98,856	37,387	37.82	22,151	22.41	20,588	20.83	13,097	13.25	5,634	5.70
Federal.....	69,815	35,620	51.02	21,167	30.32	11,127	15.94	-----	-----	1,902	2.72
State.....	14,581	1,563	10.76	984	6.77	8,436	58.06	479	3.30	3,069	21.12
Local.....	14,511	205	1.41	-----	-----	1,025	7.06	12,618	86.95	663	4.57
1948:											
Total.....	51,218	19,848	38.75	10,270	20.05	12,092	23.61	6,126	11.96	2,881	5.62
Federal.....	37,876	19,305	50.97	9,768	25.55	7,650	20.20	-----	-----	1,243	3.28
State.....	6,743	499	7.40	585	8.68	4,042	59.94	276	4.09	1,340	19.87
Local.....	6,599	44	.67	7	.11	400	6.06	5,850	88.65	298	4.52
1938:											
Total.....	12,949	1,495	11.55	1,493	11.57	3,815	29.46	4,440	34.29	1,701	13.14
Federal.....	5,344	1,277	23.90	1,333	24.94	2,021	37.82	-----	-----	713	13.34
State.....	3,132	218	6.96	165	5.27	1,674	53.45	244	7.79	831	26.53
Local.....	4,473	-----	-----	-----	-----	120	2.68	4,196	93.81	157	3.51
1927:											
Total.....	9,451	949	10.04	1,351	14.29	1,558	16.49	4,730	50.05	862	9.12
Federal.....	3,364	879	26.13	1,259	37.43	1,088	32.34	-----	-----	137	4.07
State.....	1,608	70	4.35	92	5.72	445	27.67	370	23.01	631	39.24
Local.....	4,479	-----	-----	-----	-----	25	.56	4,360	97.34	94	2.10
1902:											
Total.....	1,373	-----	-----	-----	-----	515	37.51	706	51.42	152	11.07
Federal.....	513	-----	-----	-----	-----	487	94.93	-----	-----	26	5.07
State.....	156	-----	-----	-----	-----	28	17.95	82	52.56	46	29.49
Local.....	704	-----	-----	-----	-----	-----	-----	624	88.64	80	11.36

¹ Preliminary.

Source: Calculated and adapted from "Governmental Finances in the United States, 1902 to 1957," G-OGA-No. 9, March 1959, U.S. Department of Commerce, Bureau of the Census, tables 2, 3, 5, 6.

SOME EMPIRICAL MATERIAL ON THE RESPONSE OF TAXES TO INCOME AND PRICE CHANGES

In this particular study, we have used a nonparametric test which gives the significance and the difference between two categories of a number of paired observations, each of which may have been generated under different conditions. For example, does the percentage change from year to year in the income tax yield, when rates did not change, exceed that in the assessed valuation of property a significant number of times so that we may conclude that the city income tax responds more than the city property tax, given constant rates? We used six cities which have had income taxes for sufficient periods of time, and observations were taken for St. Louis 1953-57, Philadelphia 1940-48 and 1950-55, Louisville, Ky., 1949-55, Columbus, Ohio, 1948-55, Toledo, Ohio, 1946-56, Dayton, Ohio, 1951-56.

We had to be content with comparing not income but income tax receipts and not property tax receipts but assessed valuations. The number of paired observations were 36 and the number of observations in which the change in income tax-yield exceeded that in assessed valuation was 31. We can be more than 98.8 percent certain that the city income tax responds better to income changes than the property tax, given constant rates. This is about what we might expect. These results are, however, subject to some reservation because of the effect of the adoption of an income tax, for example, on the collection of the property tax. A similar study for years of declining income indicates that we can be 99.9 percent sure that the income tax responds more to income declines than the property tax for cities.

Here are some figures that suggest the range of changes:

[Percent]

City	Assessed valuation	Income tax receipts adjusted to constant rate	Property tax rates
St. Louis, 1953-57.....	+5.6	+11.7	+4.4
Louisville, 1949-57.....	+27.8	+81.2	+21.5
Columbus, Ohio, 1949-56.....	+53.6	+40.8	-25.1
Toledo, 1947-56.....	+65.3	+62.6	-58.7
Philadelphia, 1940-48.....	+8.6	+91.4	(1)
Philadelphia, 1950-55.....	+27.0	+33.7	(1)
Dayton, Ohio, 1951-56.....	+48.7	+44.2	+17.7

¹ No change.

These figures also do suggest that though the immediate response of the assessed valuation in property tax rates may not be adequate, after a long while there are some adjustments. This fits in with the figures that I indicated earlier for the general property tax yield for 1938-48 and 1948-57. In Los Angeles, it should be noted, the property valuations rose more than sales tax receipts. The explanation of this is, of course, that this is a very rapidly growing city with large additional construction, this in turn contributing toward a very large increase in the yield of the general property tax.²²

What is the response of the State sales tax versus the individual State income tax?²³

In dealing with this problem we use the States and dates indicated in the footnote. In some instances, we had to eliminate observations because the statistics seemed to be way out of line and might be explained by changes in law. The number of paired observations were 106; the number of observations in which the change in individual income tax receipts exceeded that of sales tax was 73. We can be 99.7 percent certain that the individual income tax responds more to income rises than the general sales tax. This also, of course, might be expected. Somewhat similar results occur when we have years of declining income.

Dealing with various years for Alabama, Arizona, Colorado, Iowa, Louisiana, and Missouri, we also find that we can be 99.4 percent confident that the sales tax responds more to income increases than assessed valuations. These are presumably State taxes.

We also find, as might be expected, that the sales tax since 1948 did not respond more to income increases than the property tax. The reasons may be inferred from what has been said above. In discussing statistics of individual income taxes and corporate income taxes for Arizona, Arkansas, California, Colorado, Georgia, Iowa, Kentucky, North Carolina, North Dakota, Oklahoma, South Carolina, and Utah, in various years since 1943, we find that the individual personal income tax responds more to rising income than does the cor-

²² For many of these statistics, we depend upon the State Tax Reporter and the Tax Systems of the Commerce Clearing House.

²³ We use the following States and periods: Arizona, 1949-54, 1955-58; Arkansas, 1943-49, 1950-56; California, 1950-58; Colorado, 1943-49, 1951-58; Georgia, 1952-54, 1955-58; Iowa, 1950-55, 1956-57; Kansas, 1948-58; North Carolina, 1943-58; North Dakota, 1948-53, 1954-58; Oklahoma, 1949-58; South Carolina, 1952-58; Utah, 1943-58.

porate income tax. The number of paired observations was 94. We can be 87.2 percent confident that the individual income tax is more responsive to income changes than the corporate income tax. But this is not too significant an observation because the corporate income tax yield is likely to respond to other factors than the personal income tax, whereas personal income taxes are more likely to respond to personal income. Of course, the State individual income tax responds better to rising prices and incomes than the property tax. For Alabama, Arizona, Colorado, Iowa, and Louisiana for various years since 1942 we have 34 paired observations, and on the basis of this we can be 98.8 percent confident that the individual income tax responds more to income changes than the property tax base.

INFLATION AND THE YIELD OF THE INCOME TAX

One of the interesting aspects of the inflationary process under our tax situation is that as inflation proceeds there is a tendency for the yield of the income tax to rise because of the inflationary effects. Income-tax payers tend to be shifted to higher brackets of tax liability where rates are also higher.

* * * This inflation shifted taxpayers into higher brackets of income tax liability and increased the effective tax rates to which they were subject, quite apart from any changes in statutory tax rates. Furthermore, real incomes increased during this period. This factor reinforcing the effect of rising prices tended further to shift taxpayers into higher brackets of tax liability.²⁴

Consider the following table:

TABLE 4-5.—Percentages of family personal income taken by the Federal individual income tax at successive levels of income, all consumer units, 1941 and 1950

Family personal income level (before income taxes)	Tax rate (percent)		
	1950	1941	
		On incomes in 1941 dollars	On incomes in 1950 dollars
Under \$1,000.....	(¹)	(¹)	-----
\$1,000 to \$1,999.....	1.9	0.7	0.1
\$2,000 to \$2,999.....	3.5	1.4	.7
\$3,000 to \$3,999.....	4.6	2.2	1.1
\$4,000 to \$4,999.....	5.2	3.2	1.6
\$5,000 and over.....	11.6	14.6	8.8
All incomes combined.....	8.4	4.6	4.6

¹ Less than 0.05.

Source: Review of Economics and Statistics, February 1954, p. 21.

It will be noted that the tax rate on similar incomes increases much more in 1950 vis-a-vis 1941 incomes when stated in terms of 1950 dollars than in 1941 dollars. Should we compare the rates in the last column, that is, on incomes in 1941 expressed in 1950 dollars, and the rates in the first column, that is, the tax rate in current dollars in 1950, we would then compare the effective rates on consumer units

²⁴ Goldsmith, Jaszi, Kaits, Liebenberg, "Size Distribution of Income Since the Thirties," Review of Economics and Statistics, February 1954, p. 22.

in identical brackets of real income in the years 1941 and 1950. It will be noted that, when one compares the last column of this table and the first column, the increase in rates is much greater than if the comparison is made with the 1941 incomes expressed in 1941 dollars. In fact, at \$5,000 and over, there is an actual increase from 8.8 percent on 1941 incomes expressed in 1950 dollars to 11.6 percent for 1950 incomes in 1950 dollars. But on incomes in 1941 dollars there is a reduction for incomes of \$5,000 and over from 14.6 to 11.6 percent. The explanation here is that with the continued need for revenues in the war period there was a tendency to make the tax rates less progressive. Much more revenue had to be obtained from the lower incomes in the groups above \$5,000. Another factor was, of course, the split income provision which tended to cut down the rates. The splitting provision was introduced in 1950.

One can get an even greater indication of what happened as a result of both the rise of prices and the rise of real income by comparing the taxes by quintiles in 1941 and 1950. Here one will find even greater differences in tax rates in 1950 as compared to 1941, because here we take into account not only the rise of prices but also the rise of real incomes which result in shifting to higher income brackets.

TABLE 4-6.—Percentage of family personal income taken by the Federal individual income tax, for quintiles of consumer units ranked by size of family personal income, 1941 and 1950

Quintile	1941		1950	
	Income range	Tax rate (percent)	Income range	Tax rate (percent)
Lowest.....	Under \$740.....		Under \$1,840.....	1.4
2d.....	\$740 to \$1,370.....	0.3	\$1,840 to \$3,040.....	3.5
3d.....	\$1,370 to \$2,040.....	.8	\$3,040 to \$4,200.....	4.7
4th.....	\$2,040 to \$2,940.....	1.4	\$4,200 to \$5,960.....	5.8
Highest.....	\$2,940 and over.....	8.5	\$5,960 and over.....	12.9
All incomes combined.....		4.6		8.4

Source: Review of Economics and Statistics, February 1954, p. 23.

SOME CONCLUSIONS

In general, those levels of government which depend upon the direct income tax or the direct corporation tax have had the greatest success in increasing their revenues. This of course is the position of the Federal Government. State governments, relying heavily on sales and gross receipt taxes and the like, have increased their revenues substantially though their proportion in relation to the Federal Government has greatly declined. Local government, largely dependent upon general property taxes, experienced the largest relative losses of revenue and the most serious financial problems.

Income tax yield has grown especially because of both the rise of real incomes and also because of the inflationary process. Inflation accounted for about one-third of the rise of income since 1938 and more than one-half since 1952.

Through grants and aids of various kinds the Federal Government was able to pass along to other levels of government the flexibility of its tax revenue system. Unfortunately, these allocations have

not always been consistent with the needs of local and State government. For example, the largest increases have been in such matters as welfare programs and highways, though perhaps the greatest needs have been in education. To the last, the Federal Government makes a very small contribution. Moreover, in making these allocations, the result is a distortion in the spending programs of States and local governments because of the temptation to spend more where the Federal Government makes matching funds available.

It might, therefore, be desirable for the Federal Government to raise more money through direct taxes and allocate some part to other levels of government. Indeed, there are some disadvantages to this method of finance, and in particular the one that State and local governments may not be able to anticipate too accurately what their revenues will be as a result of the yield and division of the taxes collected by the Federal taxes. But this particular approach has the great advantage of eliminating the problem of interstate competition which keeps State and local revenues at a relatively low level and also results in starving certain essential services.

In general, it is clear that the trends in tax structure and the increasing participation of the Federal Government facilitate the collection of revenues as inflation and rising incomes continue. The possibilities of exploiting rising income, whether due to inflation or rising productivity and increases in the labor market, have steadily increased since early in the century.

CHAPTER 5. WELFARE PROGRAMS AND INFLATION

INTRODUCTORY

Inflation is especially costly to those who have low incomes and whose incomes do not respond to rising prices. For this reason we should have a careful look at all welfare programs, and particularly the insurance programs, for after all, insurance is an attempt to provide security through prior payments. In 1934-35 total social welfare expenditure in the United States, according to the Social Security Board, was \$7,872 million. By 1945-46 the total had risen to close to \$12 billion and by 1956-57 to almost \$38 billion. These welfare expenditures include social insurance, public aid, health and medical services, other welfare services, education and veteran programs. As a percentage of GNP these expenditures dropped from 11.5 percent in 1934-35 to 5.8 percent in 1945-46 and rose to 8.8 percent by 1956-57. The contribution of social insurance steadily increased.

As might be expected, public aid steadily declined, and largely because of the improvement of the economic situation, and in turn the burden on insurance increased. The proportion of GNP provided for health and medical services remained fairly stable, though there was a tendency to decline during the war and to rise after the war.

As might be expected, during the war the percentage of expenditures on education to GNP tended to decline, the total being 3.2 percent in 1934-35, 1.6 percent in 1944-45, and rose to 3 percent by 1956-57. Veterans' programs, as a percent of GNP, also tended to fall in the

depression and early war period and then to rise dramatically after the war and, after the veterans' educational and other adjustment programs were largely financed, to decline again.

The table below gives some indication of the trends of welfare expenditures.

TABLE 5-1.—*Social welfare expenditures in the United States under civilian public programs, fiscal years 1934-35, 1945-46, 1956-57*

[In billion dollars]

	1934-35	1945-46	1956-57
Total, all governments.....	7.87	11.80	37.90
Insurance.....	.38	2.58	12.46
Federal, all.....	2.97	4.53	17.33
Federal insurance.....	.10	.86	8.95
State and local government, all.....	4.90	7.27	20.57
Insurance.....	.28	1.72	3.51

Source: Adapted from Social Security Bulletin, October 1955 and October 1958.

The following few facts should be noted from this table. Insurance accounted for less than one-half of 1 percent in 1934-35 and rose to 22 percent in 1945-46 and roughly one-third by 1956-57. It is clear that the Government was putting a much greater burden on insurance, and this trend is likely to continue.

Of all welfare expenditures, the Federal Government's share was slightly higher in 1956-57 than in 1934-35. But if allowance is made for insurance payments, then the Federal programs clearly tend to become less important. Whereas the Federal Government's contribution to the noninsurance elements was roughly 40 percent in 1934-35 and in 1945-46, by 1956-57 its share had been cut to 33 percent.

This tendency to rely more on insurance is based on the general theory that the public should pay its own insurance bill. Insofar as insurance takes care of welfare expenditures, so far the Federal Government would not have to depend upon general tax revenues. A major element in the insurance programs is, of course, the various old-age insurance programs. In 1956-57 these accounted for about three-fourths of the total outlays under social insurance.

Perhaps the most important programs from the viewpoint of our problem relate to the economic status of the old. In December 1958, there were 15.4 million people in the country aged 65 and over, or roughly 9 percent of the population, and their numbers, of course, were increasing, both absolutely and relatively. At this time 3.7 million of the 15.4 million were employed, and 10.8 million were receiving benefits under social insurance and related programs. This includes 1.24 million under veterans' compensation. In addition, 2.5 million were receiving public assistance, and 1.6 million received no money income or income solely from other sources. The reliance on the old-age insurance programs was large and increasing. The total number receiving benefits under old-age insurance programs exceeded 15 million. Of course, some received help from more than one source of income.

The median income of families with head aged 65 or over in 1956 was \$2,550; with head employed, \$2,066; with head not employed, \$3,675. The average income was roughly about one-half of the average family

income in the Nation and suggests that on the whole, despite somewhat lower requirements, the old had a considerably lower economic status than the rest of the population.

I shall say something presently about the trends in old-age survivors benefits and assistance, but an examination of the table below will give some indication of the trends in recent years under various benefit programs.

TABLE 5-2.—Average monthly payments to retired worker beneficiaries under 3 social insurance programs to veterans of World War I receiving pensions and to old-age assistance recipients, June 1948 and June 1958

Program	Average monthly payment	
	June 1948	June 1958
Retired workers under old-age, survivors, and disability insurance.....	\$25.13	\$65.66
Railroad retirement.....	70.13	114.92
Federal civil service retirement.....	89.25	144.53
Veterans of World War I receiving pension.....	62.53	76.14
Old-age assistance recipients.....	38.18	61.92

Source: Social Security Bulletin, June 1959, p. 8.

ADJUSTMENTS OF BENEFITS TO RISING PRICES AND INCOMES

The rise in average monthly payments varied greatly from program to program. For old-age, survivors, and disability insurance, the gain was 161 percent; for railroad retirement, 64 percent; for Federal civil service retirement, 62 percent; for veterans of World War I, 22 percent; and for old-age assistance, 62 percent. To some extent the varying rates of gain are explained by the varying levels from which the base period is recorded. Since consumer prices rose by 20 percent during this period, it may be assumed that each group was compensated at least for the rise of prices during this period. Of course, the large rise, for example, in old-age, survivors, and disability insurance could be explained by the serious lag in the forties, about which I shall write later.

During this period, in manufacturing, weekly wages rose by 54 percent. Hence the rise of these benefits more than matched the increase of manufacturing weekly earnings, and on this basis was adequate for all groups except veterans of World War I.

Let us have a look at a more comprehensive table which gives the history from 1940, when the old-age survivors insurance program really began to operate, to 1958. This table gives the monthly benefits from 1940 to 1958, both in current and in 1958 dollars, for the retired worker, for the aged widow, for the widowed mother and two children.

By 1948 it will be noted that, though the average benefit did not change very much in dollars, when correction is made for the rise of prices, the large losses suffered by the beneficiaries are quite clear. These losses are roughly similar for each group as the price level increased. For example, the retired worker had his monthly benefit in 1958 dollars cut from \$46.41 gradually until by December 1948 he was receiving only \$30.43, or a loss of more than one-third in his benefits in dollars of stable purchasing power.

Another approach is to compare these benefits with trends in per capita disposable income in 1958 dollars. We find from 1940 to 1948, a rise in per capita disposable income of 30 percent. This figure, of course, allows for the income-tax take, and, therefore, the relative loss of the beneficiaries was even greater than suggested by these figures; but if we estimate that the value in real terms of these benefits declined by one-third and that the per capita disposable income of the Nation in 1958 dollars rose by 30 percent, then roughly there was a relative loss for the retired worker of 50 percent; that is, 65 is one-half of 130. Should we allow for the tax take, then the loss would be substantially more than 50 percent.

Obviously, the adjustments to rising prices and rising incomes were slow indeed. Possibly in the future the adjustments will be more rapid, for we have had amendments to the Social Security Act in 1950, 1952, 1954, 1956, and 1958. Important gains made in 1950 are evident when one compares the monthly benefits in the second column for 1948 and 1950, a rise roughly of two-thirds. These gains vary to some extent in the different categories, but the most important category is the retired worker because the largest part of the old-age benefits go to him. With the inflation of 1950-51, the beneficiary lost again in real dollars in 1951, but these losses were soon made up and there has been a fairly steady climb up to 1958; in fact, the 1958 amendments make possible a further gain in current dollars of about 7 percent on the average.

TABLE 5-3.—*Old-age, survivors, and disability insurance: Average monthly old-age and widow's benefits in current-payment status, in current and in September 1958 dollars, 1940-58*¹

Month and year	Average monthly benefit for—							
	Retired worker (old age)				Aged widow		Widowed mother and 2 children	
	In current-payment status at end of period		History of benefit that was average in December 1940		In current-payment status at end of period		In current-payment status at end of period	
	Current dollars	1958 dollars	Current dollars	1958 dollars	Current dollars	1958 dollars	Current dollars	1958 dollars
December—								
1940.....	\$22.60	\$46.41	\$22.60	\$46.41	\$20.28	\$41.64	\$47.10	\$96.71
1941.....	22.70	42.51	22.60	42.32	20.22	37.87	46.60	87.27
1942.....	23.02	39.49	22.60	38.76	20.15	34.56	46.50	79.76
1943.....	23.42	38.90	22.60	37.54	20.15	33.47	46.60	77.41
1944.....	23.73	38.59	22.60	36.75	20.17	32.80	47.30	76.91
1945.....	24.19	38.46	22.60	35.93	20.19	32.10	47.70	75.83
1946.....	24.55	33.04	22.60	30.42	20.22	27.21	48.20	64.87
1947.....	24.90	30.74	22.60	27.90	20.40	25.19	48.80	60.25
1948.....	25.35	30.43	22.60	27.13	20.60	24.73	49.80	59.78
1949.....	26.00	31.86	22.60	27.70	20.82	25.51	50.40	61.76
1950.....	43.86	50.76	41.40	47.92	36.54	42.29	93.90	108.68
1951.....	42.14	46.10	41.40	45.30	36.04	39.43	93.80	102.63
1952.....	49.25	53.42	46.60	50.54	40.66	44.10	106.90	115.94
1953.....	51.10	55.01	46.60	50.16	40.87	43.99	111.00	119.48
1954.....	59.14	64.00	51.60	55.84	46.27	50.08	130.50	141.23
1955.....	61.90	66.77	51.60	55.66	48.69	52.52	135.40	146.06
1956.....	63.09	66.13	51.60	54.09	50.14	52.56	141.00	147.80
1957.....	64.58	65.70	51.60	52.49	51.09	51.97	146.30	148.83
June 1958.....	65.71	65.71	51.60	51.60	51.56	51.56	148.70	148.70
September 1958.....	66.17	66.17	51.60	51.60	-----	-----	-----	-----

¹ Calculated by dividing current-dollar amounts by the Consumer Price Index on a September 1958 base.

Source: U.S. Department of Health, Education, and Welfare, Social Security Administration, Research and Statistics Note No. 12, Nov. 26, 1958.

Since minimum benefits have been increased relatively more than the earnings base, beneficiaries whose benefits were based on low covered earnings tended to gain more; for example, between December 1940 and December 1958 the buying power of minimum primary insurance benefit, which rose from \$10 under the 1939 act to \$33 under the 1958 act, rose by 60 percent, while that of the maximum old-age benefit payable went up only 3 percent. In relation to the 1935 act, there was a substantial loss in purchasing power of primary benefits under the 1958 act. The current \$254 maximum²⁵ per family represents an increase of 15 percent in buying power, compared to the \$85 maximum family benefits under the 1939 act. In January 1959 the \$254 maximum at September 1958 prices represents a 42-percent increase over the family maximum under the 1939 law. These trends reflect a tendency to tie benefits increasingly to needs—for example, the greater rise in minimum benefits and family benefits as against the primary maximum.

By June 1959 the beneficiaries under the old-age, survivors, and disability insurance numbered 13,181,000, of which number those age 62 and over were 10,792,000, the young survivors and dependents, 2,114,000, and disabled workers aged 50 to 64, 275,000. Monthly benefits had reached \$805 million, or at the rate of close to \$10 billion a year; the average old-age retired worker benefit had risen to \$72.19; and old-age benefits awarded in the month of June 1959 had risen to \$80.32.²⁶

That from December 1948 to September 1958 the benefits for the retired worker had risen in 1958 dollars by 118 percent suggests that the response to inflation has been more than adequate. It will be recalled that prices only rose about 20 percent during these years, and even per capita disposable income in 1958 dollars only rose by 15 percent.

It is, nevertheless, not wise to assume that the response to inflation is automatic, despite the great gains from 1948. One reason for the large gains since 1948 was the general realization that the benefits were altogether too low in relation to minimum needs. It has been said many times that the benefit payments even today of roughly \$800 to \$900 a year for the retired worker are much below the amount necessary for a minimum standard of living. The increase in benefits since 1948, therefore, may reflect in part the past failures to get benefits up with rising prices, but also a realization that the benefits were altogether too low in relation to the needs of older members of our society.

RAISING MAXIMUM COVERED WAGES

One reason for the failure to achieve higher benefits has been the lag in the adjustment of the amount of wages to be covered for each worker. When the program was introduced in the 1930's, the wages of each worker to be covered were a maximum of \$3,000. It was not until 1958 that an increase to \$4,800 was allowed. Under the 1935 act, the maximum earnings taxable and creditable were \$3,000; in 1950 this sum was raised to \$3,600; in 1954, to \$4,200; and in 1958, to \$4,800.

²⁵ Smaller of \$254 or 80 percent of average wage (but less than the larger of 1½ times the primary insurance amount or \$20 plus primary insurance amount).

²⁶ See release of U.S. Department of Health, Education, and Welfare, Social Security Administration, Aug. 11, 1959.

The failure to get the maximum earnings taxable and creditable up more rapidly was, of course, costly to the insurance program in the sense that less was collected and, therefore, benefits tended to be kept low. By 1950 covered wages had increased by only 20 percent, whereas the price level had risen by 75 percent and weekly manufacturing wages by 195 percent. Even after the amendments of 1954 and 1958 the rise in maximum earnings taxable was only 60 percent as against an increase in prices of 110 percent, and in weekly manufacturing wages of 315 percent.²⁷

The failure to get the maximum earnings taxable up more rapidly resulted in a failure to introduce an element of progressivity into the program. Under the legislation those with relatively low wages get larger benefits in relation to their contribution than those with high wages. Larger coverage would have had the effect of favoring further the transfer of benefits on behalf of the relatively low wage groups.

A \$4,800 maximum now means that roughly about 56 percent of the workers' total earnings that are covered now are subject to tax. Of course, when the maximum was \$3,000 in the 1930's, this meant virtually complete coverage of all wages of those subject to tax. Thus in 1938 the maximum earnings base was \$3,000 and only 6 percent of the covered workers earned in excess of \$3,000. In the 1950's 61 percent of the covered workers had wages in excess of \$3,600 and under the 1954 amendments which raised the wage base to \$4,200, 43 percent had wages in excess of \$4,200.²⁸

MINIMUM AND MAXIMUM BENEFITS AND PRICES

In a table below, I indicate the trends in wages as well as various aspects of benefits under the old age, survivors and disability insurance legislation. This table shows quite clearly the failure of minimum family benefits to rise as much as prices up until 1952 and the failure of the minimum family benefit to rise as much as the increase of wages. For example, by 1950, prices had risen by 72 percent above 1939 and yet the minimum family benefit had risen only by 50 percent in this same period. The average full-time wages of all employees had risen by 150 percent. By 1952, however, the minimum family benefit had risen about as much as prices, and by 1954 substantially more. But even by 1958 the average full-time wages per year had risen substantially more than the percentage rise in minimum family benefit.

For the maximum family benefit it will be noted that one limit is 80 percent of average wage. It follows, therefore, that if the average wage is, say, \$160 a month, then the benefit cannot be more than four-fifths of \$160, or \$128 a month. The result of this particular provision on the whole is that the maximum benefit expressed in dollars, say, \$85 under the 1939 act and \$254 under the 1958 act, is likely to be more restrictive for high than for low incomes. Moreover, this restriction plays a larger part currently than it did many years ago. For ex-

²⁷ Social Security Bulletin, January 1959, pp. 18-19 and the "Economic Report of the President," January 1959, my calculations.

²⁸ Social Security Amendments, Social Security Bulletin, September 1954, and House Ways and Means hearings, "Social Security Amendments, 1954," p. 60.

ample, in 1939 the act provided that the maximum family benefit should be the smaller of \$85 or 80 percent of the average wage or two times the primary insurance amount. Since the average wage was \$105 a month in that year, and, of course, much higher from 1939 until 1950 as wages and prices rose, the \$85 maximum became a very restrictive factor in the estimation of maximum family benefits. For example, in 1949 the average monthly wage was \$238. But the limitation of \$85 meant that, although the average wage was \$238, the limitation of \$85 reduced benefits to roughly about one-third of the average wage of that period. By 1950 the average wage was \$250 and the maximum benefit was \$150. By that time the restrictive effect of the maximum dollar benefit was less than in the late 1940's. By 1958, 80 percent of the average monthly wages was \$290 and the maximum expressed in dollars was \$254, and therefore, the restrictive effects of the provision for a maximum dollar amount on higher incomes was greatly reduced.

TABLE 5-4.—*Annual earnings for a full-time employee, contributions and benefits under old-age, survivors, and disability insurance, 1935-58*

	1935	1939	1950	1952	1954	1956	1958
Average full-time earnings, annual rate.	\$1,137	\$1,264	\$3,008	\$3,414	\$3,670	\$4,042	\$4,344
Minimum family benefit.		\$10	\$15	\$18.80	\$30		\$33
Maximum family benefit.		Smaller of \$85, 80 percent of average wage; or 2 times primary insurance amount.	Smaller of \$100 or 80 percent of average wage (but not less than \$40).	Smaller of \$168.75 or 80 percent of average wage (but not less than \$45).	Smaller of \$200 or 80 percent of average wage (but not less than the larger of \$50 or 1½ times primary insurance amount).		Smaller of \$254 or 80 percent of average wage (but not less than the larger of 1½ times primary insurance amount or \$20 plus primary insurance amount).
Contribution rates: (a) Combined employer-employee.	1937-39, 2 percent; 1940-42, 3 percent; 1943-45, 4 percent; 1946-48, 5 percent; 1949 on, 6 percent.	Same except 2 percent rate extended through 1942.	1950-53, 3 percent; 1954-56, 4 percent; 1957-59, 5 percent; 1960-64, 6 percent; 1965-69, 7 percent; 1970 on, 8 percent.		1954-59, 4 percent; 1960-64, 5 percent; 1965-69, 6 percent; 1970-74, 7½ percent; 1975 on, 8 percent.	1957-59, 4½ percent; 1960-64, 5½ percent; 1965-69, 6½ percent; 1970-74, 7½ percent; 1975 on, 8½ percent. (Increase of ½ percent is for disability benefits.)	1959, 5 percent; 1960-62, 6 percent; 1963-65, 7 percent; 1966-68, 8 percent; 1969 on, 9 percent. (In all years, ½ percent is for disability benefits.)
(b) Self-employed	No provision.		Self-employed pay ¾ of combined employer-employee rate.				

Source: Myers, R. J., "Old-Age, Survivors, and Disability Insurance Provisions: Summary of Legislation, 1935-58," Social Security Bulletin, January 1959, pp. 18-19.

One will also note from this table that there has been a general tendency for payroll taxes to rise. This was not, however, true during the 1930's and 1940's. In fact, the anticipated rise of rates was postponed, and particularly in the 1930's there was a considerable fear that an increase in rates would have a depressing effect upon the economy. It is a little more difficult to explain the failure to increase rates during the war, at least the failure during the war when inflationary forces were at work. By that time a general view had developed that the program should be on a pay-as-you-go basis and, therefore, it would not be wise to accumulate large reserves. Beginning in 1950, however, the tendency to increase rates tended to become stronger and particularly since 1954, as the table suggests. By 1969 it is expected that the total rate for combined employer-employee would be 9 percent.

INCREASED BENEFITS THROUGH INCREASED COVERAGE OF FAMILY MEMBERS

So far we have discussed largely the benefits available to an individual or the family. It should be noted, however, that there has been liberalization of the program through making available additional benefits to other members of the family. The original 1935 act provided 100 percent of primary insurance amount for the old-age retired worker. There were no provisions for disability until the 1956 act and even that applies only to those aged 50 and over. The 1939 act provided for wives' or husbands' benefit of 50 percent of the primary insurance amount; a child of retired worker, 50 percent of the primary insurance amount; a child of deceased worker, 50 percent of primary insurance amount; widows or widowers and widow mothers, 75 percent of primary insurance amount; parents, 50 percent of primary insurance amount. The last was later increased under the 1950 act to 75 percent of primary insurance amount. The minimum family and maximum family benefits in relation to price and income rises are still relevant. The introduction of these additional benefits to other members of the family made it possible to provide a larger amount of benefits within these minimums and maximums.

Under the pressure of increased benefits the costs of the program tend to increase. For example, the level premium equivalent benefits in 1950 were 6.05 percent of taxable payrolls and by the 1958 act they were estimated at 8.76. Contributions in these 2 years were estimated at 5.95 and 8.52. In recent years the Government has urged the Congress and the Congress in turn has been anxious to balance the accounts so that the program would be actuarially sound. This has meant, of course, a marked rise in payroll taxes to match the increase in benefits.

It may, therefore, be said that the old-age, survivors, and disability insurance program is actuarially sound if the estimates show that future income from contributions and from interest earnings on the accumulated trust funds will, in the long run, support the disbursements for benefits and administrative expenses * * *.²⁰

²⁰ Myers, R. J., "Old-Age, Survivors, and Disability Insurance Financing Basis and Policy Under the 1958 Amendments," Social Security Bulletin, October 1958, p. 15.

The costs are primarily those that go to the insured, for (old age) primary benefits accounts for 5.92 of the 8.40 percent of payrolls of total benefits, 0.57 are for wives' benefits, 1.23 for widow's benefits, and the only other major item is child's benefits, 0.43, and disability insurance, 0.49. These are all estimated level premium costs for benefit payments. (The level premium cost is the average long-range cost based on discounting at interest in relation to payroll.)

One of the most difficult problems in projecting the financing of the old-age and survivors insurance arises from the difficulties of estimating what wages will be in the future. Of course, the further ahead we go the more difficult it is also to estimate the number of workers that will be involved because many of them are not as yet born. Here, for example, is an actuarial estimate of the progress of old-age and survivors insurance trust fund under the 1958 act on high employment assumptions based on intermediate cost estimates at 3 percent interest.

[In millions of dollars]

	Contributions	Benefit payments	Administrative expenses	Interest on fund	Balance in fund
1951-----	3,367	1,885	81	417	15,540
1957-----	6,826	7,347	162	557	22,393
1960 (estimated)-----	10,621	10,027	590	-----	21,794
1975 (estimated)-----	20,880	17,766	222	2,185	76,432
2020 (estimated)-----	36,124	40,716	426	8,379	285,282

Source: Myers, R. J., "Old Age, Survivors, and Disability Insurance Financing Basis and Policy Under the 1958 Amendments," Social Security Bulletin, October 1958, p. 17.

It will be noted that as against benefit payments of about \$10 billion today, the total would rise to about \$41 billion in the year 2020, and the balance in the fund would rise from around \$20 billion to \$285 billion. But even these estimates are of the roughest kind; first, because they assume the rate of interest at 3 percent and it is not easy to estimate what the rate of interest will be in the future; second, because no allowance is made for the rise of prices and income. Wages, for example, in 1975 are estimated as they are in 1958. By that I mean the average wage. A more likely estimate would be that wages would be about double even in the absence of all-out war by 1975. Then if benefits lag behind, either the reserve fund would be much larger than is estimated or else contributions would be reduced or benefits increased greatly.

Obviously, the instability in the value of the dollar as well as the rising productivity of the economy makes it much more difficult to estimate what the net actuarial result will be. For this reason it becomes very important to revise the act every few years, or possibly even every year. Another interesting aspect of this problem is that as the value of the fund rises and prices and income also increase, the value of the fund in relation to the size of the economy tends to be reduced. In other words, \$285 billion at prices and incomes of 1958 is one thing, but \$285 billion at the prices and average income levels of the year 2020 is an entirely different matter. There would be a considerable erosion of the value of these accumulations if prices and incomes continue to rise as they have in the past. Even if we assume a doubling of the average wage every 20 years, which is not

a reckless assumption, the increase in the average wage by 2020 would be about eight times. We would be most conservative if we assumed that included in this rise of eight times was a rise of prices of only 1 percent per year. Hence the \$285 billion relative to 1958 wage levels may be assumed to be only worth about \$35 billion in terms of price and income levels of the year 2020. Hence it may be assumed that the contribution of the reserve funds to the financing of the program would be considerably reduced as compared to the estimates made in the actuarial statements. Of course, this may be offset by larger rises in contributions than now contemplated. At any rate, it is clear that the inflationary process is one argument against reserve financing.

OLD-AGE ASSISTANCE AND OTHER ASSISTANCE PROGRAMS

Strangely enough, the response of old-age assistance and other assistance benefits to the price and income level since 1935 has been much greater than under old-age and survivors insurance. Since insurance is a contributory program and the relief is a donated program, this is rather unexpected. One explanation of this fact is that the payments under the old-age insurance program since 1939—and the earlier the years, the more this is true—are very large compared to the earnings to any individual's account. In other words, and particularly since 1939, the Government has tended to subsidize the relatively old who receive benefits after payments for relatively brief periods. Hence there are large gifts, so to speak, in the payments for insurance for the current old who then qualify with relatively small payments of their own or of their employers.

Another reason for the relatively large increase in benefits under old-age assistance as well as under assistance to dependent children is the fact that the Federal Government contributes a substantial part and an increasing part of the total payments. This is an incentive for State and local governments to increase their contributions since the Federal Government pays a substantial part. The trends are given in table 5-5. It will be noted, for example, that from 1940 to 1948 the real benefits, that is in 1958 dollars, rose in excess of 20 percent for old-age assistance and for dependent children per family. In fact, per family, the real rise for dependent children was of the order of 30 percent. In this same period, it will be recalled, old-age and survivors insurance benefit payments for the retired worker had declined by one-third in dollars of 1958 purchasing power. By 1958, however, the old-age retired worker in 1958 in dollars had achieved a benefit of 43 percent above the 1940 level as compared to roughly a rise of 50 percent for old-age assistance and for dependent children per family.

TABLE 5-5.—Public assistance benefits: Average monthly payments in current and 1958 dollars,¹ 1940-58

Month and year	Old-age assistance		Aid to dependent children				Aid to the blind		Aid to the per- manently and totally disabled		General assistance	
	Per recipient		Per family		Per recipient ²		Per recipient		Per recipient		Per case	
	Current dollars	1958 dollars	Current dollars	1958 dollars	Current dollars	1958 dollars	Current dollars	1958 dollars	Current dollars	1958 dollars	Current dollars	1958 dollars
December—												
1940.....	\$20.26	\$41.60	\$32.38	\$66.49	\$9.85	\$20.23	\$25.38	\$52.11			\$24.28	\$49.86
1941.....	21.27	39.83	33.62	62.96	10.21	19.12	25.82	48.35			24.40	45.69
1942.....	23.37	40.09	36.25	62.18	10.93	18.75	26.54	45.52			25.23	43.28
1943.....	26.66	44.29	41.57	69.05	12.36	20.53	27.95	46.43			27.76	46.11
1944.....	28.43	46.23	45.58	74.11	13.41	21.80	29.81	47.66			28.77	46.78
1945.....	30.88	49.09	52.05	82.75	15.15	24.09	33.52	53.29			32.72	52.02
1946.....	35.31	47.52	62.23	88.76	18.11	24.37	36.67	49.35			39.47	53.12
1947.....	37.42	46.20	63.01	77.79	18.30	22.70	39.58	48.86			42.79	52.83
1948.....	42.02	50.44	71.88	86.29	20.92	25.11	43.54	52.27			47.59	56.89
1949.....	44.76	54.85	74.19	90.82	21.70	26.59	46.11	56.51			50.77	61.85
1950.....	43.95	50.87	72.42	83.82	21.13	24.46	46.56	53.89		\$52.56	46.05	53.99
1951.....	46.00	50.33	77.08	84.33	22.36	24.46	49.05	53.67	49.46	54.11	47.09	51.52
1952.....	50.90	55.21	83.83	90.92	23.98	26.01	54.91	59.56	53.50	58.03	49.52	54.39
1953.....	51.50	55.44	84.22	90.06	23.77	25.59	55.67	59.92	53.44	57.52	50.53	54.39
1954.....	51.90	55.44	86.21	93.30	23.96	25.93	56.37	61.01	54.93	59.45	57.29	62.02
1955.....	53.93	58.18	88.61	95.59	24.35	26.27	58.08	62.65	56.18	60.60	58.03	59.36
1956.....	57.99	60.79	95.03	99.61	25.79	27.03	63.12	66.16	58.83	61.67	56.12	58.33
1957.....	60.68	61.73	100.72	102.46	26.90	27.37	66.25	67.40	60.02	61.05	59.74	60.77
September 1958.....	61.79	61.79	103.26	103.26	27.44	27.44	66.97	66.97	60.85	60.85	61.43	61.43

¹ Calculated by dividing current dollar amounts by the consumer price index on a September 1958 base.

² Recipients include children plus 1 adult per family when adults are included in assistance group; before December 1950 partly estimated.

Source: U.S. Department of Health, Education, and Welfare, Social Security Administration, Research and Statistics Note No. 42, Nov. 26, 1958.

The lag in payments for old-age insurance in relation to the movement of prices and wages was all the more unfortunate, in that gradually these payments tend to become much more important than public aid for the old. For example, in 1939 they amounted only to about 1 percent of total public aid expenditures. By 1946 they were more than 40 percent; by 1957 twice as large; and on the basis of President Eisenhower's estimate for fiscal year 1960, roughly three times as large.³⁰

When one examines the rise of the maximum monthly amounts subject to Federal participation, one is surprised that there has been as large an increase in dollar assistance payments as well as in real dollars as actually occurred. Under the 1935 original act Federal participation was at a maximum of \$30 per monthly payment. By 1958 it was \$65, or a rise of a little more than 100 percent. But the increase in monthly benefits for old-age assistance was not of the order of 100 percent but in excess of 200 percent from 1940 to 1958. Actually the increase of the maximum monthly amount subject to Federal participation from 1939 to 1958 was only from \$40 to \$65, or an increase of a little over 60 percent, but the actual increase in the assistance payment per month was in excess of 200 percent. One explanation of this fact is that the Federal Government's participation tended to increase. Federal participation for the old, therefore, increased from a maximum of \$15 in 1935 to a maximum of 50-65 percent (depending upon economic strength of different States) of \$65, or to from \$32.50 to \$35.75. Even this increase in the Federal participation at a maximum level does not wholly explain the large rise in old-age assistance during these years. The increase greatly exceeded the rise of prices and was not far from matching the rise of average wage. This is explained partly by the fact that as the maximum covered by the Federal Government increased there was a tendency for States to increase their assistance in order to achieve the largest contribution of the Federal Government.

³⁰ Social Security Bulletin, October 1955 and October 1958 and release of August 11, 1959; "Current Social Security Program Operations," June 1959; the President's budget, 1960.

In his budget for 1960, the President reverted to his doubts on the trends in the social security program. He insisted that—

The Federal Government's responsibility for income maintenance should be mainly discharged through contributory, self-supporting social security.

He boasted of the fact that in 1946, 60 percent of the workers under OASI were covered; in 1960, 90 percent; and that total annual benefits had risen from \$321 million to \$10,510 million. He also revealed that the average monthly number of beneficiaries had risen from 1.3 to 13.7 million. Actually, this works out as an average payment to a beneficiary of \$767 a year, a figure that is from one-half to one-third the amount required for a minimum standard of living.

The President was also disturbed by the increased proportion of the public assistance grants that were financed by the Federal Government. In 1946, of total outlays of \$446 million, the Federal Government's share was 44 percent; by 1960 the Federal Government's share would be 57 percent of \$2,018 million. Legislation to raise the Federal maximum share extending the Federal participation to new groups, he complained, had been enacted five times in the last six Congresses.³¹

* * * I believe that this trend is inconsistent with the American system of government. If it continues the control of these programs will shift from our State and local governments to the Federal Government. We must keep the financing control of these programs as close as we possibly can to the people who pay the necessary taxes and see them in daily operation.³²

³¹ Budget, 1960, pp. M69-M70.

³² *Ibid.*, p. M70.

TABLE 5-6.—*Legislative chronology of provision for Federal participation in assistance*
 ASSISTANCE SUBJECT TO FEDERAL PARTICIPATION DEFINED TO INCLUDE ONLY MONEY PAYMENTS TO RECIPIENTS

Assistance payments						
Legislation	Maximum monthly amounts subject to Federal participation (maximum applied to each individual payment except where noted)			Federal share of expenditures within specified maximums		
	Aid to dependent children			Aged, blind, and disabled	Aid to dependent children	
	Aged, blind, and disabled	First child	Each additional child			
1935 original act, effective Feb. 1, 1936, to Dec. 31, 1939.	\$30	\$18		\$12	1/4	1/4
1939 amendments, effective Jan. 1, 1940, to Sept. 30, 1946.	40	\$18		12	1/4	1/4
1946 amendments, effective Oct. 1, 1946, to Sept. 30, 1948.	45	\$24		15	3/4 of first \$15 (average) plus 1/2 balance.	3/4 of first \$9 (average per child) plus 1/2 balance.
1948 amendments, effective Oct. 1, 1948, to Sept. 30, 1950.	50	\$27		18	3/4 of first \$20 (average) plus 1/2 balance.	3/4 of first \$12 (average per child) plus 1/2 balance.
ASSISTANCE SUBJECT TO FEDERAL PARTICIPATION DEFINED TO INCLUDE MONEY PAYMENTS TO RECIPIENTS AND PAYMENTS TO VENDORS FOR MEDICAL AND REMEDIAL CARE						
1950 amendments, effective Oct. 1, 1950, to Sept. 30, 1952. 1952 amendments (temporary), effective Oct. 1, 1952, to Sept. 30, 1954. 1954 amendments (extended 1952 amendments), effective Oct. 1, 1954, to Sept. 30, 1956. 1956 amendments, effective Oct. 1, 1956, to June 30, 1957.	\$50	\$27 plus \$27 for 1 needy relative with whom child lives.	\$18	3/4 of first \$20 (average) plus 1/2 balance.	3/4 of first \$12 (average per person) plus 1/2 balance.	
	55	\$30 plus \$30 for 1 needy relative with whom child lives.	21	3/4 of first \$25 (average) plus 1/2 balance.	3/4 of first \$15 (average per person) plus 1/2 balance.	
	60	\$32 plus \$32 for 1 needy relative with whom child lives.	23	3/4 of first \$30 (average) plus 1/2 balance.	1 1/4 of first \$17 (average per person) plus 1/2 balance.	

1957 AMENDMENTS—STATES HAVE CHOICE OF 1 OF 2 METHODS FOR COMPUTING FEDERAL SHARE

METHOD 1. ASSISTANCE SUBJECT TO FEDERAL PARTICIPATION DEFINED TO INCLUDE MONEY PAYMENTS TO RECIPIENTS AND PAYMENTS TO VENDORS FOR MEDICAL AND REMEDIAL CARE

Effective, July 1, 1957–Sept. 30, 1958.....	\$60	\$32 plus \$32 for 1 needy relative with whom child lives.	\$23	$\frac{4}{5}$ of 1st \$30 (average) plus $\frac{1}{2}$ balance.	$\frac{14}{17}$ of 1st \$17 (average per person) plus $\frac{1}{2}$ balance.
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or

METHOD 2. SEPARATE FORMULAS FOR FEDERAL PARTICIPATION IN MONEY PAYMENTS TO RECIPIENTS AND PAYMENTS TO VENDORS FOR MEDICAL AND REMEDIAL CARE

A. SEPARATE PROVISION FOR FEDERAL PARTICIPATION IN MONEY PAYMENTS TO RECIPIENTS

Effective, July 1, 1957–Sept. 30, 1958.....	\$60	\$32 plus \$32 for 1 needy relative with whom child lives.	\$23	$\frac{4}{5}$ of 1st \$30 (average) plus $\frac{1}{2}$ balance.	$\frac{14}{17}$ of 1st \$17 (average per person) plus $\frac{1}{2}$ balance.
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plus

B. SEPARATE PROVISION FOR FEDERAL PARTICIPATION IN VENDOR PAYMENT FOR MEDICAL AND REMEDIAL CARE

Effective, July 1, 1957–Sept. 30, 1958.....	1 \$6	1 \$6 per adult; \$3 per child.....	$\frac{1}{2}$	$\frac{1}{2}$.
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¹ Maximum applied to average of all payments.

ASSISTANCE SUBJECT TO FEDERAL PARTICIPATION DEFINED TO INCLUDE MONEY PAYMENTS TO RECIPIENTS AND PAYMENTS TO VENDORS
FOR MEDICAL AND REMEDIAL CARE

Legislation	Assistance payments				
	Maximum monthly amounts subject to Federal participation		Federal share of expenditures within specified maximum amounts		For balance of payments, all programs
	Aged, blind, and disabled	Aid to dependent children	Aged, blind, and disabled	Aid to dependent children	
1958 amendments, effective Oct. 1, 1968.	\$65 multiplied by the number of recipients.	\$30 multiplied by the number of recipients.	$\frac{1}{2}$ of first \$30 (average).	$\frac{1}{4}$ of first \$17 (average).	Federal percent varies according to average per capita income in State for most recent 3 years except that Federal share in any State shall not be less than 50 percent nor more than 65 percent and Federal share for Alaska and Hawaii is specified as 50 percent. Federal share is determined as follows: Federal percent equals 100 percent minus State percent. State percent bears same relationship to 50 percent as square of income and national per capita income.

Source: U. S. Department of Health, Education and Welfare, Social Security Administration, Bureau of Public Assistance, October 1958.

SOME COMMENTS ON OLD-AGE INSURANCE AND ASSISTANCE

Despite the fact that the largest part of the increase of GNP from 1940 to 1950 is explained not by inflation but by the rise of productivity and increased numbers on the labor market, the record of benefits under old-age insurance is not a good one. Until 1950 the benefits lagged far behind the rise of prices, even more so behind that of income. But the old-age assistance program responded much more effectively to both the rise of prices and the rise of income. This fact is explained in part by the peculiar financing mechanism. With the Federal Government agreeing to pay some part of the total and increasing its contribution under each change in legislation, the States and local governments tended to increase their benefit levels in order to obtain the largest possible contributions from the Federal contribution.

Since the Federal income rises much more with an increase in prices and income per capita than State and local revenues, there is a strong case for the Federal Government continuing to contribute a large part of the total assistance benefits. It was the increased willingness of Congress to appropriate Federal funds that made possible the rather good record for old-age assistance from 1940 on. The amounts available even today are not adequate but they are much more nearly adequate as compared to earlier years than could have been achieved without the help of the Federal Government. In view of the serious problems of State and local finance with their revenues rising by 300 percent and debt by 300 percent since the end of the war, it is very important that the Federal Government continue to contribute generously to the old-age assistance program if benefits are to respond to rising average wages and to rising prices.

If the resources are not available—and this is the more likely to be true the larger the burden put upon State and local government—then all that we can hope for is that assistance would continue to match the rise in prices, and the relative economic status of those receiving assistance would tend to decline relative to the improving standards of the rest of the Nation. On the whole, this is not a desirable outcome.

We can also say much against the financing of old-age insurance and the actuarial arrangements made for this program. In the 1930's quite rightly the Government tended to postpone the increase in payroll taxes on the theory that the accumulation of reserves was a depressing factor upon an economy which was already being deflated. But this does not excuse the failure to increase benefits though in 1939 a change in policy was noted. In the 1939 amendments the policy was acknowledged that it was proper to pay larger benefits to the present old despite their small contribution, on the theory that they had not had sufficient time to accumulate credits. Even the 1939 amendments were most inadequate and, therefore, in real dollars the benefits tended to decline, reaching a minimum of one-third below the 1940 level by 1948. The great fear of putting a fiscal burden on the economy in later years accounted in part for this determination to keep benefits rather low in the 1940's. This was a great mistake for another reason, for this was an inflationary period and there was no excuse for postponing the increase in payroll taxes in the 1940's and keeping these

taxes at a rate of about 2 percent. The Government should have increased the payroll taxes during these years as the excess of purchasing power contributed to the inflation. Also the Government was excessively worried about the burdens on the economy later resulting from increased benefits in the 1930's and 1940's. Actually the major problem is one of providing resources for the old, and these resources will be paid irrespective of the financial arrangements that are made. Indeed, some financial arrangements facilitate this transfer to the old who are not working, and others make it much more difficult.

In the 1950's both taxes and benefits rose greatly and larger reserves began to accumulate. Even in this period the benefits might have expanded somewhat more than they did, and there should not have been so much emphasis on the need of large reserves. As we have noted, an accumulation of a large reserve with the likelihood of continued rises of prices and average wages means that the reserves would yield much less in resources for the old than might have been expected when accumulated. It would be much better to spend a large part of these reserves on benefits or use them as a means of reducing old-age payroll taxes. Insofar as under the pressure of rising prices and incomes the current old have received much more than they have paid in, we might argue that there is a case here for the Federal Government financing part of this program through general revenues. In this manner also it would be easier to offset the rise of prices and the rise of average incomes.

From the experience of the last 25 years or so, we can certainly contend that a frequent adjustment of old-age insurance is necessary in view of the annual changes in prices and average incomes. These arrangements should not only provide for adjustments in benefits and taxes but also in adjustments of general revenue contributions.

CHAPTER 6. UNEMPLOYMENT COMPENSATION

INTRODUCTORY

The trouble with our unemployment compensation program is not merely that we have had a substantial amount of inflation. In order to understand the shortcomings of the unemployment compensation program we have to discuss the program briefly before we discuss the relevance of inflation. Had the program developed as originally anticipated; namely, that contribution rates would be close to 3 percent of payrolls, and had merit rating not made such inroads by greatly reducing the payroll tax, inflation would not have had such serious effects.

One respect in which unemployment compensation proved inadequate was the setting of a maximum benefit amount per week. On December 31, 1937, that maximum benefit in most States was \$15 per week, with 95 percent of the covered workers subject to this maximum. By 1952 more than 50 percent had maximum weekly benefit amounts of \$27 or less. The average maximum benefit had risen somewhat less than the price level and much less than the increase in average weekly wages. In 1939 the maximum benefit was in excess of 60 percent of the average weekly covered wage in 31 States and less than 50 percent in 2 States; but by 1952 the total was in excess of 60 percent in 2 States and less than 50 percent in 40 States. The average weekly un-

employment payment for full-time work was 41 percent of the average weekly wage of covered workers in 1939 and only 34 percent by 1952.³³

The Bureau of Employment Security of the Department of Labor which administers the unemployment insurance program is not enthusiastic about tying benefits to the cost of living, though it does stress the importance of a proper relationship between benefits and wages. It is, however, vague on the latter point.

The preceding discussion has emphasized—and properly so in a wage-loss system—the importance of maintaining proper relationships between benefits and wages. It is important that changes in wages be recorded so that necessary changes can be made in the provisions for weekly benefits. It has been urged, also, that changes in benefits should accord not only with changes in wages but also with changes in the cost of living. Change in the cost of living here means change in the Consumer Price Index of the Bureau of Labor Statistics. Such comparisons do not seem completely valid in a short-term insurance system. If, by judicious amendment of maximum benefit provisions, a proper relationship between benefits and wages can be maintained, it appears too much to ask that benefits be changed in accordance with changes in prices as well. A worker is eligible for benefits generally for a maximum of 26 weeks in 52. Benefits are not payable for consecutive years unless the claimant has had sufficient employment following his former base period to requalify. This employment establishes new benefit rights in accordance with more recent wages—inflated or deflated as the case may be. It may be of some interest to see what the benefit will buy in 1939 or 1945 dollars, but this need not be a controlling consideration in a short-term, wage-loss system. For some beneficiaries, in fact, wages used as a base for benefits may already have been changed, up or down, in response to changes in the capitalized Consumer Price Index.

To rule out the need for variation of benefits with average changes in consumers' prices does not rule out frequent examination of the proportions of workers' incomes that go for "the nondeferable bundle." There is an important difference between increasing benefits because living costs on the average went up, and increasing benefits because beneficiaries now spend relatively more of their income for food and rent and other basic essentials. Fortunately, the proportion of wages that goes for nondeferable expenses does not seem to fluctuate as much as the Consumer Price Index itself. On the other hand, the figure is not computed very often, or on a State basis. Much research needs to be done in this area.³⁴

If the Government succeeds in tying benefits to wages, then, of course, one need not worry too much about the adjustment of prices because wage rates generally rise more than prices, given the gains in productivity. It is of some significance that the maximum benefit rate would be less restrictive today if inflation had not proceeded, for the adjustment in maximum benefit rate tended to lag. The percentage of benefits to covered wages was 40.8 percent in 1939, 33.7 in 1952, and, despite the great exhortation since 1952, only 34.8 in 1957.

The table below gives the benefit payments under unemployment insurance, benefit payments adjusted for price change, average weekly wages of covered workers and the percentage of benefits for full-time unemployment to average weekly wages in covered employments.

³³ U.S. Department of Labor, Bureau of Employment Security, "Adequacy of Benefits Under Unemployment Insurance, 1937-52," pp. 16 and 17.

³⁴ *Ibid.*, pp. 13, 14.

TABLE 6-1.—*Unemployment benefits for full-time work in relation to price and wage movements, 1939, 1946, 1952, and 1957*

	1939	1946	1952	1957
Average weekly payments for total unemployment.....	\$10. 66	\$18. 50	\$22. 79	\$28. 21
Adjusted for price change.....	\$10. 72	\$13. 26	\$11. 82	\$13. 90
Average weekly wages of covered workers.....	\$26. 15		\$69. 09	\$84. 18
Percentage of benefits to average weekly wage uncovered.....	40. 8		33. 7	34. 8

Source: U.S. Department of Labor, Bureau of Employment Security, "Adequacy of Benefits Under unemployment Insurance," a staff report prepared for the steering committee of the Federal Advisory Council, October 1958.

Inadequacy of unemployment compensation is partly the result of the failure to impose adequate tax rates, in turn related to the merit rating system. But also as inflation proceeds and incomes rise, both because of inflation and other reasons, there tends to be a lag in the adjustment of maximum benefits and the like. In the early years of the program only about 25 percent of claimants were restricted by the maximum benefit provision. In more recent years the proportion has been about 50 percent, suggesting the needs of lifting of the maximum benefit as the proportion rises. In the absence of inflation, these adjustments probably would have been more substantial and, therefore, benefits would have been greater. Merit rating has had its disadvantages, as we shall see, in that it tends to encourage excessive interstate competition and to keep payroll taxes and benefits down.

Obviously, as prices rise, needs of workers increase to meet a minimum standard of living.

One should compare the modest budget that has been worked out by the Department of Labor for a city worker's family of four persons with the average benefits paid under unemployment insurance. For example, in October 1951, the total cost of the budget varied in 34 large cities from \$3,812 for New Orleans to \$4,454 in Washington, or roughly from \$320 to \$370 per month. At this time, unemployment benefits, which were likely to be exhausted after 20 weeks, averaged less than \$100 a month, or substantially less than one-third of the cost of this modest budget.

A study has been made by the Government of the effects of unemployment on cash income and spending patterns.

TABLE 6-2.—Percentage changes in average monthly cash income¹ and outlay of household before and during unemployment of claimants² in 1- and 4-person households

Size and type of household and item	Pittsburgh, Pa. (fall 1954)		Anderson-Green- ville-Spartanburg, S.C. (spring 1957)		Portland, Oreg. (spring 1958) ³	
	Cash income	Cash outlay	Cash income	Cash outlay	Cash income	Cash outlay
1-person household (single claimant):						
Before unemployment.....	\$263	\$221	\$178	\$153	\$262	\$227
During unemployment.....	\$103	\$144	\$92	\$129	\$139	\$194
Percentage change.....	-61	-35	-48	-16	-47	-15
4-person household with claimant as head of household:						
Before unemployment.....	\$405	\$374	\$302	\$276	\$459	\$458
During unemployment.....	\$192	\$271	\$173	\$248	\$229	\$358
Percentage change.....	-53	-28	-43	-10	-50	-22
4-person household with claimant as non- head of household:						
Before unemployment.....	(4)	(4)	\$441	\$411	\$599	\$576
During unemployment.....	(4)	(4)	\$344	\$396	\$440	\$526
Percentage change.....	(4)	(4)	-22	-4	-27	-9

¹ Income is net of Federal taxes withheld from wages and salaries.² Claimants with 6 or more successive weeks of unemployment (8 or more weeks in Pittsburgh).³ Preliminary data.⁴ Comparable data not available.

NOTE.—Tables 6-2 through 6-4 present data from surveys conducted among samples of claimants chosen from among claims filed during a selected week. Except as noted, these samples were confined to claimants who, at the time of sample selection, were in benefit status, members of 1- and 4-person households, and unemployed for 6 or more successive weeks. Households were excluded in which significant income was provided by members other than the claimant or the claimant's spouse.

Source: These tables adapted from U.S. Department of Labor, Bureau of Employment Security, "Adequacy of Benefits under Unemployment Insurance," a staff report prepared for the steering committee of the Federal Advisory Council, October 1958.

TABLE 6-3.—Average monthly wages and unemployment benefits of claimants compared with total average monthly cash income¹ of households before and during unemployment of claimants² in 1- and 4-person households³

Area and date of survey	1-person households (single claimants)			4-person households with claimant as—					
	Before unemployment		During unemployment	Head of household			Nonhead		
	Before unemployment			Before unemployment	During unemployment	Before unemployment	During unemployment		
	Total cash income 1	Wages of claimant 1	Total cash income 1	Total cash income 1	Wages of claimant 1	Total cash income 1	Unemployment benefits 4	Total cash income 1	Unemployment benefits 4
Pittsburgh, Pa. (fall 1954)	\$293	\$218	\$103	\$303	\$373	\$196	\$119	(5)	(5)
Anderson-Greenville-Spartanburg, S.C. (spring 1957)	178	163	92	298	220	169	61	\$411	\$345
Portland, Oreg. (spring 1958) 6	292	238	139	459	357	229	118	599	440

¹ Wages and income are net of Federal taxes withheld.

² Claimants with 6 or more successive weeks of unemployment (8 or more weeks in Pittsburgh; 5 or more weeks in Albany area).

³ Includes 3-person households in Albany area study.

⁴ Average amount of benefits received during period of unemployment studied, including weeks not compensated due to delayed filing, waiting weeks, time lapse in issuance of benefit checks, disqualifications, etc.

⁵ Comparable data not available.

⁶ Preliminary data.

In these tables we present the effects of unemployment on income and the like for four cities or regions. For example, let us consider Pittsburgh. In a four-person household, the claimant as head of the household had a cash income before unemployment of \$405, during unemployment \$192, or a loss of 53 percent. Cash outlay dropped from \$374 to \$271, or 28 percent. In the next table, it will be noted that for a four-person household in Pittsburgh unemployment benefits were \$119 and total cash income while unemployed was \$196. The benefits were substantially less than one-half of the cash outlays during the period of unemployment.

On the principle that food, shelter, utilities, and medical care are absolutely essential expenditures, it will be noted that the average weekly benefit was \$29, and expenditures on food, shelter, utilities, and medical care, \$37, and expenditures on all items, \$61. In other words, the average weekly benefit for a four-person household was not adequate to compensate for the minimum expenditures for food, shelter, utilities, and medical care.

In a table not reproduced it is clear that expenditures per unit household declined from \$339 before unemployment to \$265 during unemployment for the Pittsburgh sample. The largest decline was food from \$130 to \$101; housing utilities from \$60 to \$49; house furnishings, \$9 to \$6; clothing, \$26 to \$17; medical care, \$13 to \$9; transportation, \$31 to \$26; reading and recreation, \$14 to \$9; tobacco and alcoholic beverages, \$15 to \$12; life insurance, \$17 to \$11.³⁵

From an earlier table it will be noted that in recent years general unemployment compensation rose substantially above the real values of these benefits in 1939, so that by 1957 they were roughly 30 percent

³⁵ U.S. Department of Labor, Bureau of Employment Security, "Adequacy of Benefits Under Unemployment Insurance," a staff report prepared for the steering committee of the Federal Advisory Council, October 1958.

Average monthly cash outlay of household by type of expense before and during unemployment of claimants¹ in 4-person households² with claimant as head of household.

Type of expense	Pittsburgh, Pa. (fall 1954)		Anderson-Green- ville-Spartan- burg, S.C. (spring 1957)		Portland, Oreg. (spring 1958) ²	
	Before unem- ploy- ment	During unem- ploy- ment	Before unem- ploy- ment	During unem- ploy- ment	Before unem- ploy- ment	During unem- ploy- ment
Total cash outlay-----	\$339	\$265	\$276	\$248	\$458	\$358
Food-----	130	101	81	75	124	104
Housing and utilities-----	60	49	48	53	98	80
Household operations-----	10	10	18	16	22	17
House furnishings-----	9	6	12	11	15	13
Clothing-----	26	17	18	11	28	16
Medical care-----	13	9	12	11	26	14
Transportation-----	31	26	43	32	72	55
Personal care-----	5	5	5	5	7	7
Tobacco and alcoholic beverages-----	15	12	7	7	14	12
Reading and recreation-----	14	9	9	8	21	21
Gifts and contributions-----	7	6	7	6	(³)	(³)
Life insurance-----	17	11	14	9	7	6
Other-----	2	2	4	3	23	12

¹ Claimants with 6 or more successive weeks of unemployment (8 or more weeks in Pittsburgh).

³ Preliminary data.

⁴ Included in "Other."

in real dollars above the 1939 level. But there was very little improvement from 1946 to 1957 in real dollars. It can be argued, indeed, that the rise of unemployment benefits was substantially less than the increase of per capita real income, which was of the order of about 50 percent during these years. But the fact that benefits were tied to some extent to wages raised benefits much more favorably to the beneficiaries than, for example, under the old age and survivors' insurance program, where such criteria were not used in any significant sense. Since the benefits did not rise as much as real weekly wages, it might be expected that benefits in relation to average weekly wages in covered industries would decline.

In theory, unemployment compensation (UC) was supposed to provide assistance for the unemployed worker over the period during which he would be seeking a new job. The period covered should, therefore, be adequate and the proportion of benefits to wages be high enough to cover minimum needs and yet not be so high as to discourage workers from seeking new employment. It was not expected that the UC fund would be solvent in the event of another collapse such as occurred in the early 1930's.

In many respects the program has failed to achieve these objectives. Thus in two recent periods of mild unemployment, the benefits have covered but one-quarter of the cost of unemployment, the explanation being the large numbers still uncovered, the small benefit payments relative to wages, the exhaustion of benefits by many workers.

For the years 1938-53, there were 57 million man-years of unemployment; but only \$12 billion of unemployment benefits were disbursed, or about \$210 per man-year of unemployment. In 1949, a year of unemployment about as severe as 1954 (3.4 million unemployed), wage losses amounted from \$7 to \$8 billion, and unemployment benefits, \$1.9 billion, or 25 percent of the wage losses.³⁰

Prof. Richard Lester writes as follows:

A consequence of the low benefit levels and relatively short duration (plus restricted coverage and uncompensated waiting periods) has been that unemployment insurance has offset (or compensated for) less than 30 percent of the computed earnings lost from unemployment during postwar recessions.

For the first 4 months of 1958, he estimates 29 percent as the compensated share of computed earnings lost.³⁷

It is quite clear why the compensation under unemployment compensation is inadequate to deal with the large losses of wages due to unemployment. One point is of course the inadequate duration and another is the fact that the benefits cover about only one-third of the average weekly wage. Then after a while the benefit rights are exhausted. Again, covered employment is only part of total employment. For example, in 1957 covered employment was less than 40 million and employment around 65 million. In October 1957, insured unemployment was 1.3 million and the total unemployment 2.5 million; or in other words, one-half of the unemployed were receiving benefits. In April 1958, in the depths of the recession, the

³⁰ Figures from "National Income," 1954 edition: Social Security Bulletin, September 1954; and "Economic Report of the President," January 1954.

³⁷ R. A. Lester, "Issues in Unemployment Insurance," paper for the Social Security Conference, East Lansing, Nov. 18, 1958, p. 7 (mimeographed).

unemployed numbered 5.1 million and the insured unemployed 3.4 million.³⁸ By April 1958, 229,000 had exhausted their benefit rights, and from January to April 1958, 713,000 had exhausted their benefit rights.³⁹

One reason for the disappointing results in unemployment compensation is the gradual decline in the tax rates. In 1938, 1939, and 1940, the average employer contribution rate was 2.75, 2.72, and 2.69 percent of the payroll. By 1954 this had been reduced to 1.12 percent and in 1957 was 1.31.⁴⁰

Undoubtedly, the major deficiency of the program results from experience or merit rating, under which the employer is allowed to reduce tax rates on payrolls when benefit payments charged to him are relatively low compared to the reserve accumulated to his account. For example, the average employer contribution rate in November 1958 was 1.31 percent. There were 13 States with rates below 1 percent with Virginia with 0.53, the lowest, and 2 States with rates above 2 percent: Michigan, 2.04, and Washington, 2.11.⁴¹

As of January 1, 1958, there were 15 States which had a statutory minimum of 0 percent and 11 States with actual rates of a minimum of 0 percent.⁴²

Experience rating has fundamentally changed the system of unemployment insurance. Not only has it reduced rates by about one-half on the average as compared with the expected rate, but it has contributed greatly to the kind of interstate competition that, through a Federal scheme, the Federal Government was presumably to eliminate. The enactment of the uniform tax and offset provisions of the Federal law was designed, according to the Senate Committee on Finance reporting the 1935 Social Security Act, so that—

all employers * * * will be on an equal competitive position * * *. No State can gain any advantage through failing to establish an unemployment compensation program. This provision will equalize competitive conditions and thus enable States to enact unemployment compensation laws without handicapping their industries.⁴³

Because the burden of unemployment is put increasingly on the industries which suffer greatly from unemployment, as is required under experience rating, the effect is that the program has lost much of its insurance flavor; and in a manner, the unemployment compensation has further weakened the vulnerable industries. More of the burden should have been put upon the entire economy. Thus, in New York State in 1954, the average tax rate per dollar of taxable payroll was 1.59; but the extremes were 1.10 percent for the stable finance, etc., industries and 2.38 for the unstable apparel industry.⁴⁴

³⁸ Hearings, Senate committee on "Financing Unemployment Compensation," May 1958, pp. 28-29; and 1957 Supplement to "Handbook of Unemployment Insurance Financial Data," p. 2.

³⁹ Senate hearings on "Unemployment Compensation," pp. 34-35.

⁴⁰ "Handbook of Insurance Financial Data," p. 2.

⁴¹ 1957 Supplement, "Handbook on Unemployment Insurance Financial Data," p. 5.

⁴² Senate hearings on "Unemployment Compensation," 1958, pp. 50-51.

⁴³ Hearings, Senate Committee on Finance, on "Unemployment Compensation," 1952, p. 18.

⁴⁴ Department of Labor, State of New York. Annual Report of the State Advisory Council on Employment and Unemployment Insurance, 1954, p. 35.

In States where unemployment is high, rates tend to be high, but especially for the unstable industries. The unstable industries pay heavily and withdraw disproportionately.

TABLE 6-5.—*Amount of unemployment insurance payments per dollar of contribution*¹

	1947	1948	1949	1950	1951
Textiles.....	\$1.92	\$0.77	\$5.34	\$1.86	\$1.69
Manufacturing.....	.67	.73	2.84	1.32	.60
All industries.....	.49	.60	2.25	1.32	.56

¹ Payments from letter of Mary E. Wilcox, chief supervisor of research and statistics, Division of Employment Security, Massachusetts, and employment figures from "Employment and Wages," of Bureau of Employment Security and Regional Statistics.

Experience rating tends to aggravate cyclical fluctuations. One of the great advantages of unemployment compensation was held to be that it would reduce economic fluctuations: funds would be collected (withdrawn) in periods of high employment and spent (and hence stimulate the economy) in periods of depression. But under experience rating taxes are cut in periods of high employment (favorable employment experience) and raised in periods of depression. Hence, the contracyclical effects are greatly reduced. Thus, receipts from unemployment trust funds declined only from \$1.3 billion in 1948 to \$1.1 billion in 1949, and benefits rose by \$1 billion.⁴⁵ A greater contribution might have been made had experience rating not been effective.

The result of experience rating is that in periods when employment is high, rates tend to go down because of the effect of experience rating. Hence, contributions do not fall as much as they otherwise would in periods of declining wage payments. Thus, in fiscal year 1956-57, total contributions were \$1,537 million; in fiscal year 1958, \$1,500 million. But the reduction is very small in view of the fact that the fiscal year 1958 was a depression year. Again, the average contribution rate in 1957, half of which was a depression year, was 1.31 as against a rate of 1.32 for the calendar year 1956.

CONCLUSION

It is quite clear that benefits under unemployment compensation are inadequate when matched against wages, but the rise of benefits has exceeded that of prices and to this extent the program may be held to have been successful. This success is to be associated in part with the fact that the system developed under a theory that benefits should be adjusted to wages and to this extent the system has been more successful than the old-age and survivors insurance program.

The failures of the system and the inadequacy of benefits both in amount and duration are not to be explained primarily by inflationary process. But there can be little doubt that the continued rise of prices and hence the cost of the consumer's budget contributed to the inadequacy. In order to achieve adequate benefits, it was necessary to raise the maximum benefit allowable under the various State pro-

⁴⁵ Figures from Social Security Bulletin, September 1954 (Annual Statistical Supplement).

grams. But here there has been a lag, and the lag is partly explained by the inflation. Without inflation, clearly the adjustments of maximum benefits in relation to wage rates would have been greater.

But the greatest damage to the program has been done by the merit rating under which employers are allowed special rates when their unemployment record seems to be good. This follows even though the good record may be due to, and generally is due to, outside influence over which they have little control. In another sense merit rating has been harmful. In periods of expansion and inflation, there is a tendency for the contributions to decline, for employment records are then good; and in such periods, the employer is forgiven taxes instead of being forced to pay larger taxes which would be required under a proper anticyclical policy. One correction for this particular approach is to require minimum tax rates at all times. This approach is, of course, from the viewpoint of offsetting inflationary and deflationary forces, not ideal. But at least in this manner the program would acquire adequate resources and higher benefits, even though its ultimate contribution to treating the business cycle would not be as great as it otherwise would be.

It would be helpful, also, if the administrative agencies of the Government had some discretion in adjusting rates to changing business conditions, again assuming minimum rates as well. Therefore, in periods of great expansion, rates might be raised temporarily and in periods of deflation they might get down to the minimum fixed by the Congress.

I can only conclude that, had prices been stable from 1939 on, probably benefits would be a larger proportion of covered wages. But the great damage, again I repeat, was not done by the inflationary process but rather by the peculiar influence of the merit rating provisions in the act.

CHAPTER 7. INCOME MAINTENANCE PAYMENTS WITH PARTICULAR REFERENCE TO VETERANS' PROGRAMS

According to the Social Security Board, in 1956-57 income maintenance payments under public and private programs in 1956-57 amounted to \$20.5 billion. We have already discussed several of the programs involved and in particular the old-age and survivors and disability insurance and unemployment insurance, as well as public assistance.

The major items in these \$20.5 billion were: Social insurance, \$11.5 billion; veterans' pensions and compensations, \$2.9 billion; public assistance, \$3 billion; and private programs, \$2.8 billion, of which pension plans are \$1.1 billion and other employee benefit plans \$1.5 billion. I should also mention workmen's compensation, \$634 million, and temporary disability insurance, \$274 million.

WORKMEN'S COMPENSATION

In some of these programs the response of compensation to the rising price and wage level has not been satisfactory and some of the same problems are raised as were suggested in discussing old-age and unemployment insurance. For example, under workmen's compensation the tendency to impose a maximum compensation results in a bene-

fit payment that is inadequate in relation to rising prices and rising wages. The Somerses, in an excellent summary of the situation,⁴⁶ have made clear the inadequacies of these benefits:

Despite the apparent intention of compensation laws to relate benefit payments to a given ratio of wage levels, usually around two-thirds, the result is obviously something very different. Periodic liberalization of the various maximums and qualifications have utterly failed to keep pace with rising wage levels and prices. As a result, the proportion of wage (loss) compensation declined substantially.⁴⁷

For example, a study in 1953 for Illinois shows that the ratio of weekly maximum compensation for an injured worker with one child to average weekly earnings declined in that State from 98 percent in 1913-14 to 34 percent in 1952.⁴⁸ The Social Security Administration concluded in 1954—

that workmen's compensation is probably leaving unmet on the average about two-thirds of the wage loss in temporary disability cases and an even greater proportion of the aggregate loss from all disabilities of covered workers, including those fatally or permanently injured * * *.⁴⁹

Apparently the average payment in 48 States for a widow and 4 children was \$20 a week in 1951. That was the average payment in 48 States.⁵⁰ The Somerses conclude that in workmen's compensation we have approached pretty close to a flat-rate payment and the adjustments to rising prices and wages are slow indeed.

I do not mean to give the impression that the inadequacies of workmen's compensation are to be explained merely by the rise of prices and incomes. But the combination of interstate competition which results in fixed maximums and the rising price and income levels with slow upward adjustments in benefits, and also the large diversions to insurance companies and other intermediaries—these together help explain the inadequacies that tend to become greater despite the rising incomes.

An injured worker receives much less than the loss of wages incurred. The compensation for the temporary disability is reduced by the requirement of a waiting period; for permanent disability it is reduced by ceilings on the period of compensation and on payments to be made. According to one expert, in North Carolina 48 percent of the wage loss was compensated in temporary disability costs in 1940 and only 21 percent in permanent and fatal cases; in Massachusetts in 1933, 55 and 25 percent, respectively; in Illinois, in 1952, 30 percent for temporary cases, 13 percent for permanent-partial cases and less than 6 percent for fatal cases. In general, about two-thirds of the wage loss for temporary disability is not being compensated and less is being recovered for the permanent disabilities.⁵¹

There are 8 States with earned premiums in excess of 1.5 percent of payrolls and 16 with rates from 0.99 to 0.72. Substantial differences in the premium and benefit costs of six northern and six southern industrial States are to be noted—from 25 to 30 percent. Injuries vary also so that the differences do not reflect equal variations in re-

⁴⁶ H. M. Somers and A. R. Somers, "Workmen's Compensation," 1954, pp. 77-82.

⁴⁷ *Ibid.*, p. 77.

⁴⁸ *Ibid.*, p. 77.

⁴⁹ *Ibid.*, p. 81.

⁵⁰ *Ibid.*, p. 82.

⁵¹ Social Security Bulletin, March 1954, op. cit., pp. 9-10.

sults. Moreover, States vary greatly in what they get per dollar of premium. Thus, Massachusetts pays 28 percent less than New York but gets 13 percent more in benefits.

The President's Commission on the Health Needs of the Nation thus summarizes workmen's compensation:

Since 1911 the workmen's compensation laws of the various States have become keystones in America's industrial health progress. Workmen's compensation systems in the States vary from excellent to grossly inadequate. In 11 States, the law applies only to certain listed "hazardous" employment; 4 States give no coverage to occupational diseases and 18 cover only certain listed diseases. Excessive litigation is common, with both legal and medical chicanery * * *. Eleven States have no factory inspector. Almost all compensation payments are inadequate by present-day standards, particularly in providing for total rehabilitation * * *.

When monetary benefits are awarded, they are usually inadequate. Theoretically determined by a percentage of wages, cash payments are actually restricted to a statutory maximum of \$25 to \$38 per week in most States, a maximum which does not reflect current inflationary trends: medical-expense payments are strictly limited in 17 States; only 19 States have provisions for rehabilitation in workmen's compensation.

LONG-TERM COMMITMENTS

I shall discuss private pension plans later. But here I want to comment briefly on the violence done to contracts by long-term price and income rises. It is easy to understand why pensions are in many ways unsatisfactory. Where the plans are not funded, of course, there is always the problem of whether adequate cash will be available when the payments have to be made. Even where they are funded, there is always the problem that prices and per capita income rise, and a pension plan that is worked out on the assumption that wages will remain where they are today causes large underpayments in the years when the worker retires. In the face of past history, if, for example, the average wage is \$80 a week today, the pension plan should really be worked out on the principle that when a young man entering the labor market is given a right to a pension, the wage will be at least double in a period of 25 years. This allows for a small amount of inflation as well as the gains of productivity. In college experience over the years, it has been discovered that if a plan is made out on the theory that 50 percent of the wage at the end of the working period would be available, what is actually available comes to about 25 percent.

In general, what we can conclude is that the adjustment to rising prices has been achieved in some programs, for example, in unemployment insurance where the tieup has been with wage rates, but in many programs for long periods of time the benefit payments have not matched the rise of prices, and a fortiori the rise of per capita income or average wages. This is a problem which is likely to become of much greater importance as the maintenance payments continue to rise. For example, the Department of Health, Education, and Welfare and the U.S. Department of Labor have estimated that the income maintenance payments under public programs rise as follows: 1940, \$2.1 billion; 1950, \$6.3 billion; 1955, \$11.1 billion; 1965, \$18.5 billion; 1975, \$24.3 billion; 1985, \$29.6 billion.

The major factors by 1985 would be: ⁵⁰

	<i>Billion</i>
Old-age and survivors insurance.....	\$18.8
Unemployment insurance.....	2.9
Public assistance.....	2.0
Federal civilian retirement.....	1.8
Federal uniform services, retirement.....	1.5
State and local government retirement.....	1.0
Workmen's compensation.....	1.0
Railroad retirement.....	.5

VETERANS' BENEFITS

In 1940, veterans' benefits amounted to \$535 million; by 1947, \$6,530 million; by 1957, \$4,681 million; and in 1960, according to the President's budget estimate of January 1959, \$5,088 million. The breakdown in 1947 and 1957 was as follows:

[In millions]

	1946-47	1956-57
Pensions and compensations.....	\$1,831	\$2,906
Readjustments.....	1,512	-----
Health and medicine.....	572	770
Education.....	2,251	811
Welfare and others.....	365	194
Total.....	6,530	4,681

¹ \$159,000,000 not included here are from State and local sources.

Source: Social Security Bulletin, October 1955, pp. 6-7, and October 1958, p. 23.

The President's budget gives the following figures for 1960:

[In millions]

A. Readjustments:	<i>1960</i>
Education and training.....	\$490
Loan guarantee and other benefits.....	107
Unemployment compensation.....	8
B. Compensations and pensions:	
Service-connected compensations.....	2,043
Non-service-connected pensions.....	1,203
Burial expenses, other.....	61
C. Hospital and medical care, except construction.....	891
D. Hospital construction.....	55
E. Insurance and servicemen's indemnities.....	49
F. Other services and administration.....	181
Total.....	5,088

Source: President's budget 1960, p. M72.

⁵⁰ See "Veterans' Benefits in the United States," report to the President by the President's Commission on Veterans' Pensions, April 1956, "Findings and Recommendations," p. 118; also see Social Security Bulletin, October 1958, p. 27.

On the assumption that the present laws would continue, the President's Commission on Veterans' Benefits made the following estimates of costs in the future:

TABLE 7-1.—*Veterans' Administration budget expenditures under present laws, selected fiscal years, 1940-2000*

[In billions]						
	1940	1955	1965	1975	1985	2000
Total.....	\$0.56	\$4.4	\$4.7	\$4.8	\$6.0	\$5.8
Non-service-connected pensions.....	.12	.8	1.7	2.0	3.4	3.6
Service-connected disability and death benefits.....	.33	1.9	2.0	1.8	1.6	1.2
All other.....	.11	1.7	1.0	1.0	1.0	1.0

Source: The President's Commission on Veterans' Pensions, "Veterans' Benefits in the United States," a report to the President, "Findings and Recommendations," p. 106.

The estimated numbers of veterans is as follows:

TABLE 7-2.—*Estimated total living war veterans and veterans aged 65 and over, selected dates, 1940-2000*

[Millions of veterans]							
	1940	1955	1965	1975	1985	1995	2000
Total.....	4.3	21.9	21.7	18.7	14.6	9.4	6.8
Veterans under 65.....	4.2	21.2	19.4	16.6	10.1	2.3	.2
Veterans 65 and over.....	(1)	.7	2.3	2.1	4.5	7.1	6.6

¹ Negligible.

Source: Ibid., p. 70.

The Veterans' Administration estimated that the per capita cost of public income maintenance rose from \$19 in 1940 to \$83 in 1955, and would rise to \$132 in 1965, \$144 in 1975, and \$156 in 1985 (the last three estimated). Veterans' costs would rise from roughly one-fifth of the total, that is, \$16 out of the total of \$83 in 1955 to 24 percent in 1975, \$34 out of \$144, and to 27 percent by 1985, \$42 out of \$156. The assumption is the continuance of present legislation.⁵³

In assessing the benefits to be paid to veterans, the President's Commission suggested that needs should be taken into account. Variations in the cost of living and in the income levels in different parts of the country should also be considered. The benefits should be based on the minimum needs as assistance programs are, and should in the long run be, lower than benefits paid under old age insurance. The Commission believed it was important that payments be not so large as to damage incentives.⁵⁴

The Commission was also greatly concerned that the benefits should not be put on such a level as to put an excessive burden on future generations. Of course, in modern theory each generation pays its own bill for the most part, although it is true that commitments for excessive benefit payments might impose a serious financial problem on later generations. In view of the tendency for prices and incomes per capita to rise over the years, I do not believe that present proposals

⁵³ Ibid., p. 123.

⁵⁴ Ibid., pp. 12 and 142.

on veterans' benefits are likely to prove as much of a burden on future generations as the Commission itself believes. The tendency on the whole is to underestimate the rise of future income in current dollars.

In this connection, note the following table:

TABLE 7-3.—*Public expenditures for income maintenance programs and the national income (selected years, 1940-85)*

Item	Actual			Projected		
	1940	1950	1955	1965	1975	1985
A. National income (billions of dollars) ¹	81.6	240.0	322.2	414.0	571.0	756.0
B. Expenditures for income maintenance programs (billions of dollars):						
1. Assuming no increase in benefit rates: ¹						
General programs	2.2	6.4	11.1	18.5	24.3	29.6
VA compensation and pensions.....	.4	1.9	2.7	6.6	7.6	11.1
Total.....	2.6	8.3	13.8	25.1	31.9	40.7
2. Assuming future increase in benefit rates at half the rate of increase in national productivity:						
General programs	2.2	6.4	11.1	21.1	32.1	45.9
VA compensation and pensions.....	.4	1.9	2.7	7.5	10.0	17.2
Total.....	2.6	8.3	13.8	28.6	42.1	63.1
C. Adjusted income maintenance expenditures, as percent of national income (percent):						
General programs.....	2.7	2.6	3.5	5.1	5.6	6.1
VA compensation and pensions.....	.5	.8	.8	1.8	1.8	2.3
Total.....	3.2	3.4	4.3	6.9	7.4	8.3

¹ Estimated figures assume present laws and benefit rates with 2 exceptions: OASI cash disability benefits at age 50 are assumed along the lines of H.R. 7225, 84th Cong.; VA service pensions are assumed as described in text.

Source: The President's Commission on Veterans' Pensions, "Veterans' Benefits in the United States," a report to the President, "Findings and Recommendations," p. 124.

This table suggests that on the basis of present benefits the veterans' compensation and pension program would increase from \$2.7 billion to \$6.6, \$7.6, and \$11.1 billion in 1965, 1975, and 1985, respectively. But if it is assumed that the future increase in benefits increases at half the rate of the increase in national productivity, the amounts would be \$2.7 billion for 1955, and \$7.5, \$10, and \$17.2 billion for 1965, 1975, and 1985. The latter, as a percentage of total national income, would be 0.8 percent in 1955, and 1.8, 1.8, and 2.3 for 1965, 1975, and 1985, respectively. And for all public income maintenance programs, on the assumption of a rise of benefits of one-half the rise of productivity, the percentage of income would be 4.3, 6.9, 7.4, and 8.3. This seems like a fairly large rise in the costs of maintenance programs in relation to the national income. It should be noted that the estimate is that the national income would be about \$756 billion by 1985. Even this seems rather to underestimate the possibilities. The Republican policy committee has just issued a projection of \$900 billion long before 1985. In 30 years the per capita income should be at least double what it is today and therefore the average nonfarm family income might well be of the order of \$12,000 or \$14,000. Under these circumstances, even if these maintenance programs took 8.3 percent as against 4.3 percent in 1955, this would be no great catastrophe, all the more so since a large part of the benefits would come from payments by the contributors. Actually, in view of the slow adjustment of benefits,

the percentage is likely to be less than 8.3 and especially since income is projected rather conservatively. An increase of benefits at one-half the rate of productivity increase might very well match the increase in the cost of living and in the absence of new legislation and aside from increased costs under current legislation leave benefits at a reduced level in relation to real income. In other words, the assumption of an increase equal to half the productivity gains (in current prices) might provide no real rise of benefits except insofar as the aging of the population would bring increased numbers with benefits and higher benefit as years of coverage are increased.

On the other hand, in view of the large numbers concerned and particularly in the older age group, political pressures will be great and these political pressures might very well result in the rise of benefits more rapid than the increase in the cost of living. It is to be noted that in the 1950's this pressure has been reflected in much more rapid adjustments in benefits under old-age, survivors, and disability insurance.

In this connection, it is worth while looking back to see what has happened in the past.

TABLE 7-4.—*Estimated average cost of veterans' benefits per serviceman in each war*

[In thousands]

UNDER PRESENT LAWS

Conflict	Number in Armed Forces during war	Cost per serviceman	
		Non-service-connected pensions	Total
Civil War.....	2,213	(1)	\$3.7
Spanish-American War.....	392	(1)	12.2
World War I.....	4,744	\$6.5	12.7
World War II.....	16,535	6.6	14.1
Korean conflict.....	² 5,331	9.9	14.9

ASSUMING SERVICE PENSION FOR RECENT CONFLICTS

Civil War.....	2,213	(1)	3.7
Spanish-American War.....	392	(1)	12.2
World War I.....	4,744	16.0	22.0
World War II.....	16,535	21.4	28.7
Korean conflict.....	² 5,331	29.7	34.5

¹ No breakdown is available, but expenditures were largely for non-service-connected pensions.

² Does not include 1,476,000 veterans who served in World War II and Korean conflict.

Source: "Veterans' Benefits in the United States," p. 115.

I have compared the cost per serviceman in the four major wars, both on the assumption that present laws will continue and on the assumption that service pensions for recent conflicts will be made available as for earlier conflicts. Should the latter happen, of course, the costs would increase greatly. The table does suggest that the cost of veterans' benefits vis-a-vis per capita income has tended to decline under present laws substantially since World War I. Inflation has had something to do with these losses. The large increase in World War I vis-a-vis the Civil War can be explained in no small part by the very small benefits made available under the Civil War. But should

the service pensions of wars before World War II and the Korean war be voted for the later conflicts, then the increase in cost would be substantially larger than the rise of per capita income for World War II veterans, though not for those of the Korean war. Actually, the differences are not large. In relation to World War I, however, the rise of pensions would be much less than that of per capita income. These results are based on comparisons with pensions in the Civil War. I should make clear that I have measured the per capita incomes as an average of the four wars, that is, the per capita incomes during the wars and not the per capita incomes when the benefits are to be paid. Obviously, per capita incomes on the average would be much higher in periods of payment than during the course of the war. To this extent, this table overestimates the costs of the pensions in relation to per capita income.

TABLE 7-5.—*Per capita income in 4 major wars, compared with veteran pensions per serviceman in each war, under present laws and assuming service pensions for recent conflicts*

Wars	Per capita income (Civil War=100)	Cost per serviceman under present laws	Cost per serviceman assuming service pensions for recent conflicts
Civil War.....	100	100	100
World War I.....	200	343	595
World War II.....	611	380	776
Korean war.....	957	403	932

Source: Calculations from "President's Economic Report, 1959"; "Historical Statistics of the United States, 1789-1945"; my computations; also "Veterans' Benefits in the United States," p. 115.

This table does suggest at least that the benefits have more than responded to the price level and they had not responded to the rise of per capita incomes. But should pensions be voted for recent conflicts as in the past conflicts, then the total cost per serviceman would rise roughly in the same proportions as the per capita income at the time of the wars. But the rise would probably be less than the increase in per capita income at the time the benefits are being paid. Moreover, this is in relation to the Civil War when benefits were surprisingly small. In relation to World War I the rise of benefits even with pensions as in earlier wars, would be only 15 percent as large as the rise of per capita income for World War II and Korean war veterans.

Another indication of what has happened is given by the following:

World War I basic rate for 100-percent disability=	\$30 per month regardless of rank:
1919.....	\$80
1924.....	100
1954.....	181

It should be noted that those who had 100 percent disability were only about one-eighth of the total in 1955.⁵⁵

The benefits to those with 100 percent disability has increased substantially more than the price level, and by 1955 had even exceeded the rise of per capita income.

⁵⁵ "Veterans' Benefits in the United States," pp. 148, 149.

TABLE 7-6.—*Rise in veterans' benefits for 100 percent disability and rise in the cost of living, 1914-54, various years*

	Benefits, total dis- ability	Cost of living
1914.....	100	100
1919.....	267	157
1924.....	333	170
1954.....	603	263

Sources: Last table and also "Veterans' Benefits in the United States," p. 148.

Benefits do not seem excessive for disabled veterans: \$1.4 billion is being paid out to 2 million disabled veterans, or an average of about \$700 a year, with monthly payments varying from \$17 to \$181. The average amount was after all only \$700 a year. Nor do the payments to survivors of \$400 million to 380,000, or a little more than \$1,000 a year, seem excessive.⁵⁶

In one area, of course, there would be substantial loss, and that is the insurance made available to servicemen. In 1955, there were 5,600,000 policies still in force or in waiver status, with a total of \$37 billion of national service life insurance.⁵⁷ The continued rise in prices since this insurance went into effect does, of course, cut down the benefits substantially.

Finally, there is a good deal said in the veterans' report about the high economic status of veterans, a status that is substantially higher than that of nonveterans. It is also pointed out that the average basic pay plus allowances has varied as follows:

	[1918=100]
1865.....	53
1898.....	55
1945.....	187
1952.....	304
1955.....	333

The rise in real compensation, and this leaves out of account some special benefits such as medical care, was 86 percent from 1918 to 1955. For enlisted men alone, it was 76 percent.⁵⁸ The point made here by the Commission is that the soldiers have been treated well while enlisted and to that extent do not need special compensation. The average basic pay rose from \$797 in 1918 for all military personnel to \$1,805 in 1955, an increase of 126 percent. This rise is, however, considerably less than the increase of per capita income in the whole population.

PENSION FUNDS

Partly as a result of dissatisfaction with the benefits under old-age survivors and disability insurance programs, workers and their representatives have sought supplementary pension payments through programs supported by their employers and sometimes with contributions by the workers. By the end of 1957, it has been estimated that the number of workers covered by private pension programs total 17.7

⁵⁶ Ibid., pp. 50-51.

⁵⁷ Ibid., p. 52.

⁵⁸ Ibid., pp. 84-85.

million. Estimates of the amount of assets in these funds are now about \$40 billion.

In 1945 there were only 6,400,000 covered with employer contributions of \$830 million per year and employee contributions of \$160 million. By 1957 the total increased to 17,700,000 workers covered, employer contributions to \$3.9 billion, and employees to \$680 million. The reserves in 1957 were estimated at \$35 billion, the number of beneficiaries 1,250,000, and the amount of benefit payments \$1,150 million. A survey as of January 1, 1957, of all pension plans in New York State, which covered 1,500 workers or more, established the following median benefits for workers with 30 years of service:

Average annual compensation	Monthly median benefit	Median benefit as a percent of compensation	
		(a) Excluding social security benefit	(b) Including primary social security benefit
\$3,000.....	\$65	26	64
\$4,200.....	72	21	54
\$6,000.....	- 95	19	40-42

Source: R. Tilove, "Pension Fund and Economic Freedom," 1959, pp. 9-17.

The Fund for the Republic study estimates that 45 to 55 percent of all wages and salary labor force, outside of Government and agriculture, would be covered by private pension plans in another 10 years.⁵⁹

A private pension program is especially likely to suffer as a result of inflation. As inflation proceeds, a public program may make adjustments, or may put part of the burden on the taxpayer, but this is more difficult under a private plan. Hence, the private plan tries to protect workers increasingly by putting its assets into common stocks. In a general way, it may be assumed that the price of common stocks will rise more than prices. The reason for this is partly that with rising prices, dollar value of profits will increase even more; and also because the corporation is run primarily for the common stockholder rather than for the bondholder. In 1951, corporate pension funds had 11.8 percent of their investments in common stock; by 1957, 24.7 percent. Virtually all other assets are fixed in dollars and, therefore, insofar as inflation proceeds, the pension funds lose part of their real value.⁶⁰ In 1957 corporate pension funds invested 37 percent of the net receipts in common stocks, a ratio considerably higher than in any previous period.⁶¹ The Fund for the Republic estimates that by 1965 self-insured pension funds may hold \$17 to \$20 billion in common stock, although this may amount to no more than 6 percent of the total outstanding.⁶²

The beneficiary of private pension funds will suffer to some extent as a result of inflation. To some extent, the losses may be recouped through larger investments in common stock, but there are institu-

⁵⁹ Ibid., p. 19.

⁶⁰ Ibid., p. 33.

⁶¹ Ibid., pp. 35-36.

⁶² Ibid., p. 84.

tional and other legal obstacles to heavy investments in common stock. In the past there also have been serious losses as the result of excessive payments to banks and insurance companies, and some corruption by trade union leaders. The result has been that a substantial part of the payments made on behalf of workers has been wasted. The hearings before the Senate Labor and Welfare Committee in 1955 and later years reveal large losses of this kind and resulted ultimately in the Pension Disclosure Act, which at least provides some publicity in the handling of the pension funds.

CHAPTER 8. ASSETS AND INFLATION

In the long debate over the pros and cons of inflation, much has been made of the fact that inflation robs savers and in particular those who have fixed claims in dollars—for example, of bonds or bank deposits. It is, of course, clear that if one purchased a Government bond yielding 3 percent in 1945 and the bond were to be redeemed in 1955, and if prices have risen by 75 percent in the meanwhile, the bondholder has suffered a serious loss. Again, in 1958, the American public held \$550 billion of life insurance on 124 million individuals. Legal reserve life insurance companies accounted for \$494 billion, or an average of \$11,000 per insured family. In 1939, there had been \$109 billion of life insurance in force. Obviously any of this insurance that was realized in later years suffered from a rise in prices and a reduction in the real value of the payment. Anyone, for example, receiving benefits of an insurance policy issued before 1939, in the year 1958 would experience a substantial loss in the real value of his policy. The same, of course, would hold for the \$152 billion of life insurance in force in 1945, for there has been a substantial inflation since 1945. But it is of interest that since 1949, the total life insurance in force rose from \$214 to \$494 billion in 1958, or a rise of \$280 billion, and during this period, the inflation has not been large. Of course, the beneficiaries of these policies are not likely to realize their benefits for many years, and therefore the real issue is: How much will inflation develop once their benefits are received? It is an interesting fact that despite the large inflation since 1940 life insurance per family has risen from \$2,700 to \$8,800, and in relation to disposable personal income per family, from about 160 percent in 1940 to a little less than 160 in 1958. In view of the very large advance of public insurance, notably the old age insurance, this is a remarkable record and suggests that the public still is not aware or very much interested in the process of inflation. One of the greatest blocks to inflation is the lag in the general realization of its presence.

Of course, life insurance companies might conceivably invest in equities, and therefore protect their policyholders by investing in equities as an offset to inflation. This would not do the policyholder any good unless he had an escalator clause in his policy. But they are unable to invest in equities as a rule, in part because of the legal restrictions. Of \$108 billion of assets held in 1958, U.S. insurance companies had only \$4 billion in stocks. They also held a little over \$3 billion in real estate, an asset that rises with inflation. But most of their assets are in types that do not respond to rising prices.⁶³

⁶³ All facts in these last few paragraphs are from "Life Insurance Fact Book," 1959, and my calculations.

But let us take a broader look at the problem of assets.

TABLE 8-1.—*The share of national saving in changes in national wealth and combined net worth, period totals: 1897 to 1949*

Period	Change in wealth	Change in combined net worth	Saving	Share of saving in change in (percent)—	
				Wealth	Net worth
	(1)	(2)	(3)	(4)	(5)
	<i>Billions</i>	<i>Billions</i>	<i>Billions</i>		
1897-1900.....	\$19		\$8	42	—
1901-12.....	77	\$103	45	58	44
1913-22.....	169	216	87	51	40
1923-29.....	105	227	112	107	49
1930-33.....	-100	-206	-20	18	10
1934-39.....	65	69	11	17	16
1940-45.....	175	264	35	20	13
1946-49.....	328	357	170	52	48
1901-49.....	810	1,030	439	54	43
1897-1949.....	830	—	447	54	—

Source: R. W. Goldsmith, "A Study of Savings in the United States," vol. I, p. 194, 1955.

This table reveals the increases in national wealth and net worth from 1897 to 1949. Assets seem to rise in all periods except in 1930-33 when there was a substantial deflation. As a general rule, savings account for roughly one-half of the increase in wealth, but there are important exceptions: 1930-33, 1934-39, 1940-45. Where savings are not the explanation, the major factor is of course the increase in the price level. The explanation of the greater rise of national net worth than wealth is given as follows by Goldsmith: ⁶⁴

While national wealth changes essentially reflect three factors only—cumulated domestic saving, changes in the prices of tangible assets, and, though much less importantly, the net foreign balance—combined national net worth shows in addition the effects of realized capital gains and losses, and of unrealized appreciation or depreciation due to changes in the prices of equity securities. Combined national net worth is, furthermore, affected by certain duplications, such as the inclusion of the market value of corporate stock and the balance sheet value of participations in unincorporated business enterprises, first in the calculation of the net worth of the owners and then again in that of the balance sheet value of the equity of corporations and unincorporated businesses. Combined national net worth may therefore be expected to show wider fluctuations, at least in absolute terms, than national wealth, with the result that cumulated saving accounts for a smaller proportion of changes in the former than in the latter.

⁶⁴ *Ibid.*, pp. 194-195.

TABLE 8-2.—*Comparison of personal saving and net worth changes for the period 1901-49*

[In billions]

	Holdings		Change in net worth	Saving 1901-49	Difference (3-4)
	End of 1900	End of 1949			
	(1)	(2)	(3)	(4)	(5)
1. Real estate.....	\$45.3	\$349.4	\$304.1	\$108.7	\$195.4
2. Producer durables.....	2.2	28.8	26.6	20.1	6.5
3. Consumer durables.....	6.0	99.3	93.3	81.2	12.1
4. Inventories.....	7.2	31.9	24.7	3.0	21.7
5. Currency.....	1.3	23.3	22.0	22.3	— .3
6. Deposits.....	6.1	120.2	114.1	118.5	— 4.4
7. Life insurance reserves.....	1.6	58.8	57.2	58.1	— .9
8. Pension and retirement funds.....	0	45.7	45.7	46.2	— .5
9. U.S. Government securities.....	.6	61.6	61.0	67.4	— 6.4
10. Other bonds.....	3.9	17.7	13.8	25.3	— 11.5
11. Stocks.....	10.7	117.8	107.1	50.2	56.9
12. Mortgage holdings.....	4.2	25.3	21.1	17.8	3.3
13. Equity in unincorporated business.....	6.3	68.8	62.5	—	62.5
14. Other assets.....	4.1	24.2	20.1	1.1	19.0
15. Total assets.....	99.4	1,072.8	973.4	619.9	353.5
16. Debt.....	14.9	105.3	90.4	94.7	— 4.3

Source: Ibid., p. 197. For notes, see original table.

This table shows that savings account for about two-thirds of the rise of net worth. The largest increase in an item over the amount of savings toward the accumulation of this asset is in real estate.

Between 1900 and 1949 the current value of real estate held by individuals has increased by about \$200 billion more than owners' saving, i.e., the amounts which have been spent for construction and related outlays, after account is taken of depreciation allowances on original cost basis and of increase in mortgage debt. This represents well over one-half of individuals' total unearned increment. The valuation difference of \$200 billion, of which about two-fifths is accounted for by the increase in the value of land while nearly three-fifths reflects the increase in the level of construction costs, is equal to over three-fifths of the current value of all real estate held by individuals at the end of 1949.⁶⁵

It will be noted that the other two items that reveal large gains in relation to the savings made available are inventories and stocks.

Another interesting item in relation to the inflation problem is the growth of liquid assets in relation to total assets. Where liquid assets tend to rise to that extent the protection against inflation is reduced. By liquid assets we mean monetary metals, currency, commercial bank deposits, deposits in other financial institutions, U.S. Government and State and local government securities. For example, for households the percentage of liquid assets to total assets rose from 7.8 percent in 1900 to 10 percent in 1929, to 23.6 in 1945 and 19.7 percent in 1949. For business enterprises, the percentages in these years were 11.4, 11.1, 47.4, and 35.5.⁶⁶

This increase of the share of liquid assets is an important factor in the rise of the share of intangible to total assets. Here are the percentages for 1900, 1929, 1945, and 1949:

⁶⁵ Ibid., pp. 196-198.⁶⁶ Ibid., p. 202.

TABLE 8-3.—*Ratio of intangible assets to total assets*

	Households	Business enterprises	Governments	Total
1900.....	37.5	54.7	18.4	43.3
1929.....	56.0	61.6	26.1	56.5
1945.....	60.5	71.6	44.8	63.4
1949.....	53.5	64.4	35.9	56.3

Source: Ibid., p. 203.

Goldsmith concludes as follows:⁶⁷

The structural changes in the first half of this century have thus reduced the share of price-sensitive assets of households, banks, and governments, and have increased the share in the case of nonfinancial business enterprises. This means that, since debt-asset ratios have as a rule decreased substantially over the same period, a change in asset prices of the same proportion has now a relatively smaller effect on the net worth of farm and nonfarm households than 50 years ago, but has still about the same repercussion on the equity of nonfinancial business enterprises, and a larger effect on that of certain financial institutions. In other words, the real net worth (i.e., the current net worth divided by an index of the general price level) of individuals is now more susceptible, at least for households in the aggregate, to dilution by inflation than it was 20 or 50 years ago.

In other words, with the rise of prices households are much more sensitive to rising prices, for the value of their assets is not likely to rise as much as in earlier periods. They hold a smaller proportion of price-sensitive assets. Nonfinancial business enterprises, on the other hand, have increased their share of price-sensitive assets as against households, banks, and government which have reduced their shares.⁶⁸

TABLE 8-4.—*Percent price-sensitive to total assets, major saver groups, 1900 to 1949*

	1900	1929	1949
Households.....	81.4	75.6	65.4
Business enterprises.....	50.2	50.4	40.5
Nonfinancial corporations.....	67.1	70.4	74.7
Governments.....	71.3	67.1	50.3

Source: Ibid., p. 205.

A good indication of the effects of inflation on particular groups is given by the debt ratio of the major saver groups. Households are in a less favorable position, business enterprises in a more favorable position, and governments in a much more favorable position.⁶⁹

⁶⁷ Ibid., p. 206.

⁶⁸ Ibid., p. 206.

⁶⁹ Ibid., p. 210.

Figures for 1900, 1929, 1949 are as follows:

TABLE 8-5.—*Debt ratio of major saver groups, 1900, 1929, 1949*

	Households	Business enterprises	Governments
1900	10.1	54.0	48.3
1929	12.7	55.0	63.6
1949	8.6	57.7	156.2

Sources: *Ibid.*, p. 210.

CHAPTER 9. MORTGAGES, INSTALLMENT PAYMENTS, AND THE INFLATIONARY PROCESS

Mortgagees are in an especially good position to profit from inflation. As prices rise, they pay back interest and amortization in dollars of reduced purchasing power as inflation proceeds. In addition, their burden is reduced insofar as income rises with increased productivity; the burden is reduced insofar as each hour of work yields a larger number of dollars.

Nonfarm mortgages increased from \$31 billion in 1929 to \$45 billion in 1948 and \$144 billion in 1958. The mortgagee gains insofar as more dollars are available, either because of increased productivity or inflation, in repaying a mortgage debt. But it must be remembered that others lose. According to the Federal Reserve Board in June 1959, there were \$125 billion of nonfarm mortgages outstanding on one- to four-family houses, and \$169 billion if we include multi-family and commercial properties. Farm mortgages were \$12 billion additional in June 1959.

Against the gains of the mortgagee are the losses of the mortgagor. Of all mortgages of \$181 billion, financial institutions accounted for \$138 billion, roughly three-quarters. The holdings in June 1959 of all residential mortgages were commercial banks, \$19.6 billion; mutual savings banks, \$21.7 billion; life insurance companies (nonfarm), \$35 billion; saving and loan associations, \$46 billion (in 1958).⁷⁰ This breakdown does suggest that at least some part of the gains made by the mortgages will be offset by losses suffered by them and others insofar as they own stakes in commercial banks, mutual savings banks, life insurance companies, and the like. In general, though, there probably is a transfer of income as prices rise from high income groups—lenders—to low income groups—borrowers—and especially on the all important residential real estate.

Savings accounts, inclusive of accounts in savings associations, mutual savings banks, commercial banks, postal savings and credit unions, and life insurance reserves, increased as a percentage of new residential construction from 39.7 percent in 1950, the year of the outbreak of the Korean war, to as high as 95 percent in 1957, an average of 74 percent in 1948–57, and an estimated increase to 82 percent in 1961–70. These savings accounts provided \$105 billion in 1948–57 and an estimated \$193 billion in 1961–70.

The nonfarm residential mortgage debt, \$120.5 billion in 1957, is estimated to rise to \$154 billion by 1960, and \$295 billion by 1970.

⁷⁰ Federal Reserve Bulletin, September 1959, pp. 1179–1181.

The increase of this mortgage debt as a percentage of increase in savings accounts and life insurance reserves varied from 56 percent in 1957 to 150 percent in 1950, and averaged 81 percent in 1948-57, and an estimated average of 73 percent in 1961-70. The increase of non-farm residential mortgage debt in relation to total savings varied from 36 percent in 1948 to 56 percent in 1957, 58 percent in 1960, estimated, and 65, estimated, in 1970.⁷¹ It is clear that mortgages on non-residential construction absorb a large part of total savings.

But who are the people who get into debt on installment payments of various kinds? The very low income, say, those with incomes of less than \$1,000 in 1957 and 1958 incurred little indebtedness. Whereas 52 percent of all incomes did not have installment debt payments to make, 73 percent of those with incomes under \$1,000 had no payments to make. The percentage declined steadily to 35 percent for those with incomes of \$6,000 to \$7,499 and then rose to 58 percent for those with incomes of \$10,000 or more. The modal rate of installment debt payments as percentage of disposable income was 10 to 19 percent for those who had payments to make. The percentage for those making 10 to 19 percent payments to their disposable income was 17 for all incomes, 7 percent for those with incomes under \$1,000 and then rising gradually to 28 percent for those with incomes of \$6,000 to \$7,499 and declining to 12 percent for those with \$10,000 or more.

In general, it may be said that the very low incomes do not profit as much from the beneficial effects of inflation on their debt payments as do the somewhat higher incomes. For example, the modal figure for ratio of regular payments to disposable income is 33 percent, and the payments were 20 to 39 percent of disposable income. The percentages beginning at \$1,000 income and rising by \$1,000 steps to \$5,000-\$5,999 are 10, 24, 24, 32, 39, 43. The percentage for \$6,000-\$7,499 is 45, for \$7,500-\$9,999 is 44, and for \$10,000 and over is 28. Hence, though on the whole low incomes gain, the largest gains do not go to those with the lowest incomes.⁷² The middle income groups gain most relatively from the erosion of the advanced dollar.

It is also clear that on the whole those that gain particularly from Government-guaranteed mortgages are not the lowest income groups. For example, the table below suggests this:

TABLE 9-1.—*Characteristics of 1-family new home transactions, FHA, sec. 203, 1952 and 1957*¹

Median	1952	1957
Property value.....	\$10,022	\$14,261
Calculated area..... square feet..	923	1,105
Number of rooms.....	5 3	5 8
Annual income of mortgagor.....	\$4,811	\$6,632
Annual housing expense.....	\$988	\$1,382
Expense-income ratio..... percent..	19.6	19.7

¹ Data from Federal Housing Administration, preliminary draft, 24th annual report, table 37. The expense-income ratio was computed from the averages, rather than the published medians.

Source: Subcommittee on Housing, Committee on Banking and Currency, U.S. Senate, "Study of Mortgage Credit," 1958, p. 76.

⁷¹ Committee on Banking and Currency, Subcommittee on Housing, "U.S. Senate Study of Mortgage Credit," 1958, p. 188.

⁷² *Ibid.*, p. 69.

In 1957, the average property value guaranteed under FHA, section 203, was \$14,261. The rise in value from 1952 was 43 percent. In this same period per capita income rose only 17.4 percent, and it will be noted that the annual income of the mortgagee rose by 38 percent, suggesting that these homes had to be built and mortgaged by higher income groups. The expense-income ratio did not change, but this is explained partly by the appeal to higher income groups. The annual housing expense, however, increased by about 38 percent.⁷³ The increase is for family and unattached individual's income, average mean after taxes.

How much does one gain from mortgaging a home? It should be noted that a 30-year \$14,000 mortgage of 5¾ percent interest costs \$157 per month in the Northeast. Of the \$157, only \$82, or roughly one-half, are for interest and amortization. It is assumed that the other items, for example, heat, insurance, will increase with the rise in prices. It can also be assumed that one-half of these payments will be made by the 15th year and that the average payment would be made in the 15th year. By this time, we might expect inflation of perhaps about one-third, and hence a reduction of costs on that account of about one-quarter, and also a corresponding rise of real income, which would also cut the burden substantially. If we allow for the increase in per capita income due to rising productivity and an inflation of about 33 percent in 15 years, and if we assume that the gains to the mortgagee from rising income would be limited to one-half of the total payments—others respond to rising prices and incomes—then roughly the net gain for a 30-year mortgage would be about 20 percent; that is, the cost in terms of stable dollars would be roughly 80 percent as much as when the contract was made.⁷⁴

That the low-income groups are largely excluded from these Federal guarantees is explained in part by the high rate of interest as well as the period of amortization. For example, it is estimated that a \$14,000 mortgage requires a gross annual income of \$7,536, if the loan is for 30 years and the rate of interest is 5¾ percent. But with a 2-percent rate and a 35-year mortgage, the required income would be \$5,808.⁷⁵

Much concern has been expressed on the issue whether the large numbers of mortgagees with heavy mortgages on property will be able to meet their obligations. Since prewar there has been a steady increase in the average term of years of mortgages as well as an increase in the loan value in relation to the value of the property. The tendency to give a large proportion of value in mortgage and to extend the term has resulted in a payment in relation to income that has not changed greatly. For example, here are some figures from 1948 to 1956.

⁷³ "Study of Mortgage Credit," p. 76; "Survey of Current Business," April 1959, p. 10; "Annual Economic Report of the President, 1959."

⁷⁴ Cf. *ibid.*, p. 82.

⁷⁵ *Ibid.*, p. 83.

TABLE 9-2.—*Characteristics of FHA-insured and VA-guaranteed mortgage loans on new houses, 1948 and 1956*

	1948	1956
Average term, years.....	21	25.5
Average loan to value ratio, percent.....	81.0	86.7
Average payment in relation to income, percent.....	16.1	16.1
Mortgagees median effective income (1954 dollars).....	4,469	5,921
Percent of loans with no downpayment.....	19.0	31.9
Percent of loans with 30-year terms.....	¹ 2.6	² 53.2

¹ 1950.² 1958.

Source: Ibid., p. 247.

CHAPTER 10. OTHER SHARES, WAGES AND PRICES

INTRODUCTORY: THE CAUSES OF INFLATION

In the last few years there has been much discussion of a new kind of inflation, namely, what is generally called a cost-push inflation. This means that costs rise, and the rise of costs in turn brings about an increase in prices. Much of the emphasis, of course, is put on the great increase in wage rates which in turn induces higher prices. Insofar as there is support to the general idea that the recent inflation i.e., 1955 to 1958, has been a wage inflation or cost-push inflation, to that extent it might be argued that labor does not lose much from rising prices. It leads and, therefore, gains at the expense of the rest of the community until other shares rise with the increase in prices. For example, Gardner Means, distinguishes between a classical type of inflation with too much money chasing around too few goods, the kind of inflation that monetary policy has generally treated, and the inflation which comes with a rise of market-dominated prices in the recovery from a recession or depression. He holds that the latter is a healthy kind of inflation and is a normal and a necessary part of economic recovery.

The third type of inflation has been called an administrative inflation, which involves a rise in prices in the more concentrated industries where there is a considerable area of discretion within which price and policy can be made.⁷⁶

It is in the period since 1953 that Gardner Means finds the evidence of administrative inflation. This type of inflation comes, of course, where there is a heavy concentration of industries such as in steel and automobiles. For example, Means finds that in the steel industry, prices from 1953 to October 1958 rose by 36 percent, whereas all wholesale prices rose by only 8 percent.⁷⁷ According to one study from 1947 to the spring of 1957, unit labor cost in the iron and steel industry had increased 35 percent, but the steel industry had raised prices by 96 percent, or two to three times the increase in labor cost. The cost per unit of other materials and services purchased by United States Steel, aside from some of the direct labor costs, increased 37 percent in a period of 10 years. Obviously, prices rose considerably more than was justified by the rise of wages or even of costs.⁷⁸

⁷⁶ G. C. Means, "Administrative Inflation and Public Policy," 1959, pp. 4, 5.⁷⁷ Ibid., p. 16.⁷⁸ See Senate Committee on Finance, "Investigation of the Financial Condition of the United States," pt. 7, 1959, p. 2140.

Economists are not all in agreement that the recent inflation has been a cost-push or a wage inflation. But, certainly, this view has gained a considerable number of adherents in recent years. Just to give some indication of varying views, I note the following. For example, Prof. Gardner Ackley writes:

* * * Our postwar inflation is not basically the direct result of excessive demand. Rather, it represents a process that flourishes under conditions of high demand—but that can and does continue to operate even in the face of some, perhaps considerable, deficiency of demand.

On the analytical side, I criticize the usual view that inflation must result from excess demands or from a cost-push. It seems to me that inflations in our postwar economy can be understood primarily as a process of jockeying relative positions between labor and capital. In fact, the two groups extend claims that add up to more than the total GNP—inconsistent claims that can be resolved only by inflation.

* * * Wage setting can be to some considerable extent independent of supply and demand forces: Wage rates do not rise only when demand exceeds supply and rapidly fall in a reverse situation * * *.⁷⁹

Prof. Albert Rees has this to say:

There is no firm evidence that unions are a cause of inflation, and there is a good deal of evidence that in rapid inflations, wages set by collective bargaining lag behind other wages. The view that gradual inflation results from a "wage push" is based on casual observation, which can be highly misleading. Much further study is needed before it can be accepted as a basis for public policy.⁸⁰

Professor Weston has this to say:⁸¹

TABLE 10-1.—*Behavior of selected economic variables for manufacturing industries, 1949-56*

(1) Industry	(2) Percent increase in production, 1949-56	(3) Percent increase in hourly earnings, 1949-56	(4) Percent increases in prices (1947-49), 1956	(5) Percent increases, net profits to sales, 1949-56		(6) Average level of concentration of employment, 1950
				Before taxes	After taxes	
Lumber and wood products.....	35.2	41.0	25.4	-27.2	-33.9	27.7
Furniture and fixtures.....	28.4	35.5	24.8	11.9	-3.0	25.3
Stone, clay, and glass.....	56.4	43.4	26.9	12.2	-4.7	50.2
Primary metals.....	25.5	47.2	53.4	28.8	13.6	53.8
Fabricated metals.....	39.2	40.4	32.7	-10.3	-21.6	39.9
Machinery (not electrical).....	51.5	43.1	41.7	2.8	-15.6	41.6
Electrical machinery.....	111.2	36.8	37.6	-16.1	-33.3	59.6
Transportation equipment.....	89.5	38.0	29.1	-20.2	-35.7	60.4
Miscellaneous manufacturing.....	46.9	38.1	-9.0	8.1	0	38.4
Food and kindred products.....	15.3	44.2	6.1	-9.1	-27.3	42.3
Tobacco manufactures.....	4.9	49.5	15.5	50.7	16.3	57.3
Textile mill products.....	6.1	21.2	-12.1	-24.3	-36.6	31.5
Apparel.....	12.0	26.5	-3	43.2	23.8	-3
Paper and allied products.....	62.2	43.3	27.2	13.2	-6.2	33.5
Chemical and allied products.....	73.5	44.8	7.2	15.4	-2.4	51.6
Products of petroleum and coal.....	35.6	41.9	17.3	17.5	20.2	40.3
Rubber products.....	38.5	39.9	45.8	50.9	15.8	75.0
Leather and leather products.....	8.3	31.6	-7.7	10.3	-4.5	24.2

Sources: For detailed sources, see original, and footnote 81.

⁷⁹ Hearings, "Relationship of Prices to Economic Stability and Growth," Joint Economic Committee, 1958, p. 394.

⁸⁰ *Ibid.*, p. 401.

⁸¹ The Joint Economic Committee, "Relationship of Prices to Economic Stability and Growth," compendium of papers submitted by panelists, 1958, p. 317.

The above table illustrates some of the problems of the microeconomic approach. With the data, matrices may be made of the influence on prices, wages, or profits or changes in production at different levels of concentration. These matrices show that, for increases in production, price rises would be larger, but not uniformly so. For the same increases in production, larger increases in hourly earnings result in larger price rises, but not in a consistent fashion. Profit changes are most directly connected with increases in output, but numerous exceptions are found. Increases in production have a greater influence on price increases than the average level of concentration in manufacturing industries. Small production increases are associated with lower levels of concentration and large production increases are associated with higher levels of concentration. This explains why the incautious or determined will find with selected data an association between levels of concentration and price level changes.

Also impressive is the clustering of wage increases during the period at the 40- to 45-percent level, except for industries where production (sales) increases have been small. Where production increases have been lower, wage rises have also been smaller.

These data show that the many simple generalizations explaining recent price changes are subject to considerable reservation. Cost push does not explain price increases, because hourly wage increases and price increases have been smaller where production increases have been smaller. Administered prices do not explain price increases, since price increases are small even among concentrated industries where production increases have been small—for example, tobacco manufacturers.

In a study of rate of increase and straight time hourly earnings and changes in employment in durable and nondurable manufacturing, for the years 1947-57, Professor Eckstein finds a rise in employment in durables by 27 percent and in nondurables virtually no change. Yet the increase in wages was very similar. This suggests that the increase in wages in one segment of the economy tends to spread to other industries, even where the pressure on employers is not nearly so great. As others have noted, also, the increase according to Eckstein was larger in good times than in bad. Wages tend to rise more when employment rises and rise less when employment increases little or is shrinking. Eckstein also finds that wages tend to move up with consumer prices. The explanation of this, of course, may be that the rise of wages brings about higher consumer prices, and higher profit margins are also a stimulus to wage increases. Eckstein also notes a higher association between increases in productivity and a rise of wages, a rise associated with increasing investment in plant and equipment. Variations in productivity are very large, varying from 9.7 percent in 1950 to 0.4 in 1956 over a period of 10 years from 1948 to 1957. Obviously, wage movements do not move closely with productivity. Therefore, if there is a large rise of productivity, the net effect, despite a wage increase, may very well be declining prices; but where wages rise, despite small increases in productivity, prices tend to rise. When productivity rises by 9 or 10 percent, wage rates will not rise by a corresponding amount; but, when it increases by only less than one-half of 1 percent, wage rates will tend to continue to increase, though not as much as in the earlier years.⁸²

According to Dr. Hickman of the Brookings Institution, the large rise of demand for durable goods was especially accompanied by large increases in wages and prices. This held in the early postwar period and also in the years 1956-58. These wage increases were then spread, with a lag, to other industries. Hickman also claims that

⁸² Compendium, op. cit., pp. 364-369.

although the rise of wages was roughly similar in durable and non-durable goods industries, the increase in prices of materials was not. This may account for most of the contrasting amounts of average price increase. Hickman also claims that since labor lost some of its real income in the early postwar period when wages did not respond adequately to rising costs in the later period—that is, from 1945 to 1957—labor not only tried to make up for the losses in the earlier period but tried to increase its real income. He also claims that demand pressures were not nearly so great in 1956–57 as in the early postwar. And, rather than call the pressures a cost push, he would categorize them as bottlenecks, for then the connotation would be increased demand as well as increased costs in sectors where prices were rising rapidly.⁵³

RELATION OF PRICE MOVEMENTS AND OTHER VARIABLES

I examined the relevant variables to see if I could find any correlation, for example, between price rises and the distribution of manufacturing income. For the yearly aggregates I found no correlation, nor could I find in manufacturing any correlation between (1) compensation of employees as a percentage of manufacturing income, (2) corporate profits after taxes and unincorporated income as a percentage of income, and (3) corporate profits before taxes and unincorporated income as a percent of income in the years 1947–57 as functions of the manufacturing wholesale price level. Nor is there any clear correlation between the percentage change from year to year for the compensation of employees and price changes. Profits seem to be more clearly correlated with production level than they do with price changes, nor do we find any clear relationship in manufacturing between the excess of the percentage change in employee compensation over that of production and the percentage change in the wholesale price index for manufacturing. I also examined the percentage change from year to year of the excess of change in employee compensation over that of production and the percentage change of the wholesale price index for the years 1947–58. No close relationship is revealed, although, as might be expected, there is a very rough coincidence. We can conclude that yearly data do not indicate whether profits or wages have gained as a result of price increases. Perhaps one explanation of this fact is the cyclical nature of profits and the steady upward trend of wages and prices. In big boom years like 1947, 1950, and 1955, prices rise and profits gain relatively to wages. In more normal years like 1956, prices rise and profits decline relatively to wages.

I have also tried to compare for eight major industrial sectors of the economy the movements of compensation of employees—that is, wages, profits after taxes, and unincorporated income, profits before taxes and unincorporated income, and net interest for various periods from 1929 to 1958. This table is summarized below, and it suggests variations in the experience for different parts of the economy and also in different periods. For example, wages seem to have done very well when one compares 1929 and 1955–58, but profits seemed to do relatively well from 1938 to 1941 and from 1942 to 1945, though

⁵³ Hearings, Joint Economic Committee, "Relationship of Prices to Economic Stability and Growth," pp. 93–95.

in general, as we know, wages gained more than profits, taking all these periods together. But at least in one segment of the economy—for example, finance, insurance, and real estate—on the whole profits and interest have gained more than wages during most periods. This is clearly not true in manufacturing.

TABLE 10-2.—*Major gains by factors, various periods*

	1938-41 to 1942-45	1942-45 to 1946-49	1946-49 to 1950-54	1950-54 to 1955-58
Manufacturing.....	Wages.....	Profits.....	Wages.....	Wages.
Communications and public utilities.....	do.....	Wages.....	Profits.....	Profits.
Contract construction.....	do.....	Profits.....	Wages.....	Wages.
Mining.....	do.....	do.....	do.....	Do.
Services.....	Profits.....	Interest ¹	Interest ¹	Interest. ¹
Finance, insurance, and real estate.....	do.....	Wages.....	Profits.....	Do. ¹
Transportation.....	do.....	do.....	do.....	Wages.
Wholesale and retail trade.....	do.....	do.....	Wages.....	Do.

	1938-41 to 1955-58	1942-45 to 1955-58	1946-49 to 1955-58	1929 to 1955-58
Manufacturing.....	Wages.....	Wages.....	Wages.....	Wages.
Communications and public utilities.....	do.....	do.....	Profits.....	Do.
Contract construction.....	do.....	do.....	Wages.....	Do.
Mining.....	do.....	Profits.....	do.....	Do.
Services.....	Interest ¹	Interest ¹	Interest ¹	Do.
Finance, insurance, and real estate.....	Profits.....	Wages.....	Wages.....	Do.
Transportation.....	do.....	do.....	do.....	Do.
Wholesale and retail trade.....	Wages.....	do.....	do.....	Do.

¹ Although interest gained relative to the other 2 groups, wages gained relative to profits.

Source: Original figures, Department of Labor and Department of Commerce.

It is clear that wages, much more so than in the past, tend to lead in periods of rising prices. This is clear even, for example, by comparing the early postwar and the period since 1955. I consider also what happened in some of our recent major wars. In the Civil War, average hourly earnings rose one-third as much as the cost of living; in World War I, 1.4 times as much as the cost of living; and in World War II, they rose almost twice as much. These figures do suggest a trend toward a lead in wages over prices. But we must also allow for the fact that in World War II there was a considerable control of prices and, therefore, with the shortage of goods and price control, the large rise in wages vis-a-vis the increase in the cost of living may be misleading. To some extent the small rise in prices against the large increase in wages could suggest that the purchasing power of each dollar of wages had been cut because of the unavailability of supplies.

SOME HISTORICAL EVIDENCE

In his important study of real wages⁸⁴ Douglas considers the rise of money and real wages from 1889 to 1923. For example, he finds:

[1890-99=100]

	Relative production per wage earner	Average annual earnings per wage earner	Real average annual earnings
1889.....	100	100	99
1909.....	111	123	102
1919.....	113	276	111
1923.....	152	299	128

It will be noted that according to Douglas' figures, real wages did not rise as much as the relative production per wage earner. Douglas explained this in part by the decline in the purchasing power of manufactures.

At the time that Senator (then Professor) Douglas wrote, these figures marked a great advance in our knowledge of movements of real wage rates. Of course since then we have had more sophisticated approaches to this problem that take into account man-hour output as well as the input of labor and capital. At any rate, according to Douglas' figures, wages rose more than the cost of living during this period which on the whole was an inflationary period, but not as much as might be suggested by the rise of production. Here are the movements in the cost of living and real wages in a number of industries over several years from the Douglas study:

TABLE 10-3.—*Cost of living and real wages*

[1890-99=100]

	Cost of living	Manufac- turing	Transpor- tation	Clerical and lower salaried workers: Transporta- tion and man- ufacturing	Ministers	Teachers	Postal employ- ees	All groups
1890.....	104	101	98	88	99	87	95	100
1909.....	121	102	97	99	88	137	95	104
1919.....	247	111	109	80	64	118	68	100
1923.....	234	128	122	95	89	199	86	127

Source: Paul H. Douglas, *op. cit.*, pp. 33, 22, 23, 24.

In general, these statistics do suggest the varying rates of response to rising prices. Clerical workers, for example, actually experienced substantial reductions in their real income while the productivity of the Nation was rising. The same can be said for ministers and Federal Government employees who suffered severe reductions. The most striking rise was for teachers.

Undoubtedly the explanation in part is the varying rates of demand for the products of each group. This was a period of large increases

⁸⁴ See Paul H. Douglas, "The Movement of Real Wages and Its Economic Significance," *American Economic Review*, Supplement, March 1926.

in education, with the result that there was considerable bidding up of the prices paid to teachers. At this time State and local governments did not have the problems of finance that they have experienced in more recent years. The unavailability of resources for ministers explains in no small part the rather unsatisfactory state of their real wages. The Federal Government also was slow in adjusting wages of their employees. In general the white-collar workers, with the exception of the teachers, seemed to suffer during these years of inflation. Another interesting point is that a large part of the improvement in real income occurred from 1920 on, and during World War I there was also a substantial improvement. It was particularly since 1913 that the large advances in real earnings were made by the group as a whole, though even during this period some groups actually experienced a decline in their real earnings.

TEACHERS

In a more recent period teachers have tended to experience serious losses in periods of inflation. The explanation of this in no small part is the fact that local governments and even State governments have experienced serious financial problems. It is of interest that around 1900 city revenue was about five times as large as State revenue. The current situation is considerably different with both State and local governments obtaining roughly equal revenues. This tendency of local revenue to become much less important relatively is explained in part by the dependence on the general property tax, which responds tardily to rising prices and income. In his book, Paul Douglas showed that from 1890 to 1926 public school teachers' real wages rose by 72 percent as against a rise of 17 percent for factory workers and a loss of 1 percent for ministers. For annual wages (real) the increase was 114 percent for public school teachers: all industries, excluding farmers, 31 percent; ministers, 11 percent.⁸⁵ By 1926 the teacher was also a somewhat different commodity than in 1890, having had more and better training, and he was probably doing a better job.

In the inflation during World War II teachers' salaries lagged behind the gains of the rest of society. For example, in 1938-39 salaries before taxes were \$1,408 for teachers. By the end of the war they had risen to about \$2,000, but in 1935-39 dollars the decline had been from \$1,416 to \$1,270 in 1942-43, and an estimated increase to \$1,457 by 1945-46.⁸⁶ By 1946-47 the teachers in the smaller cities had obtained an increase of 48 percent as against the rise in the cost of living of 48 percent. From 1936-37 to 1946-47 salaries of teachers in the larger cities still lagged behind the cost of living.⁸⁷

Teachers of course were most unhappy even when their pay rose as much as the rise in the cost of living. Whereas other groups had gained substantially, the average teacher had experienced a substantial loss in real income at first, though by the end of the war had roughly regained their prewar position in real dollars.

⁸⁵ P. H. Douglas, "Real Wages in the United States, 1890-1926," 1930, pp. 130, 201, 203, 382, 386, 391.

⁸⁶ National Education Association Journal, December 1946.

⁸⁷ NEA Research Bulletin, February 1947.

But there were large differences among different groups of teachers and particularly the high-priced teachers experienced large relative losses. In general, the increase was largest in the smallest schools where pay had been very low. For example, in the State of New York in the common one-teacher school the rise from 1939 to 1946 was 45 percent; in cities of population of 100,000 and over, the increase was only 13.6.⁸⁸ In New York, representing the richest State, the increase in the war period was roughly about 20 percent; whereas for the whole country, the increase was about 40 percent.⁸⁹

Gradually, under the pressure of increased enrollments and relatively good organizations, the public school teachers were able to increase their pay after the war and to recoup a good part of their relative losses. For example, the Office of Education writes:

* * * When expressed in terms of 1955-56 dollars, however, the increases are not as large as they appear * * *. For example, the average annual salary for the continental United States in unadjusted (current) dollars rose from \$1,441 in 1939-40 to \$4,156 in 1955-56, an increase of 188 percent. When expressed in terms of 1955-56 dollars, the increase between 1939-40 and 1955-56 was only 50 percent. During the same 16-year period, the personal income per member of the labor force (in 1955-56 dollars) increased 76 percent * * *.⁹⁰

But this is not exactly a fair comparison because personal income includes not only income earned but also all other kinds of income and, therefore, the relative position of teachers is better than is indicated in this excerpt.

On the whole, the colleges have suffered more than the schools. This is partly due to the fact that the college faculties are not as well organized, and furthermore there is a degree of rapport between the schoolteachers and their local finance and tax authorities and the parents who want their children to get a good school education. One could, for example, go back to the days of President Eliot when he astounded the world by announcing that hereafter the professors at Harvard would be paid \$4,000. But the fact is that by 1959, when the average pay was \$16,000 for a professor and, therefore, there had been an increase of three times in the average pay, the situation was not as good as it seemed. Prices had risen by two times and, therefore, there was not a large gain in real income. Moreover, the per capita real income of the population had risen several times as much as the income of the average Harvard professor.

Even as late as 1955-56, a full professor at major private universities was receiving from 10 to 20 percent less in real dollars than he had received before the war. Since the average worker in our society has improved his position by about 50 percent, this suggests at that time the relative deterioration of at least 40 percent in the real position of the professors in top private institutions. Indeed, the losses to other members of the teaching fraternity were not quite so large, though in general there were very few who by 1955-56 were receiving larger real incomes than they had before the war. Indeed, to some extent, this was made up by an increase in fringe benefits and

⁸⁸ New York State Education, November 1946, pp. 137-139.

⁸⁹ See S. Rept. 323, "Federal Assistance to States in More Adequately Financing Public Education," 1943, p. 5.

⁹⁰ U.S. Department of Health, Education, and Welfare, Office of Education, "Statistics of State School Systems, 1955-56; Organization, Staff, Pupils, and Finances," 1959, p. 22.

also to some extent there was more outside work done by the average faculty member. Relative to the whole population, and the college teacher had suffered a serious reduction in his real income and part of the explanation, of course, was the inflation to which the response of revenue had not been adequate. The public universities tend to adjust to inflation through increased tax receipts, but slowly; and the private institutions more recently have tended to invest heavily in common stock as a protection against the rise of prices. But since endowment income only yields about 6 percent of total college income, this is not a very important contribution. What is required is, of course, large increases in appropriations by State legislatures and much higher tuition fees. But the colleges are frightened of large increases in tuition fees because they fear that the net result would be a change in the type of students.

PRODUCTIVITY, PRICES, AND WAGES

In general, over our history, the increase in real wages is associated with the rise of productivity, more so than with a rise of prices. In fact, there were long periods when prices did not contribute anything to the rise of the GNP. The increase in the GNP reflects rising productivity and increases in the population more than a rise in prices. The following, from Dr. Raymond Goldsmith, discusses this issue well:⁹¹

The largest variations in the average rate of change are shown by the price level, more specifically by the gross national product deflator which is a weighted average of the prices of all final goods and services produced. For the 120 years as a whole, prices have increased on the average at the rate of $1\frac{1}{2}$ percent per year, a rate which probably now would be regarded as within the range of price rise characterizing a "creeping inflation." Price trends in the first half of the period, when the average rate of change was virtually zero, differed considerably from those observed during the second half starting in 1899, during which the rise in prices averaged $2\frac{1}{2}$ percent per year, probably near the upper boundary of what is thought to be compatible with a creeping inflation. However, if subperiods of 40 years' duration are taken, prices advanced most rapidly from 1879 to 1919 when the rise averaged 1.9 percent per year rather than in the last 40 years, during which the average rise amounted to only 1.4 percent.

The result of these variations in rates of increase of total gross national product in current prices, in the price level, and in population is that the residual, the rate of growth in real national product per head, shows more stability within the range of $1\frac{1}{2}$ to $1\frac{3}{4}$ percent than any of the other three series. The contribution of the three factors—real output per head, population, and prices—to the average rate of growth of aggregate current output thus has differed greatly in the different periods.

For the entire 120 years population growth has accounted for two-fifths of the total increase in the monetary value of aggregate output; the rise in the price level for one-fourth; and intensive growth, the rise in real output per head, for one-third. In some of the subperiods the change in the price level has contributed nothing to the increase in aggregate gross national product at current prices, as for instance from 1839 to 1899; or has even offset part of the increase in population and intensive growth, e.g., from 1869 to 1899. There is no period during which the rise in the price level accounted for as much as one-half of the rate of growth in total current aggregate output. During the last 40 years the rise in the price level has been responsible for fully one-third of the rate of growth of current aggregate output, while population growth has contributed three-tenths and intensive growth almost two-fifths.

However wages respond to rising prices, the history of our economy in the last 68 years shows that real hourly earnings have tended to

⁹¹ Joint Economic Committee, hearings on "Employment, Growth and Price Levels. Pt. 2: Historical and Comparative Rates of Production, Productivity and Prices," p. 272.

rise substantially more than output per unit of labor and capital combined in the private domestic economy. The rise of real hourly earnings tended to be much larger from 1919 to 1957 relative to the increase of output per unit of labor and capital combined than from 1889 to 1919.

TABLE 10-4.—Average rates of increase in productivity, total input per man-hour, and real hourly earnings, 1889-1957

	Average annual percentage rate of change		
	1889-1957	1889-1919	1919-57
Output per unit of labor and capital combined, private domestic economy.....	1.7	1.3	2.1
Total input per man-hour, private domestic economy.....	.6	.7	.5
Real hourly earnings, private domestic economy, all workers (including proprietors and family workers).....	2.4	1.7	3.0
Real hourly earnings, manufacturing, wage earners.....	2.3	1.9	2.6

Source: Joint Economic Committee, hearings on "Employment, Growth, and Price Levels." Pt. 2, "Historical and Comparative Rates of Production, Productivity, and Prices," p. 322.

A table that indicates the trends in recent years, at least from 1948 to 1956, is presented below.

TABLE 10-5.—Indexes of labor and nonlabor payments per dollar of real product, prices real product per man-hour, employee compensation per hour in current and constant dollars, private nonagricultural sector of the economy, 1947-56

[1947=100]

	1948	1949	1950	1951	1952	1953	1954	1955	1956 ¹
1. Private nonagricultural product (current dollars).....	110.9	111.7	124.7	141.7	149.6	159.2	158.1	173.0	182.9
2. Employee compensation (current dollars).....	110.3	108.6	119.7	137.5	147.6	158.9	157.4	170.7	183.5
3. Wages and salaries (current dollars).....	110.5	108.5	118.7	135.8	145.9	156.9	154.9	167.7	180.3
4. Nonlabor payments (current dollars).....	111.7	115.8	131.0	147.3	152.3	159.7	159.0	176.0	182.1
5. Private nonagricultural real product (1956 constant prices).....	104.1	103.8	114.4	121.9	125.8	131.6	128.7	139.4	143.4
6. Employee compensation per dollars of real product.....	106.0	104.6	104.6	112.8	117.3	120.7	122.3	122.5	128.0
7. Wages and salaries per dollars of real product.....	106.1	104.5	103.8	111.4	116.0	119.2	120.3	120.3	123.7
8. Nonlabor payments per dollars of real product.....	107.3	111.6	114.5	120.8	121.1	121.4	123.5	126.3	127.0
9. Implicit price change—private nonagriculture.....	106.5	107.7	108.9	116.3	119.0	120.9	122.8	124.1	127.6
10. Man-hours of employees.....	101.4	96.8	101.0	106.6	108.3	110.9	106.3	111.1	113.7
11. Real product per employee-hour.....	102.7	107.2	113.3	114.4	116.2	118.7	121.1	125.5	126.1
12. Average hourly compensation.....	108.8	112.1	118.5	129.0	136.3	143.3	145.1	153.6	161.4
13. Average hourly wages and salaries.....	109.0	112.1	117.5	127.4	134.7	141.5	145.7	150.9	158.6
14. Consumer Price Index.....	107.6	106.6	107.6	116.2	118.8	119.8	120.2	119.9	121.7
15. Average hourly compensation in constant dollars.....	101.1	105.3	110.1	111.0	114.7	119.6	123.2	128.1	132.6
16. Average hourly wages and salaries in constant dollars.....	101.3	105.2	109.2	109.6	113.4	118.1	121.2	125.9	130.3

¹ Preliminary.

Source: Joint Economic Committee, "Productivity, Prices, and Incomes," 1957, p. 143; for the sources and comments, see the original.

This table reveals the following:

1. That employee compensation roughly corresponds to the dollar rise in private nonagricultural product. Nonlabor payments roughly rose just as much as wages and salaries. This suggests that the contribution of wages and salaries to rising prices is no greater relatively than the nonlabor payment, except that wages and salaries are a larger

part of the total payments. The real nongricultural product rose from 1948 to 1956 by 43 percent, but employee compensation per dollar of real product rose by 28 percent. This, of course, suggests an inflationary effect of employee compensation. Nonlabor payments per dollar of real product rose a little more than wages and salaries per dollar of real product. Where the real product per employee hour rose by 26 percent from 1948 to 1956, the average hourly compensation rose by 61 percent—another indication of the inflationary effects of rising wages. Average hourly compensation was up 61 percent; the Consumer Price Index up 22 percent—again suggesting a greater increase of wages than of prices. To some extent, of course, this is explained by the increase in productivity, though there also is involved some transfers from other groups to labor.

By 1951, the Consumer Price Index was up 16 percent, and average hourly wages and salaries 27 percent; but by 1956 the relative increases were 22 and 59 percent; suggesting the great degree of wage inflation from 1951 to 1956. By 1956, the rise of average hourly wages and salaries over 1948 was close to three times as large as that in the Consumer Price Index. It was noted before that in the first few years after the war, prices rose sharply and wages did not keep up with the increase in prices. Apparently one explanation of this rapid increase in unit property costs as against labor costs was the large consumption of capital during this period per unit of output.⁹²

It is clear by now that labor costs tend to rise faster than the price of output though there are great variations from period to period. For example, the staff of the Joint Economic Committee shows that the ratio of compensation of employees—

per unit of the GNP deflator rose from 1909 to 1915, fell until 1919, rose again to 1921, and then remained fairly stable or declined until 1929. The ratio rose sharply as prices fell from 1930 to 1932 and then fluctuated between the 1929 and 1932 ratio until 1941. In the war years, the ratio rose to a new peak which was followed by a decline until 1950. The next 3 years were marked by another rapid rise in the ratio which by 1956 exceeded the 1944-45 levels. In other words, wages tend to rise relatively as real wages tend to increase in periods of deflation and also in some periods of inflation. But it will be noted that this was not true from 1915 to 1919 nor in the early post-World War II period.⁹³

It is not easy to explain the changes in real hourly earnings in manufacturing in recent years.⁹⁴ Of the years 1945-46 to 1956-57, real hourly earnings in manufacturing declined in 1945-46 and 1946-47. This reduction could be explained both by the inflation of the period with the failure of wages to rise as rapidly as prices, as well as the fact that productivity experienced a substantial decline. The substantial rise in 1948-49, a recession year, of 4.8 percent in real hourly earnings in manufacturing as compared to an increase of productivity of 2.3 percent may again be explained in terms of the response of wages to falling activity. In 1949-50, wages did not rise as much as the productivity increase of 6.3 percent. Here again is a substantial inflation with resultant failure of wages to rise as much as productivity. In 1950-51, the continued inflation was reflected in a very small increase in real earnings—namely 0.5 percent. In most of

⁹² *Ibid.*, p. 12.

⁹³ *Ibid.*, p. 46.

⁹⁴ Compare, for example, "Employment Growth and Price Levels," hearings, pt. 2, p. 329.

the other years, up until 1956-57, the increase in real hourly earnings greatly exceeded the rise in output per unit of labor and capital combined. These on the whole were prosperous years, with the exception of 1953-54, and though productivity varied considerably, the general trend of real hourly earnings in manufacturing was distinctly upward. Here wages and inflationary policies undoubtedly played a part.

In a table published by Professor Fabricant based on work by Mr. Kendrick, of the National Bureau of Economic Research, the author presents some interesting trends from 1899 to 1953 on output, input, output per unit of total input, real hourly earnings, and price of product. I have analyzed this table and have brought together some excerpts from it in an attempt to look further into the relationship between real hourly earnings and output, productivity, and prices.

First, it is important to note the large differences among different industries—for example, manufacturing industries; and all these figures relate to 1899=100, and the figures are for 1953.

The extremes in manufacturing output were a rise in lumber, 128 percent, and electrical machinery, 6,264.

The extremes in productivity, that is, output per unit of input, were also large, though the differences were not nearly so large as in the total output.

Rubber, with output of 878, had the largest rise of productivity; namely, 778 percent; and lumber, with 177, a rise of 77 percent, had the smallest.

As might be expected, the prices of the product might reflect the varying increases of productivity. Rubber had declined in price during this period by 42 percent, whereas the price of lumber had increased by 961 percent. Actually, rubber had experienced an increase of output of 4,853 percent and a rise in productivity of 778 percent. A small increase in both output and of productivity in lumber is reflected in a relatively large rise of prices, just as the great increase of output and productivity in rubber is reflected in a very small increase in prices, or rather a net decline in prices.

In contrast to the large differences between the lowest and highest industry in the census classification for manufacturing, for price of product and productivity, the extremes of real hourly earnings in manufacturing were only from a 123-percent rise for miscellaneous manufacturing to a 305-percent rise for paper. Of course, these figures do suggest that wages in each industry are not primarily determined by productivity, for if they were the differences in real hourly earnings, or rather in the increase in real hourly earnings, would be much greater than is suggested by this table.

This table does suggest very large rises in real hourly earnings in 54 years. That means, of course, that hourly earnings rose much more than the price level. For the whole economy, there is a moderately close relationship between the rise of real hourly earnings and the output per unit of total input. But this relationship is anything but close among industries. I list a number of industries in the order of their increase in output from 1899 to 1953. The differences in the rise of real hourly earnings are substantial, but nowhere near as large as those in output per unit of input. Nor is there any evident relationship between the trends of prices of products and those of real hourly earnings by industries. The electric light and power industry experi-

enced the largest rise of output and the greatest gains of productivity and, as might be expected, a decline in prices since 1899. But the hourly earnings rose relatively little, namely, 189 percent. The gains of productivity are distributed among all industries, with wage trends not closely tied to the productivity gains of each industry.

TABLE 10-6.—*Output, real hourly earnings, output per unit of input, and prices, 1899-1953*

[1899=100]

Name of industry	Output	Real hourly earnings	Output per unit of input	Prices
Electric light and power.....	24, 550	289	1, 764	62
Electrical machinery.....	6, 264	332	338	276
Rubber products.....	4, 943	371	578	59
Leather products.....	185	366	198	432
Lumber products.....	128	334	177	1, 061
Anthracite coal.....	51	362	147	436

Source: Joint Economic Committee, hearings, "Employment, Growth, and Price Levels," pt. 2, pp. 336-337.

The anthracite coal industry, which actually experienced a reduction of output by about one-half in a period of 54 years, is an especially interesting case. Yet, and even though its productivity, i.e., output per unit of input, increased only by 47 percent, real hourly earnings were up by 262 percent, a rather large increase, and prices were up by 336 percent, a substantial rise as might be expected. These figures suggest, in part, that a strong trade union, despite a declining market and a rather slow rise of productivity, can achieve for its declining number of workers who can hold on to their jobs, a large increase in hourly earnings.

The extremes in real hourly earnings index from 1899 to 1953 were as follows (1899=100) :

Petroleum, coal products, manufactured.....	577
Mining, manufactured gas (public utilities).....	431
Mining, oil and gas.....	409
Manufactured paper.....	405
Electric light and power.....	289
Tobacco.....	276
Farming.....	247
Mining, metals.....	239
Beverages.....	224
Miscellaneous manufacturing.....	223
Mining, nonmetals.....	158

An indication of the lack of association between the rise of productivity and movement in real wages is given by the following table.

TABLE 10-7.—*Ratio, rise of real hourly earnings to the increase of the total output to the total input, 1899-1953*

1. Anthracite coal.....	5. 58
2. Lumber.....	3. 04
3. Petroleum coal products manufacturing.....	1. 94
4. Transportation equipment.....	. 59
5. Manufactured gas.....	. 34
6. Tobacco.....	. 34
7. Electric light and power.....	. 11

Source: Ibid. (my calculations).

As might be expected, especially where there has been relatively small rises of productivity, the gains of real earnings have been especially large in relation to that in productivity. Where the gains of productivity have been very large, the rise of earnings in relation to gains of productivity have been low. The variations in rise of hourly real earnings vis-a-vis that in productivity were as high as 50 to 1. There seemed to be, from this small sample, almost an inverse relationship, the greater the gain of productivity, the smaller the rise of real earnings versus that in productivity.

THE SHARE GOING TO LABOR

It is clear, from all kinds of statistics, that the rise of wage rates has exceeded the increase in man-hour output, and, moreover, the rise of wage rates has exceeded the increase in prices. Hence, if, on the average, productivity rises by 2 percent and prices rise a little more than 1 percent, then we may well expect an annual increase in hourly money earnings of about 3 percent, or an increase, say, of real earnings of 2 percent. Insofar as labor's share increases, the wage rise would exceed the gains suggested by rising productivity and prices. A rise of wage rates in excess of that in productivity suggests that wages lead the rise of prices and to that extent contributed to inflation.

If wages rise more than man-hour output and more than the percentage rise of man-hour output and prices, it might be expected that other shares in the national income might be squeezed. The evidence is that over the last few decades, this has actually happened. For example, Dean Bach writes:

Thus overall wage costs have risen somewhat more rapidly than selling price with the result that profits have been squeezed. Indeed, wages throughout the western industrial world seem to be increasingly mobile upward in many instances linked to rising prices through built-in escalator clauses * * *⁸⁵

In general, Dean Bach seems to believe that this trend will persist so long as the Government continues to guarantee fiscal and monetary policy that will make it possible for each group in society to demand higher income payments in dollars.⁸⁶

Professor Kendrick comes to somewhat similar conclusions. He finds that between 1919 and 1953 the gross private domestic product rose by 3.3 percent a year on the average in current prices in relation to the physical volume of resource inputs. The general level of product prices rose only 1.2 percent, however, and this is explained by an annual rise in the rate of total productivity of 2.1 percent. But it should be noted that the average hourly labor compensation in this period from 1919 to 1953 rose by 3.8 percent a year on the average, as compared with 1.9 percent for the annual increase in compensation per unit of capital input. The 1.8 percent increase largely reflects the rise in the price of capital goods, including land. Because the stock of capital per worker increased greatly during this period, it was possible for the average total compensation per man-hour, including all fringe benefits, to go up approximately twice as fast as the price of capital. Despite the declining input of labor, the large relative

⁸⁵ Joint Economic Committee, "The Relationship of Prices to Economic Stability and Growth," compendium of papers, 1958, p. 37.

⁸⁶ *Ibid.*, pp. 35-37.

increase in the price of labor made it possible for labor's share in the private domestic national economy to rise from 72 percent in 1919 to 79 percent in 1953.⁹⁷

It might be assumed that because wages rise more than prices and more than is justified by the increase in both prices and productivity that wages lead in the rise of prices and are responsible for the inflation. But aside from the problem of prices, which has been discussed briefly before, there are other and related considerations about which we should say a word. Dr. Ruth Mack, of the National Bureau of Economic Research, has put some of these issues very effectively. She shows, for example, that between 1947 and 1956-57 spot market prices fell by 10 percent of the 1947-49 average. Prices of crude materials rose by 16 percent, and prices of all manufactured goods rose by 34 percent. Labor costs increased about 15 percent of the 1947-49 average, or about as much as prices of crude materials. She seems to find a very vigorous response in prosperous periods to rising raw material prices and to the prices of the finished product, and some resistance to any fall in these prices when material prices tend to go downward.

What then is the explanation of the divergent trends? It does not lie primarily, of course, in bulging profits. Rather, must it be found in the increasing amounts of fabrication to which materials are submitted, increased marketing costs, increased administrative costs, costs of research, of insurance, of development. These shifts in productivity and cost structures thrive in the general atmosphere of the times. Many of the emphasized costs are of the overhead or burden type. There is a widespread belief that the strong output trend and demand is truly durable. This weakens usual fears of saddling a business with heavy overhead type costs * * *.⁹⁸

Other studies also show a tendency for employees to obtain a larger share of the national income. For example, the Joint Economic Committee, in one of its studies, shows that compensation for employees rose from 58 percent of national income in 1929 to almost 70 percent by 1956. Once allowances are made for the shifts in the relative importance of industries and legal forms of organization at different labor cost ratios, the rise of labor's share is greatly reduced.

* * * If one excludes the effects of such shifts and limits the comparison to changes in the relative share going to labor (and implicitly to property) within each of the component industries of the economy and different legal forms of organizations (corporate versus noncorporate), then the 12 percentage points increase in the labor share is reduced to less than 3 percentage points.

The Committee also finds that unit property costs rose about three-fourths between 1909 and 1955, as compared with a tripling of prices and an increase in unit labor costs of about $3\frac{3}{4}$ times the 1909 level. Within property costs (before taxes)—

capital consumption per unit rose about 69 percent between 1929 and 1955, compared to 27 percent for profits and other property income per unit, and about 36 percent for total property costs per unit * * *.⁹⁹

⁹⁷ Hearings, "The Relationship of Prices to Economic Stability and Growth," Joint Economic Committee, 1958, p. 99.

⁹⁸ See hearings, "Relationship of Prices and Economic Stability and Growth," pp. 130-131, and "Relationship of Prices and Economic Stability and Growth," compendium, pp. 269-284. Also see R.P. Mack, "Inflation and Quasi-Effective Changes in Costs," *Review of Economics and Statistics*, 1959, pp. 225-231. In his contribution to the same hearings, Professor Ruggles presented a somewhat similar position, particularly on the large rise of overhead and service costs. See hearings, *ibid.*, pp. 134-136.

⁹⁹ "Productivity, Prices and Income," 1957, pp. 10-11.

INFLATION AND DEPRECIATION

One aspect of the redistribution of income resulting from price movements should receive a little more attention. This is the problem that arises because of the fact that as prices rise, the depreciation fund set aside to replace capital and equipment, tends to be inadequate, and the cost of replacement of inventories increase. The set-aside are related to a price level at the time of purchase; but as prices rise, the resources available to replace the necessary machinery and equipment, are not to be had. In that sense businessmen perhaps believe their profits are higher than they in fact are.

Dean Bach has even stated that the underestimation of depreciation and inventory replacement costs, and the corresponding overstatement of profit costs, may induce business to produce more than they otherwise would. According to Bach:

Partial estimates suggest that this understatement of replacement costs may have approached one-third of corporate reported profits during the decade of the 1940's.¹

In a statement that I made for the Joint Committee on the Economic Report in hearings on corporate profits in 1948, I had this to say on the present issue. At that time, the problem was one of deciding what were high or low profits and, of course, the question of how profits should be estimated for taxes was relevant.

* * * Perhaps the most perplexing one (problem) relates to the valuation of assets. In a period of rising prices, inventories, and capital generally rise in value.

Higher values for inventories mean higher profits. But should inventories be revalued at replacement costs, then profits would be substantially reduced. Profits would have been \$6 billion less in 1946, or about one-seventh of the profits of this year prior to taxes.

In the same year, business depreciation charges were \$8.7 billion. It is clear that had depreciation been at replacement value, profits would have been less by several billion dollars additional. But the tax collector does not generally allow depreciation charges to cover replacement in periods of rising prices as against acquisition or book value.

I cannot enter into the merits of this debate. The accountants under pressure from business, are reconsidering the whole problem. It is well to remember also that with depreciation based on replacement value and with inventories carried at replacement value, if profits would be lower in periods of rising prices, they would be higher in periods of depressions and falling prices.

What business would gain now, they would lose in periods of depression * * *.²

At the same hearings, Professor Slichter took a somewhat different position. He thought that the inventory replacement would absorb a substantial part of the book profits. Assume a gain of \$100,000 from the sale of inventories as a result of higher selling prices. In Slichter's view, these \$100,000 would not be available for release to stockholders because they would have to be used to replace the inventories that had been sold. Similarly, he pointed out that with prices 100 percent above the 1940 level, the replacement of plant equipment would be at a much higher cost than was the price of acquisition. If we assume that the prices of the postwar would be at least 60 percent above prewar in the foreseeable future, then Professor Slichter would

¹ "Relationship of Prices to Economic Stability and Growth," compendium, p. 37.

² Hearings, Joint Committee on the Economic Report "Corporate Profits," 1948, p. 43.

have increased the depreciation charges by 60 percent above the 1940 level.³

Obviously, if prices are to continue to rise, as seems likely, and certainly seems much more likely than was generally assumed in the early postwar period, then to that extent, the profits of industry tend to be overstated. The tendency to allow accelerated depreciation since the above evidence was given, to some extent prevents the emergence of this difficulty. At any rate, it may be held in a general way that profits are a smaller part of the national income, and that once correction is made for the overstatement because of the inadequate allowances for replacement of inventories and equipment, then profits have suffered an additional loss.

This problem has also received attention in recent years, particularly by the Machine and Allied Products Institute. This organization shows that in 1955 the ratio of current prices to average prices underlying historical cost depreciation was about 1.31 compared to 1.38 shown by the study of the Department of Commerce.

The MAPI study also shows profits adjusted by reducing them by the amount of the additional depreciation required to shift from historical to current prices; by adding accelerated amortization in excess of depreciation otherwise allowable; and by adjusting for the effects on profits of changes in inventories values as estimated by the Department of Commerce. The effect of these shifts is to reduce profits by less than 1 percent on the average during the period 1925-29 and by about 25 percent for the average of the years 1946-55 * * *.

In a period of rapidly rising prices such as has prevailed in the last 15 years, the use of current replacement costs rather than original or historical cost in calculating the cost of fixed assets will have the effect of reducing the ratio of corporate profits to sale, to net worth, or to income originating * * *. Contrariwise when prices are falling, the use of current price depreciation will result in higher profits than if original cost depreciation were used. Which basis should be used in calculating depreciation has been and still is a matter of widespread debate * * *.⁴

In 1929 the ratio of current-year cost to original cost for structures and equipment in manufacturing establishments, was 1.17; in 1933 it was 0.92; by 1939, 1.09; for 1948, 1.58 and by 1955, 1.38.⁵

PRICES AND WAGES IN CYCLES

One of the striking developments in the last generation or so, has been an increased tendency for prices to be relatively rigid in the downward phase of the business cycle, and also for wages to be much more rigid. In earlier cycles, as the business situation deteriorated, wages would be cut sharply and prices would fall greatly. But now, whatever the reason, there seems to be a greater degree of stability. In fact, in periods of recession now, average hourly earnings tend to rise though not as much as in periods of prosperity.

Even before the war, this situation had become apparent. For example, here is a table based on Daniel Creamer's study.⁶

³ Ibid., pp. 5-7.

⁴ Joint Economic Committee, "Productivity, Prices and Incomes," 1957, p. 30.

⁵ Ibid., p. 99.

⁶ "Behavior of Wage Rates During Business Cycles," NBER occasional paper 34, 1950, p. 37.

TABLE 10-S.—*Average hourly earnings, prices and production in manufacturing, 1921-38*

Date of corresponding contractions	Percent change manufac- turing average hourly earnings	Wholesale prices of finished goods	Factory production
January 1920 to July 1921.....	-24.0	-15.1	-33.9
May 1923 to July 1924.....	-8	-7.6	-13.8
October 1926 to November 1927.....	-4	-7.4	-5.0
June 1929 to March 1933.....	-25.0	-36.9	-49.9
May 1937 to June 1938.....	-8	-10.7	-27.7

In the table that follows, I summarize the results of my study through three business cycles in the postwar period.

TABLE 10-9.—Changes in gross average hourly earnings (including overtime), wholesale prices, and production (seasonally adjusted), for selected industrial groups in 3 postwar recessions

	All manu- facturing	Durable goods	Nondur- able goods	Processed food	Textile products ¹	Apparel ¹	Paper and allied products	Chemicals and allied products	Primary metals	Finished steel products ²
November 1948 to October 1949:										
Average hourly earnings.....	0	0	\$0.03	\$0.07	-\$0.02	\$0.04	0	\$0.04	0	-\$0.05
Percent.....	-----	-----	2.3	-----	-----	-----	-----	-----	-----	-----
Wholesale prices (percent).....	-6.4	-3.1	-11.0	-14.1	-12.2	-12.2	-7.4	-13.9	(⁶) -25	1.1
Production (percent).....	-8.65	-16.82	-6	-3	-25	-10	-13	-8	-----	(⁶)
July 1953 to August 1954:										
Average hourly earnings.....	\$0.03	\$0.03	\$0.05	\$0.04	0	\$0.07	-\$0.01	\$0.01	\$0.09	\$0.13
Percent.....	-----	-----	3.1	-----	-----	-----	-----	-----	-----	-----
Wholesale prices (percent).....	1.7	1.6	-1.6	-8.1	-4.8	-4.8	-1.36	-7	(⁶) -25.9	-6
Production (percent).....	-10.79	-14.65	-7	-6	-20	-14	-7	-6	-----	(⁶)
July 1957 to April 1958:										
Average hourly earnings.....	\$0.06	\$0.07	\$0.05	\$0.05	\$0.01	0	\$0.02	\$0.02	\$0.15	\$0.17
Percent.....	2.9	3.2	2.7	-----	-----	-----	-----	-----	-----	-----
Wholesale prices (percent).....	2.4	-4	-6	-7	-2.8	-2.8	-4	-9	(⁶) -42	7.7
Production (percent).....	-14.09	-21.56	-6	-4	-13	-15	-9	-5	-----	(⁶)
	Primary nonferrous refinery shapes ³	Nonferrous mill shapes ⁴	Fabricated metal products ⁵		Nonelectrical machinery	Electrical machinery	Transport equipment	Automobiles, trucks, and parts	Bituminous coal	
			Structural	Nonstruc- tural						
November 1948 to October 1949:										
Average hourly earnings.....	-\$0.03	-\$0.03	0	0	\$0.07	0	\$0.03	0	-\$0.07	
Wholesale prices (percent).....	-30.3	-12.0	-8.0	-1.8	(⁷) -23	-5.8	(⁶) -13	-1.9	-7.7	
Production (percent).....	(⁶)	(⁶)	-15	-----	-----	-13	-----	-16	-39	
July 1953 to August 1954:										
Average hourly earnings.....	\$0.05	\$0.05	\$0.03	\$0.03	\$0.09	\$0.05	\$0.05	\$0.11	-\$0.01	
Wholesale prices (percent).....	-12.5	-2.3	-1.7	-1.5	(⁷) -18	-1.3	(⁶) -20	-1.2	-12.4	
Production (percent).....	(⁶)	(⁶)	-15	-----	-----	-20	-----	-35	-33	
July 1957 to April 1958:										
Average hourly earnings.....	\$0.13	\$0.16	\$0.05	\$0.05	\$0.11	\$0.09	\$0.10	\$0.13	\$0.07	
Wholesale prices (percent).....	-25.9	-14.7	-1.8	-1.4	(⁷) -23	4.4	(⁶) -21	9.9	-4.2	
Production (percent).....	(⁶)	(⁶)	-16	-----	-----	-23	-----	-59	-31	

¹ The prices given are for textile products and apparel combined.² Average hourly earnings figures are for blast furnaces, steel works, and rolling mills.³ Average hourly earnings figures are for primary smelting and refining of nonferrous metals.⁴ Average hourly earnings figures are for rolling, drawing, and alloying of nonferrous metals.⁵ As noted in the table, 2 price figures are given, for "structural" and for "nonstructural" fabricated metal products.⁶ Not available.⁷ BLS has no composite index for nonelectrical machinery prices. See table 11-2, for the movements of prices of 5 subgroups of nonelectrical machinery prices. They indicate smaller declines or bigger price rises in each succeeding recession. Prices for all 5 groups rose, 1957-58.

Source of series: Monthly Labor Review and Federal Reserve Bulletin.

It will be noted that in the 1948-49 cycle, manufacturing prices did fall by 6.4 percent for all manufacturing; but average hourly earnings did not change at all. In the 1953-54 recession, average hourly earnings rose by 1.7 percent while wholesale prices declined by 0.8 percent; in the 1957-58 recession, average hourly earnings actually rose by 6 cents or 2.9 percent, and wholesale prices also rose by 2.4 percent despite a decline in production of 14 percent. Variations on this theme are to be found in different industries and where the industries approach the raw material stage, there is a greater tendency for prices to fall, though even in these cases wages tend to stay up and actually increase in the more recent recessions. Obviously, if there is little change in prices, or if prices rise somewhat, and wages rise even more, it follows that even in periods of recession there is a substantial gain of real wages. Indeed, the rise is smaller than in periods of prosperity.

The most marked deviation from earlier cyclical behavior has taken place in primary metals, machinery, automobiles, and transportation groups; that is, in the heavy durable industries and in coal. In these industries, the average hourly earnings have gone up more in each successive decline beginning with a steady level in the 1949 recession and increasing at most among these groups by about 5 to 10 cents in the 1953-54 recession and 10 to 15 cents in the average hourly earnings in the 1958 recession. Prices also tend to rise more and decline less in these groups with the exception of nonferrous metals, prices of which are tied to world primary market price to a large extent. In each succeeding postwar cycle, our production has tended to fall more. Prices and wages in the metals and machinery group, excluding automobiles, have risen more than most groups in the boom periods of the postwar cycles. Prices, especially in the metals, machinery, and oil groups, have risen far more than average, but production has not.

In steel there seems to be a tendency for profits after taxes as a percentage of sales to rise since 1939. These, of course, include some 4 years when profits were kept under control through price fixing. In 1950 with operating rate at 96.9 percent of capacity, profits in relation to sales were 8.1 percent. This high level, of course, reflects the speculative influence of the breakout of the Korean war. What is also of some interest is that from 1952 on, there was a steady rise in the profits after taxes as a percentage of sales. Beginning with 1952, the figures were 5, 5.6, 6, 7.8, and 7.3 in successive years through 1956. In these 5 years, the operating rate was 86, 95, 71, 93, and 90 percent of capacity. Even at 71 percent of capacity, profits had risen from 5.6 to 6 percent even though in that year operating rate as a percentage of capacity had fallen from 95 in 1953 to 71 percent in 1954. In these 5 years, the employment costs—percent of total—varied from a maximum of 36.7 in 1954 to a minimum of 32.3 in 1951.⁷

For five nondurable groups for which I have statistics, there does not seem to be any consistent tendency for hourly wages to rise more and more in recent recessions since World War II, but in these industries also prices have tended to fall less in each succeeding cycle, or they have risen in each cycle.

In his study⁸ Dr. Geoffrey Moore also shows a tendency for fluctua-

⁷ See hearings, "Relation to Prices to Economic Stability and Growth," p. 703.

⁸ National Bureau of Economic Research, "Measuring Recessions," 1958.

tions to be less in more recent cycles than before the war. Not only does industrial production tend to fall less, but personal income stays up remarkably well. This is explained partly by the tendency of wage rates to stay up or even to increase and also by the fact that transfer payments play a much larger part and these tend to increase in the decline of the cycle.⁹ As might be expected, therefore, the personal income falls much less than GNP.¹⁰

According to Hultgren's studies, the following conclusions are suggested—

* * * The most rapid rates of increase in output per man-hour appear during that portion of the business cycle—the last stages of contraction and the early stages of expansion—when replacement, increase of plant and equipment are proceeding most slowly; and that during the initial stages of contraction, decline in output per man-hour joins with increasing wage rates to push unit labor costs up.¹¹

CONCLUSION

One of the most discussed problems in recent years has been what causes inflation. A viewpoint that attracts increasing numbers of adherents is that inflation is more a cost-push than the old classical excess-demand type of inflation that the monetary authority is able to treat with some effectiveness. If this interpretation is correct, then it follows that labor and other cost factors improve their position under modern inflation: their rewards exceed and lead the rise of prices. Others are squeezed. In one sense even this kind of inflation may be called an excess demand inflation; for its progress can be halted and output affected by curtailment of monetary supplies.

In inflationary periods experience of industries varies greatly. In some, wages seem to gain absolutely and relatively, but in others, for example, services, capital seem to gain. It has also been noted that prices rise and wages gain especially when production expands greatly. In these industries profits may also greatly rise when prices are administered. In the long run this conclusion of the relation of production and prices is not so clear.

Much historical evidence exists to show that the trend is toward wages leading in the wage-price inflation. War experiences in three major wars are evidence of this point. But a long historical survey such as revealed in Professor Paul H. Douglas' classic study reveals varying responses to rising prices. Over a period of 30–40 years, real wages in manufacturing rose substantially, as they did for transport workers and teachers, but Government workers, ministers, and clerical and lower salaried workers experienced deterioration in their standard of living.

These figures do suggest that much depends upon the market for the product and institutional factors. The large gains of teachers in the generation before the great depression suggest great strides of education and public financing which had not yet experienced the impact of inelasticities of real estate taxes. In contrast the difficulties of teachers in the more recent inflation period are to be associated, despite the unusual growth of demand, with weakness in financing methods.

⁹ *Ibid.*, 268–269.

¹⁰ *Cf.* p. 287.

¹¹ Hearings, Joint Economic Committee, "Employment Growth and Price Levels," pt. 2, p. 306.

In general, the rise of wages over the last 60 years or so has exceeded that of productivity, and the combined rise of productivity and of prices, suggesting relative gains of wages against property income. Part of these gains are associated with the changing structure of industry; that is, gains for those employments where labor especially profits. These improvements have not been uniform, however. There were periods when labor lost as well as gained. But more recent movements suggest consistent gains for labor, exclusive of early post World War II. In a depression period, wage rates increasingly tend to fall less or even rise as prices fall. Hence gains may be substantial in depression periods. But increased rigidity of prices tends to rob workers of gains in such periods in recent years and, of course, they lose jobs.

Over long periods of time one finds little association between wage movements and productivity in individual industries. In fact, the largest gains in real earnings seem often to come to those industries which have experienced the smallest gains in output and productivity, e.g., lumber and anthracite coal, and the smallest gains to workers in those industries where output and productivity rose a maximum, e.g., electric light and power. For example, the real hourly earnings in anthracite coal rose 5.58 times as much as productivity from 1899 to 1953, whereas in electric light and power the increase was 0.11 percent as much as that in productivity—a 50 to 1 relative advantage for anthracite coal.

In general, the wage share in total income tends to rise. This is often held to be part of the explanation of the inflation. But Dr. Ruth Mack and Professor Ruggles have also stressed the rise of other costs and the increased outlays on marketing, administration, research, and the like.

The gains of labor are also associated with the much larger increase in supplies of capital than of labor and hence the depressing influence of rises in supply of capital on property income.

In periods of rising prices, profits are lower than they seem to be, for replacement costs of inventories and plant and equipment exceed acquisition costs on the basis of which depreciation is measured. One estimate put replacement costs of structure and equipment in manufacturing industries at 1.58 of acquisition costs in 1948 and 1.38 in 1955.

CHAPTER 11. ATTEMPTS TO BEAT INFLATION

Increasingly the public is aware of the dangers of inflation. Government officials and others proclaim the probability that creeping inflation will result in galloping inflation, thus tending to encourage the use of protective devices against inflation. It would be well if the Government instead of proclaiming the dangers of inflation would bring to the attention of the public that over a period of 120 years the rise of prices averaged a little more than 1 percent. But whatever the explanation, there is an increased tendency to take measures to protect against inflation. This is evident, for example, in the large rise in the stock market, and the desertion of the Government bond market in recent years. It is also evident in the doubling in the number protected by cost-of-living escalator clauses in wage contracts since 1955. According to the Department of Labor, they now cover

more than 4 million workers. Long ago Irving Fisher suggested that bonds be issued with an escalator clause to protect against inflation. In fact, he headed a corporation which used this form of financing. I also earlier suggested the wisdom of using an escalator clause in payments of benefits to the old.

Indeed, a general use of escalator clauses would be dangerous. The result would be that instead of a lag of some prices behind the general inflation inclusive of income payments, these would immediately react to an inflation and therefore tend to aggravate the inflation. But a judicious use of escalator clauses in limited markets, where the cost of inflation is the greatest, might well be justified.

It should also be noted that any attempt to escape the effects of inflation through the purchase of equities is also subject to some reservations. The more people buy common stock in order to protect against rising prices, the higher common stock prices will rise and, therefore, the return will tend to be reduced. This was clearly evident by 1959 when the yield on common stock declined substantially below that on bonds. In fact, when the Government issues a 5-year note paying 5 percent, as it did in 1959, the investor who wants to protect himself against inflation achieves substantial security. It can be argued, for example, that the investor seeking the maximum return would expect to get a 2-percent additional return on fixed income yielding assets to match the annual 2 percent inflation, say, anticipated. A bondholder should receive 2 percent additional return to offset the anticipated inflation and in addition be compensated for the greater gains accruing to holders of equities because corporations are run on their behalf. In corporate finance the stockholder is the one who profits most from corporate management, not the bondholder. With rising prices and profits, the latter in part associated with rising prices, the gains would probably go largely to those who hold equities. Hence if stocks yield, say, 2 percent at present high values, then the bondholder might well expect a return of at least 5 percent in order to make up for the advantages of those who are especially protected by the directors and management of corporations and to offset the effects of inflation.

In an interesting study the First National City Bank tries to show what the effects of different kinds of investments would be upon the value in current dollars, and purchasing power of varying kinds of investment ¹² in 1948 dollars.

¹² First National City Bank Monthly Letter, "Business and Economic Conditions," April 1959, p. 46.

TABLE 11-1.—*Changes in the nominal value of various types of investments, 1948-58, in current dollars and in dollars of 1948 purchasing power*

	Nominal value		Percent change in nominal value	Percent change in 1948 dollars
	Dec. 31, 1948	Dec. 31, 1958		
Cash.....	\$100.00	\$100.00	-----	-16.7
Bonds:				
U.S. Treasury 2½s of 12/15/67-72.....	100.15	85.20	-14.9	-29.1
New York City 4s of 10/1/80.....	124.25	102.00	-17.9	-31.6
State of New York 1½s of 3/15/85.....	86.53	66.80	-22.8	-35.7
Preferred stock average, (Standard & Poor's).....	169.50	151.70	-10.5	-25.4
Common stocks, averages (Standard & Poor's):				
Railroads.....	13.92	34.39	+147.1	+105.8
Industrials.....	15.12	58.97	+290.0	+224.9
Public utilities.....	16.04	43.23	+169.8	+124.8
Fire insurance.....	13.05	34.30	+162.8	+118.9
New York City banks.....	11.18	24.25	+116.9	+80.7
Real estate:				
Selling price, typical 1-family residence ¹	\$14,231	\$17,220	+21.0	+0.8
Farm real estate, Department of Agriculture index (1947-49=100).....	106	163	+53.8	+28.1

¹ Computed from Roy C. Wenzlick & Co., "The Real Estate Analyst."

For example, in 1948 dollars these investments of 1948 in 1958 would be worth as follows:

If invested in—

Cash.....	-16.7 percent.
U.S. Treasury 2½s for 1967-72.....	-29 percent.
New York City 4s of October 1980.....	-32 percent.
State of New York 1½s of March 1985.....	-36 percent.
Preferred stock.....	-25 percent.
Common stocks:	
Railroads.....	+106 percent.
Industrials.....	+225 percent.
Public utilities.....	+125 percent.
Private insurance companies.....	+19 percent.
New York City banks.....	+81 percent.
Typical one-family residences.....	slight gain in real selling price.
Farm real estate.....	+28.1 percent in selling price, stable dollars.

The First National City Bank then goes on to explain the difficulties of purchasing common stocks that yield these returns, for these are only averages. Similarly with houses, which of course may depreciate in value as well as rise, even though the average may be worth more after 10 years in dollars of stable purchasing power.

It took 16 of the 30 stocks presently in the Dow-Jones industrial average more than 20 years to get back up to 1929 highs—and 4 of the stocks still haven't made it.

The bank also points out that some common stock declines have occurred in periods of rising consumer prices.¹³

¹³ Ibid., p. 46.

TABLE 11-2.—*Some common stock declines since 1900 versus Consumer Price Index*

Period	Stock prices, percent change	Consumer prices, percent change	Interval to recover stock price high (months)
June 1901 to November 1903.....	-46	+6	45
January 1906 to November 1907.....	-49	+7	128
November 1916 to December 1917.....	-40	+19	32
November 1919 to August 1921.....	-47	-4	61
September 1929 to November 1929.....	-48	-0.4	302
April 1930 to July 1932.....	-86	-20	287
March 1937 to March 1938.....	-49	-1	105
October 1939 to April 1942.....	-40	+15	63
May 1946 to June 1949.....	-24	+29	47
April 1956 to October 1957.....	-19	+5	29

Source: November 1957 Journal of Insurance—except for the last 2 periods which are our own computations.

What is more, if one invests in stock yielding $2\frac{1}{2}$ percent, it may take a considerable period of time to make up for the return that might be had in more normal periods on stocks or other investments.

If, for example, one purchases stock yielding $2\frac{1}{2}$ percent and assumes the rate of annual dividend to increase 3 percent, it would take $23\frac{1}{2}$ years to achieve a return of 5 percent. If we assume the annual dividend increase is 5 percent, it would take 18 years to achieve a return equal to 6 percent. Considering the return on capital stock one must also remember that there is a 25-percent capital gains tax if the stocks are sold.

The inflation is, of course, a serious matter for any organization or for any business that cannot increase its receipts as fast as its expenses increase. This is particularly true, for example, of the average college. Costs rise because the college has to pay increased prices for material and services even though it does not profit from the increase in productivity that, for example, business firms very often experience. The service the college provides is often a matter of individual attention between the teacher and the student, or between the teacher and the student in relatively small groups. Here automation does little good, though sometimes college administrators underestimate the possibilities. Because they are determined to keep tuition down in order not to penalize poor students, college administrators experience financial difficulties as they find their expenses rising 5 percent a year, say, and without offsetting productivity, and their revenues do not respond to the inflation. Government appropriations, tuition income, gifts, and endowment income tend to lag, and specially when enrollment is rising.

To some extent they try to deal with this problem by investing in common stock insofar as they have funds to invest. It must be remembered that a relatively small number of colleges have resources to invest in common stock or any other investments. In fact, since the beginning of the century the return on investments has declined from about 25 percent of the income of institutions of higher learning to about 5 percent today. This reduction is the result not only of inflation, though I estimated recently a loss of \$1 billion since the prewar or about one-third as a result of inflation. Endowment income plays a smaller part also because incomes have risen from other sources as enrollment has risen.

Those colleges that depend upon endowment have tended to move into common stock to protect against the inflation. Of course, one result is that they tend to get lower returns on their investments, especially when they move into growth stocks. There are certain disadvantages in moving into growth stocks for colleges because they tend, therefore, to favor later generations when presumably higher incomes will be available rather than the present generation which is having difficulties of its own. The objective of purchasing growth stocks is of course to obtain higher returns on investments in the long run. Unless bonds yield, say, 2 percent more than stocks to offset inflationary trends and, say, 3 percent additional reflecting growth, the case for bonds is weak indeed. Yet the colleges have been slow to move into common stock. For example, in 1926 institutions of higher learning had about 9 percent of their funds in common stock; by 1933, partly to take advantage of bargains that could be had in common stock, the amount had risen to almost 13 percent. Even by 1947, according to one study, only 30 percent was in common stock and the most recent figure suggests 50 to 60 percent in common stock. It should be noted that the major part of the increase in investments in common stock has been not the result of going out to purchase more common stock but the continued rise in their value.¹⁴

This tendency to protect against inflation is, of course, also evident in the holdings of stock by other institutions. For example, the Fund for the Republic report shows that according to a stock exchange estimate, institutional holdings of stock in 1949 were \$76 billion and in 1957, \$196 billion, or an increase of 12.4 percent of the total outstanding to 15.3 percent. The largest relative increases were by investment companies, open-end, with an increase of 379 percent, and non-insured pension funds from \$0.5 to \$5.7 billion, or 1,140 percent. This can, however, be only a rough estimate for the figure given for college and university endowments of \$2.4 billion in 1957 seems excessive on all counts. Financial intermediaries, that is commercial banks, mutual savings, private life insurance companies, etc., do not seem to have increased their holdings in recent years. In 1939 they held \$22.2 billion and in 1957, \$20.5 billion.¹⁵

What is striking is the large proportion of net purchases of common stock by institutions. Apparently in 1954 they purchased \$1,520 million net as against \$120 million by foreigners and \$460 million by domestic individuals. In other words, they purchased about 3½ times as much as domestic individuals though their total holdings in 1949-57 was 12 to 15 percent.¹⁶ These figures do point to an increased tendency for institutions, so far as they are not restricted by legal provisions, to protect themselves against inflation by purchasing equities.

¹⁴ See especially J. H. Cain, "What Is Happening to College and University Investment and Income?" American Council on Education Study, June 1941, p. 30; J. I. Kirkpatrick, "A Study of University Endowment Funds," 1947, p. 41; The Boston Fund, "A Study of the College and University Endowment Fund," June 30, 1956; Vance, Sanders & Co., "Brevits," vol. X, No. 21: Barron's, June 17, 1957; also my forthcoming book on "The Economics of Higher Education."

¹⁵ R. Tilove, "Pension Funds and Economic Freedom," a report to the Fund for the Republic, pp. 38 and 40.

¹⁶ Ibid., p. 43.

CHAPTER 12. SOME INTERNATIONAL ASPECTS

It is well known that in 1958-59 the United States experienced a drastic reversal in its trade or its balance of payments position. From 1950 to 1957 foreigners acquired short-term claims of \$10.3 billion on the United States, but they only converted \$2.6 billion into gold. But in 1958 total accumulation of foreigners was \$2.3 billion of our gold and \$1.3 billion additional of short-term dollar assets. In other words, whereas in the preceding 7 years they had taken only about one-quarter of their dollar assets in gold; in 1958 they took more than two-thirds. This suggests that the large outflow of gold and the accumulation of dollars by foreigners by 1958 reflects some doubts on the dollar.

Actually, foreign countries have been building up their gold and dollar balances since 1950. From 1950 to 1958 U.S. gold sales amounted to \$3,712 million and foreign banks and official institutions increased their dollar holdings by \$7.5 billion or total losses of \$11 billion, an average of \$1.2 billion per year. Only in 1957 was this movement reversed, and this resulted in part from the Suez crisis.¹⁷

It is a matter of common knowledge that rising prices in one country not offset by rising prices elsewhere would tend to result in reduced exports and in increased imports for the country that experiences the larger rise of prices. It is not, therefore, surprising that Chairman Martin of the Federal Reserve Board and others have brought home the point that if our balance of payments is not to deteriorate further it is important to stop the inflation. In other words, inflation in this country is held responsible for the adverse balance of payments of the United States.

In an analysis of the situation by GATT,¹⁸ the conclusion was drawn that rising manufactured prices in the United States had helped contribute toward the decline in the exports of the United States. The point was also made that the leveling off of activity in other industrial countries resulted in a large fall of exports of crude materials, fuels, and metals from the United States. And when the recession came, there was not the expected drop in prices that generally accompanies a recession. In other words, an inflation may be more costly in international position these days because prices seem to respond less than they have in the past in recession periods. Hence, as exports fall and imports rise and gold leaves the country, the usual price correctives may not operate. Particularly where prices are largely administered, the effect is likely to be a greater stability of prices and, therefore, a failure to get the downward adjustments of prices that are expected from a loss of gold and dollars to foreign interests.

The GATT report concludes as follows:

* * * In view of such factors as the influence of commodity composition on the unit-value index, the long-term structural changes, and the fact that some markets were hit more severely by the recession than others, the evidence seems to be insufficient to claim that the price development in the United States is the single most important cause of the relative and absolute decline in the country's exports of manufactured goods. Nevertheless, the United States has lost much of the superiority it had in productivity during the years immediately following

¹⁷ Joint Economics Committee, hearings on "Employment, Growth, and Price Levels, Pt. 5: International Influences on the American Economy," 1959, p. 967.

¹⁸ "International Trade, 1957-58," July 1959, pp. 107-108.

the Second World War, while, at the same time, Western Europe and Japan have greatly improved their ability to deliver promptly all kinds of manufactured goods. Prices, therefore, play a more important role than hitherto, and U.S. exports are, consequently, more sensitive to rises in labor costs than had been the case earlier.

With 1953 as 100, the report concludes that unit-value indexes of exports of manufactured goods in the United States was 113 in 1958, 107 for Canada, 110 for United Kingdom, 103 for Germany, 99 for France, 101 for Italy, and 94 for Japan.¹⁹ These figures do, indeed, suggest a deterioration of competitive position to some extent.

Bernstein has shown, however, that U.S. exports as a percentage of world exports stayed up well, with the figure fluctuating from 17.7 percent in 1950, a minimum of 17 percent in 1953 and 1954 and a maximum of 19.9 percent in 1957, and a decline to 17.2 percent in 1958, a reduction he explains by special circumstances.²⁰

But this position may be carried too far also. Should one take the whole postwar period, one would find that the price history of the United States is considerably better than that of most of its competitors. For example, here is a table which gives the prices in the United States and other countries in 1948-57 and 1953-57:

TABLE 12-1.—Comparison of domestic inflations, autumn, 1957

	1948=100			1953=100	
	Whole-sale prices	Cost of living		Whole-sale prices	Cost of living
Chile.....	1,880	1,650	Chile.....	696	636
Argentina.....		590	Brazil.....	195	212
Indonesia.....		347	Argentina.....		182
Brazil.....	372	342	Indonesia.....		163
Japan.....	291	195	Colombia.....	160	140
Peru.....	274	209	Peru.....	136	127
Colombia.....		206	Mexico.....	135	143
Mexico.....	205	200	France.....	119	111
Australia.....	204	201	Sweden.....	108	113
France.....	183	185	Australia.....	108	113
United Kingdom.....	159	153	United Kingdom.....	107	118
Sweden.....	150	147	Netherlands.....	107	117
Netherlands.....	143	152	United States.....	107	106
West Germany.....	117	117	Belgium.....	106	109
Canada.....	115	127	Denmark.....	105	113
Belgium.....	113	115	Japan.....	105	111
United States.....	113	118	West Germany.....	105	108
India.....	108	115	Switzerland.....	105	107
Switzerland.....	103	111	Italy.....	103	114
Philippines ¹	103	104	Canada.....	101	107
Italy.....	99	132	India.....	101	106
Venezuela.....	97	120	Philippines.....	101	106
Cuba.....		90	Cuba.....	100	97
			Venezuela.....	99	102

¹ 1950=100.

Source: Joint Economic Committee, "The Relationship of Prices to Economic Stability and Growth," compendium, 1958, p. 289.

This table does show in general that price history in the United States has been more than satisfactory as compared to its major rivals. Indeed, this table does not give all the facts because we have to take into account what happened to exchange rates. If a country doubles

¹⁹ *Ibid.*, pp. 107-108.

²⁰ Joint Economic Committee, hearings on "Employment, Growth, and Price Levels. Pt. 5: International Influences on the American Economy," 1959, p. 966.

its prices and then cuts the value of its currency by 50 percent, the net export capacity should not be greatly influenced. But actually the depreciation or devaluation of exchanges has tended to lag behind the rise of prices and particularly since 1953. What is more, where a devaluation has tended to anticipate or come before a rise of prices in the period of high employment and elastic monetary supplies of the postwar, it was not long before prices became quickly adjusted to the fall in the exchange rate.²¹

Even from 1955 to 1958 the increase in wholesale price in the United States was not greatly out of line. The rise was 3 percent for the United States, 1 percent for Europe, 8 percent for the United Kingdom, 5 percent for Germany, 2 percent for Italy, and 3 percent for France, and no change for Japan. In the export area the increase from 1955 to 1958 was 6 percent for the United States, 1 percent for Europe, 8 percent for the United Kingdom, 3 percent for Italy, and 2 percent for France.²²

It is also well to remember that up until recently the United States had a very important competitive advantage over other countries. Most other countries had been seriously damaged by the war, whereas our economy had become more productive. It would be expected that gradually as these countries recovered, their competitive position would improve vis-a-vis the United States. The major explanation of the reversal of gold movements recently is not the inflation in the United States but rather the fact that our competitors are catching up in productivity, partly as the result of help given by the United States through various aid programs. We would therefore expect that the U.S. position in international trade would deteriorate to some extent, but still would be considerably better than it had been, say in 1938. For example, here are some statistics on this point which show that with 1938 as 100, the U.S. export trade had reached in volume 200 by 1948, as against 77 for other countries. Then there was a gradual deterioration, relatively speaking, to 207 for the United States and 110 for other countries in 1951. By 1956 the figures were 255 for the United States and 147 for other countries. By the second quarter of 1957, the figures were 261 and 156, respectively; and by the second quarter of 1958, 230 and 161, respectively.²³

The Common Market in Europe may well result in further losses of competitive position for the United States, although how much will depend upon the rise of productivity in these countries and the extent to which this improvement is taken in reduced prices and how much through higher wages.²⁴

²¹ Harris, S. E., "International and Interregional Economics," 1957, ch. 25.

²² Figures from IMF, "International Financial Statistics," April 1959.

²³ GATT, "International Trade, 1957-58," p. 6.

²⁴ Joint Economic Committee, hearings on "Employment, Growth, and Price Levels. Pt. 5: International Influences on the American Economy," 1959, pp. 1033-1037 and 1048-1051 for interesting remarks by Messrs. Despres and Scitovsky on the effects of the Common Market.

Here is the trend of trade from 1955 to 1958:

TABLE 12-2.—*North America's trade in manufactures and total, 1955-58*

[In billions]

	Total manufactures		Grand total	
	Exports	Imports	Exports	Imports
1955.....	\$8.86	\$5.77	\$17.55	\$15.64
1956.....	10.14	6.88	21.01	17.75
1957.....	11.20	7.07	23.36	18.18
1958.....	10.40	7.14	20.33	17.49

Source: "International Trade, 1957-58," pp. 100-101.

Striking is the very large decline of about \$3 billion in exports in 1958 and reduction of imports of only \$0.7 billion.

The situation has continued to deteriorate in the first half of 1959. In the year 1958, the increase in foreign gold and liquid dollar assets at the expense of the United States was roughly \$3.4 billion, and this figure reflects the adverse balance of payments of the United States. In the first quarter of 1959 the loss was almost \$900 million and in the second quarter almost \$1 billion.²⁵

These large losses of gold and dollars are indeed serious, and if they are not stopped or greatly reduced strong measures would have to be taken. Though the total gold reserves of the United States are large, the excess, once one allows for the dollar reserves of foreign banks and the like, is not large. At the end of 1958, against \$20.5 billion of gold, foreigners held claims in dollars of \$12 billion, and by August 1959 we had lost an additional billion of gold.²⁶ Obviously, under these conditions there would be some pressure to restrain price rises. Unfortunately, any serious restrictive monetary policy would also have a serious effect on the economy and may not bring about the increase of exports and the reduction of imports that the policy is supposed to induce. Part of the explanation of this fact is, of course, the relative rigidity of prices and costs.

The Government might use three different approaches to the problem of trying to solve the balance of payments. Assume we are losing \$3 billion of gold and dollars a year. If we pay out \$9 billion a year for military outlays and civilian expenditures abroad, for Government loans and grants and private capital expenditures, an obvious way out is to reduce these claims in dollars. Another approach is, of course, to cut down on our imports; and finally, a third approach is to increase our exports. The last way requires anti-inflationary policies and may also involve increases in efficiency and the discovery of new products, and, through all these measures, the greater penetration of foreign markets.

In conclusion, I am not inclined to argue that the small inflation we have had in the last few years has been a decisive factor in our deterioration. Rather it has been the reestablishment of the competitive positions of the rest of the world, that we must take into account.

²⁵ See Survey of Current Business, September 1959, p. 90.

²⁶ Federal Reserve Bulletin, September 1959 and IMF, International Financial Statistics, April 1959.

If prices and costs are increasingly rigid, it becomes more difficult to make the necessary adjustments through the usual therapy. Insofar as we now have to take account of adverse balances, in turn related to some extent to inflationary forces, we may be inhibited as we have not been for many years in the pursuit of maximum growth and high employment policies.

Presently not anti-inflationary policies but a reconsideration of our Government foreign credit and grant policies is required.²⁷ In view of trends in reserves and credits in recent years, our contribution should be reduced. In this connection, a decision in October 1959 by the U.S. Government to require purchases under advances through the Development Fund in the United States is of interest. This suggests an approach through protectionism; that is, favoring our sellers, rather than a cut in aid.

²⁷ Cf. "Employment, Growth and Price Levels," V, pp. 970-971 and 1036 for similar conclusions by Messrs. Bernstein and Despres.

STUDY PAPER NO. 8
PROTECTION AGAINST INFLATION
(By H. S. HOUTHAKKER)

STUDY PAPER NO. 8

PROTECTION AGAINST INFLATION

(H. S. Houthakker, Stanford University, Stanford, Calif.)¹

THE SUMMARY

This paper deals with the ways in which individuals may protect themselves against inflation. The *possibility* of further inflation is taken for granted, but it is also argued that inflation will probably come to an end within the next 5 years.

The burden of inflation can be divided into redistribution, which appears to be quantitatively less important than is usually believed, and the results of uncertainty concerning the value of money. A proposal is made for an extension of the national accounts and flow-of-funds statistics to permit better measurement of the redistributive impact of inflation.

From then on the emphasis is on the demand for assets as it is affected by inflation. The increased demand for equities on the part of the public is seen as a response to full employment, which has reduced corporate risks. The resulting rise in share prices is held to be a transition phenomenon and a further fall in yields on stocks is considered unlikely.

Under "creeping" inflation the rise in the general price level tends to be discounted in the yield of bonds, but not in that of shares, because profits are believed to be a more or less constant fraction of national income; also cash balances are reduced relative to other assets. These conclusions agree with current experience.

The present inflation is transitional, being a consequence of the increase in demand for risky assets and in the willingness to incur debts. It is not due to Federal extravagance, and in practice cannot be cured by a tight money policy. Barring unforeseen contingencies the end of inflation is foreseen within 5 years.

At present there are no generally satisfactory arrangements whereby people of modest means can protect themselves against inflation. Insurance policies whose payout is linked to share prices have disadvantages similar to those of shares themselves. Individuals need assets primarily for three reasons: (1) as a reserve, (2) to smooth out anticipated fluctuations in income and consumption, such as those due to old age, and (3) as a source of revenue to build up an estate. Of these three goals achievement of the second is made most difficult by inflation.

Two measures are proposed to facilitate saving for old age and similar purposes. The first is the introduction of index bonds whose

¹ The author is indebted to David E. Kaun for research assistance and to Edward Shaw for useful comments. Neither is to be held responsible for the views expressed in this paper.

interest and redemption value are linked to a retail price index. A rate of interest of $2\frac{3}{4}$ percent is suggested to fit in with current yields on existing bonds. Objections that this step might destroy confidence in the dollar, or that it would itself be inflationary, are refuted.

The second measure is stimulation of the supply of shares by making it less attractive for corporations to issue bonds. This would be achieved by limiting the deductibility of interest paid for corporate tax purposes to the amount of interest received. The net cost of interest and dividends to the corporation would thus be equalized. The tax rate on corporate income would simultaneously be reduced to keep the total tax yield unchanged. Transition rules would prevent sudden changes in tax liability.

These two measures would also have a favorable effect on the market in Federal bonds.

THE ANALYSIS: PROTECTION AGAINST INFLATION

This paper is concerned with the ways in which individuals may protect themselves against inflation. It does not deal, except by implication, with the prevention of inflation, nor does it heap more sin on any of the several scapegoats that have so far been singled out. For the purpose of this paper inflation is regarded, if not quite as a fact of life, at least as a real possibility. I do not mean to suggest that the prevention of inflation is impossible or necessarily inconsistent with full employment and economic growth, but it appears that the combined achievement of these goals in the short run would call for a degree of economic statesmanship that is not available in any country at the present time.

It is quite conceivable that inflation comes to an end without any deliberate policy to that effect; some reasons for expecting such a course of events are discussed below. Indeed, we still cannot completely rule out the possibility that deflation may become a more serious menace, though the postwar record has been encouraging. However that may be, the fear of inflation now exercises so large an influence on the behavior of so many people that it is appropriate to give some thought to methods of protection.

THE BURDEN OF INFLATION

Let us first consider what it is that individuals and society need to protect themselves against. The burden of inflation can be divided into two parts: A redistribution of income and wealth among those who lose and those who gain, and the unfavorable consequences of uncertainty as to the future course of prices.

REDISTRIBUTIVE EFFECTS

Of these two groups of factors, the first can be further divided into two components: The gains or losses in terms of real purchasing power arising from the holding of assets (or the owing of debts) whose amount is fixed in money terms, and the gains and losses experienced by various individuals because their incomes rise (or fall) faster (or more slowly) than the prices of the goods which they consume.

Our knowledge in this area is still very fragmentary, and a suggestion for improved information is made below. Some preliminary calculations concerning the magnitudes of these components have been made, however, perhaps the best study being the one by Bach and Ando.²

The results of Bach and Ando are particularly remarkable in that they throw much doubt on a popular preconception concerning the effects of inflation. They do not find any great difference between the experiences of such groups as business and labor or creditors and debtors. Although some groups may temporarily lag behind others during periods of rapidly rising prices, on the whole the distribution of income appears to be determined by much stronger forces than merely monetary ones. These conclusions are surprising, but I see no reason for doubting their substantial accuracy. What Bach and Ando do find—and here they agree with public opinion—is that inflation has benefited working people at the expense of retired people, the young at the expense of the old. If such a transfer of wealth took place once and for all, it would certainly be a reason for concern, but less so if inflation were a continuous phenomenon, for then the children who have robbed their parents will one day be robbed by their children. The war and postwar years during which this transfer occurred also saw a considerable extension of the old-age and survivor's insurance program which wholly or partly offset the losses of the aged.

A PROPOSAL FOR IMPROVED STATISTICS

Illuminating though the calculations just referred to are, they do not provide a sufficiently comprehensive picture of the impact of inflation. For that purpose a more systematic and continuous effort, undertaken by a Government agency, is necessary. Such an effort could best be conceived as an extension of the national income accounts, or of what is now emerging as their financial twin: the flow-of-funds system of the Federal Reserve Board. Two things are especially needed:

(a) To measure the gains and losses due to different rates of increase of income (the second type of redistribution discussed earlier) the existing data on income flows should be calculated both at current and at constant wage rates, just as expenditures are calculated both at current and at constant prices. Although this will not be possible for all types of income, it should not be too difficult to do for many important sectors; extensive data on wages and hours worked are already in existence. A breakdown by industry would be especially helpful. As a result, there would not only be new information on differential trends in real and money wages, but also on the closely related and even more important subject of labor productivity. This extension of the national accounts would not call for any fundamental changes in present practice, and could probably be introduced at short notice.

(b) Measurement of gains and losses on account of assets and claims requires a rather more ambitious approach. It would mean the introduction of a national balance sheet in addition to the national in-

² Review of Economic Statistics, February 1957.

come or flow-of-funds accounts. This balance sheet (or rather, system of interlocking balance sheets) would show for a number of sectors (households, nonprofit institutions, corporate nonfinancial business, unincorporated nonfarm business, agriculture, financial institutions, Government, "rest of the world") the types of assets held (both physical and financial, at market value, and also at constant prices) and the claims outstanding (also at market value and constant prices, and distinguished by types such as bonds, equities, loans, etc.). Such a system would in any case be a valuable complement to the present accounts and would improve their accuracy; in addition to allowing the measurement of capital gains and losses it would afford valuable insight into such problems as overcapacity, the productivity of investment, access to capital markets, and the adequacy of depreciation allowances. Its introduction would require some preparatory research; useful spadework has already been done, especially by Raymond W. Goldsmith.³

THE FEAR IN INFLATION

Although we do not yet have sufficient knowledge of the matter, the results of Bach and Ando indicate that the redistributive effects of inflation are not as serious as is commonly held to be the case. The other group of consequences—namely, those connected with the fear of inflation—may well be more important, though they do not receive as much attention. Fear of inflation manifests itself in an increased reluctance to possess assets whose value is determined entirely in money terms, such as bonds, mortgages, bank balances, and savings deposits; and, conversely, in an increased willingness to owe debts whose amount is fixed in money terms. As I will discuss in more detail below, this change in preferences can to some extent be offset by an increased rate of interest on these assets or debts, but for the moment I want to concentrate on the shift in wealthholding from money to other types of assets.

HEDGING AGAINST INFLATION

MISCELLANEOUS ITEMS

In the course of history very different kinds of assets have served as a hedge against inflation. Gold, the classical favorite, has turned out to be worse than useless in recent American experience. Because of the usually high carrying charges, commodity inventories are more suitable for protection against violent bursts of inflation, such as those classically associated with the outbreak of war, than against the more moderate and sustained kind that is now the main problem; in any case, the prices of primary commodities have tended to fall behind. On the other hand, real estate, another old favorite, has lost neither its appeal nor (as far as we can see) its effectiveness. The continued boom in construction and in urban and rural land has no doubt been stimulated by the expectation of further rises in the general price

³ In his "Study of Saving," vol. III, p. I. An annual survey of public and private debt is already being undertaken by the U.S. Department of Commerce. The tables on financial assets and liabilities in the flow-of-funds system of the Federal Reserve Board go even further in the direction here advocated. The introduction of a national balance sheet might incidentally help in the much-needed reconciliation and integration of the national accounts and the flow-of-funds tables.

level, though there are many other contributing factors. Foreign currency, on the other hand, has become less attractive because after World War II inflation has become a worldwide phenomenon, varying only in degree; moreover, the prevailing system of international payments makes exchange rates almost completely rigid.

EQUITIES

Perhaps the most striking feature of the contemporary search for protection against inflation has been the shift toward equities. Long regarded as close to the bottom of the ladder of financial respectability, common stocks are now the foundation of even the most conservatively managed portfolios. The resulting increase in demand for shares has in many cases depressed yields on dividends to a point below that of virtually risk-free bonds, though the yield on earnings is still frequently considerable. Most buyers of shares, however, look nowadays not only at current earnings, but perhaps even more at prospective capital appreciation resulting from "growth." The underlying theory, reiterated in hundreds of brokers' advertisements and similar media, appears to be that returns to equity will, in the long run, be a more or less constant fraction of national output, so that by investing in those equities the investor can assure himself of a return that, in real terms, is more or less independent of monetary factors. Crude though it is, this theory is certainly not without its plausibility, nor does it contradict the historical evidence.

The spectacular rise in share prices during the last two decades or so, however, can only partly be associated with the theory just mentioned. As the increase in price-earnings ratios shows, an increase in corporate profits cannot be the only explanation of the stock market boom. What has happened, rather, is an increased awareness of the attractions of equity holdings in a period of full employment and inflation, and a consequent increase in the number of people who are willing to bid for existing securities. Those who bought stocks before the present boom are not only reaping the rewards of better profits, but also of their early realization of the merits of equities as a form of holding wealth.

This explanation of the boom is not correct unless we also look at the supply of shares. The increased demand for shares on the part of the public has been matched by an increased reluctance on the part of corporations (that is to say on the part of those large shareholders who control corporate finances) to issue new shares. The corporate profits tax, especially, makes it advantageous for corporations to finance their capital expenditures by means of bonds and long-term loans rather than equities.⁴

⁴During the years 1947-58 the total funds obtained by corporations (excluding banks and insurance companies) were divided as follows:

<i>Source of funds</i>	<i>Amount (billions)</i>
Stocks (including preferred)-----	\$29
Bonds-----	52
Other external long-term sources-----	15
Internal sources (depreciation and retained profits)-----	255
External short-term sources (bank loans, etc.)-----	61
Total-----	412

Thus only 7 percent of investment was financed from equities.
Data from U.S. Income and Output (1959) and Survey of Current Business (July 1959), table V-10.

The rise in stock prices far beyond the rise of prices in general is, therefore, partly a transitory phenomenon, resulting from a gradual adjustment in the allocation of wealth among various types of assets in response to full employment and inflation. What has happened, in essence, is that share prices have already advanced more closely to their ultimate level than the prices of other securities. Since, even now, according to the best estimates, there are no more than some 12 million shareholders in the United States, it is possible that this transition has not yet come to an end, and that the stock market boom will consequently continue. Like any major price movement, this boom is also to some extent feeding upon itself, though high margins requirements and occasional shakeouts have probably prevented the worst speculative excesses. At the same time, it appears unlikely that yields will fall much below their present, already depressed levels. Any further increase in stock prices must therefore be a result of improved earnings.

THE PATTERN OF YIELDS

IN THE LONG RUN

So far I have discussed, in very general terms, the changes in the pattern of wealth holding that are correlated with inflation. I shall now try to be a little more specific about the way in which this pattern is determined. For this purpose I shall assume, to begin with, that inflation continues at a rate of perhaps 2 percent or 3 percent per year, but does not significantly increase its pace. Furthermore it will be supposed that this rate of inflation is a matter of general knowledge, even though some people may be more concerned to protect themselves against rising prices than others. I also assume that full employment is maintained, and expected to be maintained, except possibly for occasional recessions of the kind which we have had in the postwar period. The latter assumption, as I shall explain in more detail below, is of considerable relevance to the present state of the economy.

Under those assumptions it is clear that the rise in the general price level will be more or less accurately discounted in the returns obtained from various kinds of assets. For instance, if prices are expected to rise by 3 percent per year, and people would otherwise be satisfied with a return of $2\frac{1}{2}$ percent per year on Government bonds, then the new return on Government bonds must be $5\frac{1}{2}$ percent. To take another example, if in times of constant prices the yield on good quality equities is 2 percent above the yield of good quality bonds, and prices are again expected to rise by 3 percent per year, then under the latter conditions the yield on equities will be 1 percent below that of bonds. Similar reasoning can be applied to almost any other kind of asset. In the case of cash, for instance, it follows that under inflationary conditions there will be a tendency to hold relatively less cash, for its return (apart from convenience) is zero so it becomes less attractive

compared to other kinds of assets.⁵ The velocity of circulation increases, and this is a crucial link in the chain of events leading to a rise in the general price level.

The theory just outlined, simple though it is, also seems to be consistent with the emerging pattern of yields on capital assets.⁶ To put the matter briefly, a high enough rate of interest on bonds will offset the consequences of any steady rate of inflation.

From this point of view it might seem as if "creeping" inflation is nothing to worry about, since the yields on assets will adjust themselves more or less automatically to the changes in the general price level. True, those who favor large Government expenditures might be concerned if the nominal rate of interest on Government bonds reaches a level of 5 percent or 6 percent, but actually the burden is not as large as this figure might suggest, for the real value of the taxes from which the bonds have to be repaid falls by a considerable percentage every year, so that the net real cost of Government borrowing is much lower than it appears. There would consequently be no need to cut down on desirable Government expenditures, as is often believed. Indeed if inflation proceeds more or less as expected, which is what I am assuming at the moment, there will not even be any undue tendency to invest in real assets (such as houses, factories, etc.) rather than in monetary assets (such as bonds) because the cost of finance (such as mortgages) will adjust itself so as to provide as much of a deterrent as in times of unchanging prices.

⁵ Recent experience supports this conclusion. The following table shows the percentage change in cash (more exactly: currency and demand deposits), total financial assets (more exactly: claims on other sectors) and in total expenditure, for the U.S. economy as a whole and for some important sectors. It refers to the period from 1949, when cash was at the lowest point since World War II (presumably because wartime excesses of liquidity had been worked off) through 1958.

Sector	Percent change in—		
	Cash	Total financial assets	Total expenditure
Consumers and nonprofit organizations.....	24	113	62
Noncorporate nonfinancial business.....	38	49	(a)
Corporate nonfinancial business.....	36	80	(a)
Nonbank financial (savings institutions, insurance, etc.).....	69	130	(a)
State and local governments.....	45	122	126
Economy as a whole.....	27	(a)	71

^a Not available.

Source: For "cash" and "total financial assets": Federal Reserve Bulletin, August 1959, pp. 1056-1061. For "total expenditure": Survey of Current Business, July 1959, pp. 6-7.

⁶ Following are the (nominal) yields on some important types of assets in recent years:

Security	Yield in—		
	1950	1955	1959 (July)
U.S. Government long-term bonds.....	2.32	2.84	4.11
Tax-exempt municipal bonds.....	2.00	2.57	3.92
Corporate bonds.....	2.86	3.25	4.72
Common stocks (yield on dividends).....	6.50	3.93	^a 3.11

^a Not entirely comparable with earlier years.

Source: Federal Reserve Bulletin and Statistical Abstract.

SOME RESERVATIONS

The state of affairs just described, in which the rate of inflation is discounted in all interest rates and other rates of return, is not completely realized at the present, nor will it be in the immediate future. It is useful to bear in mind that complete adjustment is conceivable, for public opinion on inflation is perhaps too much influenced by gloomy recollections of a few spectacular inflationary episodes in the past. Nevertheless we must consider in what respect this ideal differs from reality.

In the first place complete adjustment can only be expected in the long run, and especially in the case of inflation it is often doubted whether there will be a long run. Thus many people believe that inflation cannot go on at a steady rate year after year, but that it must necessarily become more and more rapid. As evidence they point to the spectacular inflations I just alluded to. I do not think this fear is well founded. The many instances of rises in the general price level that did not lead to an explosion largely outnumber those few episodes. Indeed the most famous of those episodes (the German experience up to 1923) would probably not have occurred without the active and deliberate intervention of the German Government. It is true that in its initial stages, which may last several years, an inflationary movement tends to gather momentum, especially if government policy is ignorant or perverse, but this acceleration is only a transitional phenomenon.

I would go further and argue that is unlikely that an inflation will be able to maintain a steady rate; after the transitional phase the net returns to different kinds of capital will once more have come into mutual equilibrium and the momentum will gradually be spent.

WILL INFLATION CONTINUE?

At the risk of departing from my main theme, I venture to add my opinion that the present inflationary period is also mainly of a transitional nature. Its mainspring, I think, is the adjustment on the part of the public to a policy of full employment. The increasingly widespread conviction, reinforced after every shortlived recession, that a major depression will not recur, calls for truly fundamental changes in the entire financial sector. Quite apart from any inflationary consideration it reduces the relative attraction of cash and other liquid assets. Liquidity is desired mainly as a precaution against disaster, and economic disaster has been made less likely for nearly everybody by Government policy. On the other hand, investment in productive enterprises, even rather risky ones, has become correspondingly more attractive. This means an upward shift in the demand for risky securities, of which the present stock market boom is a symptom.

Risk can never disappear completely, but it certainly has become less evident than it was up to the second World War. A policy of full employment, for instance, favors the capital goods industries, traditionally the victims of depression, relative to the consumer goods industries, even though the consumer goods industries themselves

benefit in an absolute sense.⁷ The heavy industries have always had a tendency to be highly concentrated, but a full exercise of monopoly power was made difficult by the perennial risk of depression. This, of course, applied equally well to management as to the labor unions in those industries. With the advent of full employment monopoly power has become a much more serious danger to the economy as a whole, as witnessed by the record of the steel industry after the war. The steel firms and unions are not more wicked now than they were before World War II, but they have more scope to pursue their (not especially immoral) aims.

The consequences of a full employment policy do not stop here. The consumer's outlook, too, is still changing drastically. Consumer debt has expanded more sharply than any other form of debt, and this may well be only the beginning. The recent introduction of bank-sponsored charge account and overdraft plans points to further sharp increases in the velocity of circulation of money. Home ownership, which can be more of a burden than a blessing when hard times threaten, has come to appear more desirable than ever.

Compared to these powerful forces in the private sector any positive contribution which the Federal Government has made to the inflationary process is definitely minor,⁸ though it is also true that by making money really tight the general price level could have been kept stable. Perhaps nothing short of a full-scale depression scare will stop the inflationary pressures that are now rampant in so many countries. A tight money policy is desirable to the extent that it helps to bring the real rate of interest (that is, the nominal rate after adjustment for price changes) closer to its equilibrium level. Unless it is so severe, however, that employers lack the cash with which to pay wage increases, and investors the cash with which to buy additional securities, it will scarcely have much impact on prices in general. If monetary policy reaches this degree of rigor it clearly becomes a serious menace to growth and prosperity.

The above analysis may appear pessimistic to those who are concerned about inflation as such. This impression is unjustified, for my argument is mainly intended to show that although the present inflation could probably not have been cured without injury to the patient, it will sooner or later come to an end. How soon? According to my guess the length of time still necessary for general adjustment to a full employment economy will not exceed 5 years, and may be as

⁷ From 1947 to 1958 a comprehensive price index for personal consumption expenditures rose by 33 percent, while a similar index for producers' durable equipment rose by 55 percent. (Data from U.S. Income and Output and Survey of Current Business (July 1959), table VII-2.)

⁸ The justification for this statement, which contradicts widely held convictions, is that the net Federal debt has not shown any upward trend during the postwar period; if anything it has declined, so the Federal Government can hardly be accused of living beyond its means. The share of Federal debt held by the banking system (sometimes considered to be more significant for monetary analysis) has not increased either. On the other hand, according to figures in the Survey of Current Business (May 1957 and May 1959) the net debt of State and local governments rose by 253 percent between 1947 and 1958, of corporations by 127 percent, of individuals and unincorporated enterprises by 238 percent. In the last-mentioned category the rise of small residential mortgages by 318 percent and of consumer credit by 290 percent are noteworthy.

It must be admitted, however, that figures on net debt do not tell the whole story. Only complete sectoral balance sheets could give the necessary information, but they are not available. Data on financial assets and liabilities (from FRB, August 1959, p. 1057) show, for instance, that consumers' financial assets rose by 113 percent between 1947 and 1958, while their liabilities rose by 332 percent. Moreover, of the rise in financial assets at least two-thirds is attributable to the rise in share prices and does not represent newly acquired assets.

short as 2 or 3 years. When that period is over, the pattern of yields and of prices will gradually become more stable (barring, of course, wars and other unforeseen calamities).

Economists with more knowledge of the monetary sphere than I can claim will have to decide on the validity of my diagnosis; the verdict may even have to be left to history. In a sense this diagnosis is only incidental to my subject, though it does have an indirect bearing on the validity of some of my proposals. Let us now return to the main argument.

DIFFERENCES IN EXPECTATIONS

So far the discussion has proceeded mainly on the assumption that inflation is generally recognized and more or less accurately expected. This was only a simplified assumption, needed as a foundation for statements about the long run. It is now time to remove the assumption.

As soon as we do so we have to face the fact that people may have different expectations as to the rate of inflation that is going to prevail in the future. Moreover, the mere uncertainty of the rate of inflation has important consequences. These two complications interact and need not be discussed separately.

A divergence concerning the expected rate of inflation is nothing unusual in security and commodity markets. Indeed divergent opinions are the essence of such markets. Among the many motives which make people buy and sell securities, the anticipated rate of inflation is already one. Nevertheless it is important to realize that there is at the moment no market which is exclusively devoted to reconciling different opinions concerning the course of prices in general. There are markets (the commodity futures markets) in which opinions on the course of individual prices, especially of raw materials and food-stuffs, are brought into balance with each other and with production, consumption, and inventories. The total coverage of these markets, however, is too small to provide a hedge against the movement of the general price level; moreover, the large size of individual transactions, and their restriction to periods of 12 or 18 months ahead, preclude their use by those who are not specifically interested in the commodities traded. The basic purpose of these markets, furthermore, is protection against price falls for holders of inventories, rather than protection against price rises for prospective buyers. The latter kind of protection can also be provided by futures contracts, but only at considerable cost; it is usually achieved more economically by holding inventories. A futures market concerned with the general price level would therefore meet insuperable technical difficulties. As we shall see below, a more workable substitute can be devised.

On the stock market, where fear of inflation is one of the factors determining stock prices, many other factors exercise an even greater influence on the price of individual securities. In fact, this is one of the reasons why common stocks do not provide an altogether satisfactory protection against inflation, even if the premise mentioned earlier (that profits will continue to claim an approximately constant share in national income) is granted. There is a wide dispersion in the results obtained from different securities.⁹ It is true that even

⁹ Cf. Appendix.

people of modest means can achieve diversification by buying shares in investment trusts and similar institutions, but they have to pay rather heavily for the management skills thus bought. The yields on investment trusts are consequently quite low, often still lower than those on the bluest of the blue chips.¹⁰ Unless the investor is prepared to pay this price for management, he will have to familiarize himself with the merits of a large number of individual companies. On the average investors will probably do very well, but the risk of choosing a bad company remains.

The bond market situation is also unsatisfactory in this respect. The heavy participation by financial institutions, especially banks, means that the determination of bond prices reflects considerations which are not of much importance to most individual investors. It may be admitted that insurance companies, another important category of bondholders, ideally reflect only the preferences of their policyholders; on the other hand the long-term nature of many insurance contracts, and the strict legal regulations to which the industry is subject preclude a very close adjustment of the insurance companies' policies to the needs of their customers.

INSURANCE POLICIES LINKED TO SHARE PRICES

In this connection it might be useful to comment briefly on the plans now materializing to issue insurance policies whose proceeds are linked to the value of a portfolio of selected stocks. One such scheme was started some years ago by the Teachers Insurance and Annuity Association, while a major life insurance company was recently authorized to go ahead with similar plans. The TIAA plan has met favorable response among its special public, and it seems likely that the newer and more general proposal will also find wide acceptance. Despite opposition within the insurance industry, similar plans will presumably be introduced by other companies. If these plans are, in fact, successful, they will offset a trend that has caused considerable anxiety to the industry, namely the shift away from equity-building insurance (such as endowment policies) toward term insurance.¹¹ Although an exact evaluation of this movement is made difficult by the simultaneous shift from individual to group policies, it would seem that fear of inflation has been a major cause of the decline of traditional insurance.

Those who devised the new insurance schemes deserve credit for understanding the signs of the times; nevertheless, it must be doubted whether this solution will be satisfactory in the long run. So far stock prices have risen much more than prices in general, but this hardly suggests that they will continue to do so. On the contrary, if my diagnosis is correct, the rise in stock prices, though partly based on real factors and not merely on fear of inflation, has brought equities

¹⁰ Of 24 investment funds for which the price on Dec. 31, 1958 was related to dividends paid in 1958 the yield was less than 2 percent in 6 cases, from 2 to 3 percent in 10 cases, from 3 to 4 percent in 7 cases, and over 4 percent in one case. Many of these funds also pay out capital gains from time to time.

¹¹ From data in the "Life Insurance Fact Book 1959," it can be estimated that of the total life insurance in force in the United States 45 percent was term insurance in 1957, against only 30 percent in 1950. If group and credit insurance are left out of account the percentage of term policies in the remainder (ordinary and industrial) rose from 11 percent in 1950 to 17 percent in 1957.

closer to their long-term equilibrium values than prices in general, and may already have pushed them beyond this level. Consequently, the stock market does not provide an ideal hedge for such inflation as is still to come. The stock market, in other words, has already discounted a good deal of future inflation. And, even apart from these necessarily speculative considerations, it is not at all clear that those who buy insurance policies to provide for their needs in old age are well served by having their fortunes linked to the vagaries of the stock exchange.

THE NEED FOR ASSETS

This brings us to the heart of the whole subject—protection against inflation. What types of assets do individuals really need? This is almost the same question as, Why do people save?

There are three main reasons why people save, and each of them is associated with particular kinds of assets:

1. *To have a reserve against unforeseen contingencies.*—This need can be met by having highly liquid and comparatively risk-free resources, especially cash and bank deposits, though an overdraft agreement with a bank (of the type that is now becoming popular) would be almost as suitable. For this type of asset, which is probably of minor quantitative importance, yield is not an important consideration.

2. *To smooth out anticipated fluctuations in income and consumption,* especially those associated with old age, but also with such things as a college education for children, or the building of a house. Here liquidity is of less significance, but freedom from risk is important, while yield is a close second. Now, "freedom from risk" needs to be carefully defined. It does not necessarily mean that a certain number of dollars will be available when anticipated, but rather that the individual is able to satisfy those needs for which he had saved. Sometimes, especially in the case of housing, this can be arranged by purchasing ahead of time, as it were, but there exist no facilities for the delivery of food or clothing 20 or 30 years from now. Hence, saving in some form is necessary. Here again we must recall that risk can never be avoided completely. By buying Government or prime corporate bonds, for instance, one can virtually avoid the risk of default, but the risk of changes in the price level remains. There is nothing in the history of the United States or of any other country that warrants the assumption of a stable price level in the long run. By buying equities one can probably achieve partial independence from changes in the price level, but other kinds of risk are thereby incurred: much the same applies to real estate as a form of wealth. The choice between those various kinds of risk depends on their evaluation by the individual, and on his ability to cope with them. People who know nothing about corporate finance may shy away from the stock market and put their faith in assets with a fixed money value, thus exposing themselves to the risk of inflation.¹² At the moment, there is no way out from this dilemma, although I shall discuss one later in this paper. The willingness to assume various types of risks also depends on the income and wealth of the individual concerned; people with large incomes or fortunes evidently can take greater risks than others. Until

¹² This, in fact, is the basic virtue of a stable price level: that it permits investors without special knowledge of any line business (rentiers) to earn a (necessarily modest) return on assets with a fixed money value.

recently shares were considered the most risky assets, so their ownership was largely confined to high-income groups. Now that risk evaluation has changed drastically; their ownership tends to be much less concentrated.

As a result some shares are now held by individuals who are not financially able to shoulder the risk of corporate ownership, though the gradual realization of "people's capitalism" should perhaps be welcomed on other grounds. Finally it should be borne in mind that to some extent risks can be offset by yield; thus if the rate of interest on Government bonds were high enough the risk of inflation might be amply offset, and if share prices were lower the ownership of equities could be recommended to people of modest means who at present prices do not stand to gain much considering the risks they would take.

3. *To build up an estate.*—Although not always recognized as such, this motive appears to be more important in the aggregate than the provision for old age. It is true that the active desire to build up an estate is confined to a rather small section of the population, but this section does seem to account for the bulk of savings and assets. For this purpose liquidity is of small significance, and freedom from risk is also less important. Yield, whether in the form of current return or of capital appreciation, is the primary consideration.

TWO PROPOSALS

I have given most space to the second motive for saving, because this is the one most affected by inflation. The usefulness of cash and bank deposits to satisfy the first need (that for a reserve against emergencies) is little affected by creeping inflation, while the third motive (estate building) is mostly pursued by means of shares, ownership of unincorporated business, and real estate, all of which are more or less immune. It is clear, however, that even a modest rate of inflation may interfere seriously with provision for old age and similar long term needs. There are two steps that can be taken to improve this situation.

INDEX BONDS

The first step is the introduction of Government bonds whose rate of interest and redemption value are linked to a retail price index number; I shall refer to such bonds as "index bonds." This is not by any means a new proposal; in fact, its history can be traced back at least to Alfred Marshall in the late 19th century. Nevertheless there have been only a few attempts to put it into practice.¹³

I should make it clear at once that I do not propose index bonds as a means of combating inflation. The forces that have caused prices in general to rise are too strong, in my opinion, to be overcome by any such device if introduced on the modest scale that I have in mind. I am not suggesting that the whole Government debt, not to mention private debt, be put on an index basis, as has apparently been at-

¹³ Under the category of index bonds I do not count bonds that are linked to the value of gold in some way; they would be of little help in present circumstances.

tempted in Finland.¹⁴ What I am contemplating, rather, is the issue of some new series of Government bonds, along with a continuation of present types.

In the field of savings bonds especially, indexing might improve matters considerably. There has been a fairly steady decline in the amount outstanding of savings bonds; one suspects that the decline would be even larger if a considerable portion of savings bonds were not sold by payroll deduction plans. A large proportion of bonds are cashed in after as little as two years.¹⁵ It is conceivable that the rather small increase in interest rates recently authorized by Congress will stimulate the savings bond program somewhat, but it would be surprising if it made sales exceed redemptions.

If savings bonds with an index clause were issued, the rate of interest should not be more $2\frac{3}{4}$ percent. Judging from the dividend yield on blue chip shares, many people would be happy with this modest return if it were guaranteed in real terms; it also agrees with the current real rate of interest on Federal bonds (a nominal rate between $4\frac{1}{2}$ and $4\frac{3}{4}$ percent less an annual rate of inflation of somewhat under 2 percent). The low rate of interest does not necessarily mean that the Government will have a bargain, for the index clause may turn out to be expensive if prices rise much. It is sometimes held that index bonds will encourage the prevention of inflation because of its impact on the budget when index bonds are outstanding, but I would not put too much stress on this argument. The introduction of index savings bonds has to be viewed primarily as the filling of a gap in the range of financial instruments and as a service to the many people who are providing for old age on an individual basis. It may also have a favorable influence on the volume of saving, but here again it would be imprudent to claim much.

Fortunately, if my diagnosis of the present monetary situation is correct, the Government will not be forced to pay out large sums on account of the index clause. If inflation comes to an end within the next decade, the public would have benefited not only from greater security in its old-age planning, but also from a lower cost of the Government debt. And if inflation does not come to an end, index bonds would clearly be even more useful.

Savings bonds, which are held by individuals are an obvious choice for the introduction of indexing on a modest scale.¹⁶ There is no reason, however, to confine this device to savings bonds.¹⁷ The in-

¹⁴ See the unsympathetic account in an article entitled "Creeping Inflation" in the June 1959 issue of the *Monthly Review* of the Federal Reserve Bank of New York. Unfortunately, the analysis in this article could hardly be more superficial. For an intelligent, though almost equally one-sided, discussion of index bonds, primarily from a theoretical point of view, see Guy Arvidsson, "Reflections on Index Loans," *Skandinaviska Banken Quarterly Review* (Stockholm), January 1959.

¹⁵ Of the series E bonds sold in 1957, for instance, more than half had already been redeemed on March 31, 1959 (Source: mimeographed statement from the Fiscal Assistant Secretary of the Treasury).

¹⁶ From an administrative point of view there is an advantage in discount-type bonds—such as the present series E—with an index feature; it would then be unnecessary to have interest coupons with variable money value and only the redemption value would have to be readjusted. To discourage early redemption it might be advisable to apply indexing only to the redemption value after a certain number of years. Furthermore the introduction of special bonds (at a lower rate of interest than regular index bonds) with a minimum redemption value might be considered, since some people might feel that the risk of price falls makes index bonds too speculative otherwise.

¹⁷ Index savings bonds could be marketed through existing channels, including payroll deduction plans. In general, however, I see no harm in having index bonds of larger denominations traded over the counter or on the stock exchange; indeed such negotiability would enhance their attractiveness to investors.

roduction of index bonds with larger denominations and longer maturities might enable insurance companies to offer policies whose return is based on the Consumer Price Index.¹⁸ Such policies would probably be preferable to the stock market linked policies that are now coming into existence. (See the discussion above.)

It is sometimes argued that indexing cannot be introduced by any government without destroying confidence in its own currency. This view, I think, is based on an unrealistic conception of contemporary monetary management. As I have argued earlier, the role of the Government in fostering inflation is relatively small, except to the extent that the increased demand for certain assets by the public and the increased circulation velocity of money are due to a full employment policy. In history there have been many instances in which the Government budget was a prime contributor to inflation, but this does not seem to be the case in the United States at the present time. No doubt the Government and its instrumentalities have an obligation to keep the value of money as stable as possible, but this obligation has to be reconciled with other objectives of Government policy. The introduction of indexing would be no more than the recognition of a fact. This is not to deny that a certain amount of public education would be necessary before such a step could be taken.

As far as the domestic economy is concerned it must be doubted, therefore, whether confidence in the dollar would be further reduced by the introduction of index bonds. The official attempts to exorcize inflation by professions of abhorrence have failed, and at the moment no policy with greater promise of results appears to be available; the time for realism seems to have arrived. On the international scene the situation is not basically different. It is true that public recognition of the possibility of inflation might cause international financiers, who are a nervous crowd, to withdraw some "hot money" from New York. But this would be only a temporary reaction; it is even conceivable that index bonds, which at the moment are not available in any major country, would attract foreign long-term capital to the United States.

Another possible objection to index bonds is that they represent more "escalation," and thereby promote price rises. This objection is based on the now fashionable cost-push theory of inflation which I need not refute here.¹⁹ From the viewpoint adopted in this paper escalation is not itself a cause of inflation but at best one of the factors determining the speed at (rather than the degree to) which the underlying causes of inflation affect the different sectors of the economy. By slowing down the adjustment to these causes one only creates disparities; hence escalation need not be feared.

INCREASING THE SUPPLY OF SHARES

The second measure to improve the possibility of providing for old age in an inflationary period which I would recommend is an increase in the supply of shares. Although equities are not a suitable invest-

¹⁸ There are some technical problems concerning the choice of a suitable price index, but they are not serious. Any reasonably comprehensive index number would do for practical purposes.

¹⁹ See, for instance, the valuable article by Richard T. Selden in the *Journal of Political Economy* of February 1959.

ment medium for all individuals, it would probably be in the public interest if they were more widely held than they are at present, and they have considerable merit as a hedge against inflation. At present, however, share prices are too high to warrant investment by small savers. The supply of shares could be increased, and prices reduced, by making corporations more willing to finance new investments from shares rather than from bonds or bank loans. As I mentioned earlier, a major deterrent to the expanded issue of new shares is the fact that the corporate income tax treats interest as deductible. Hence, the true cost of dividends to the corporation is relatively higher than that of interest on bonds and loans. To take the figures of footnote 5, the cost before tax of dividends to the corporation, at a 52-percent tax rate, is 6.5 percent when the yield to the share owner is 3.1 percent, as compared to a pretax (and posttax) cost of 4.7 percent of interest on bonds. Even now substantial numbers of new shares are being issued, but probably not as many as would correspond to the high level of stock prices.²⁰

The issue of new shares could be stimulated, if this argument is correct, by changing the deduction rules for the corporate income tax. Interest paid by corporations, according to this proposal, would no longer be fully deductible; instead it would be deductible only to the amount of taxable interest received; in other words, net interest paid would not be deductible.²¹ At the same time the percentage rate of the tax would be adjusted downward, since the purpose of this change would not be to increase the total tax burden on corporations. To safeguard payment of interest on senior obligations, it would be made possible to obtain a tax deferment to the extent necessary to pay such interest in case of insufficient income. An incidental consequence of this change, and one which most economists would probably applaud, is a modest reduction in the marginal tax rate on corporations, which would probably lead to a greater effort to cut down unnecessary expenses and a greater willingness to bear risk.²² The principle that taxation should not interfere with sound rules of corporate finance will also find general support.

The introduction of this change in the deductibility of interest would have to be gradual, for the proportion of junior to senior obligations varies between firms so that the tax payable by some firms might change suddenly even though the total yield of the tax remains unchanged; a sudden change in the tax base might therefore be disruptive. One way of arranging a smooth transition would be to leave the present deduction rules in force for interest on debts contracted before a cutoff date and apply the proposed rule only to debts contracted or renewed after that date. The tax rate could then be reduced

²⁰ Footnote 6 also shows that the advantage of bonds over stocks has narrowed considerably in recent years, although it is still appreciable.

²¹ The deduction of interest paid from interest received would be allowed since otherwise financial corporations, whose business it is to lend money obtained by borrowing, would be placed in an impossible position. Only taxable interest received would be considered, since tax-exempt interest already enjoys special consideration.

²² If in 1956, the last year for which corporate income tax data are available, the proposed change had been fully in effect, taxable income of \$46.9 billion, would have been increased by about \$3.5 billion or 7.4 percent; the last-mentioned figure was estimated by adding the interest paid and subtracting the taxable interest received in all industrial groups for which there was a net outflow of taxable interest. The average tax rate of 45.6 percent could consequently have been reduced to 42.5 percent, and the marginal tax rate of 52 percent correspondingly to 48 percent.

gradually over a period of years to reflect the proportion of debt under the old and the new rules. A detailed study of corporate debt would help in establishing the new schedule of tax rates.

THE GOVERNMENT BOND MARKET

The two proposals just made clearly will have some influence on the market in Federal bonds, about which there is much concern at the moment. The introduction of index bonds will presumably lead to some amelioration of the Federal Government's difficulties in placing new savings and long-term bonds; unfortunately there is no basis for forecasting the demand for such bonds. A questionnaire survey could yield considerable information on public interest in them.

Recent events indicate the existence of a large demand for conventional bonds at an interest rate around $4\frac{3}{4}$ percent, but if my diagnosis concerning the future course of inflation is at all accurate, the Federal Government would be ill-advised to attempt the placement of long-term bonds at so high a rate, even if Congress could be persuaded to permit this. If inflation ends within the next 5 years bond interest will fall from its present level, which includes an allowance for a decline in the value of money. Index bonds would not reflect this factor, and would consequently present a convenient solution to the immediate problems in Federal finance.

A successful attempt to stimulate new share issues through changes in the tax laws may have an even greater impact on the bond market. It has often been pointed out that the Federal Government is at a disadvantage there compared to two other important classes of borrowers. State and local government bonds are tax exempt and hence carry a lower rate of interest; one curious consequence of this is that these authorities find it more and more profitable to own Federal bonds.²³

Whether anything should be done about this is a problem outside the scope of this paper.

The proposed change in the corporate income tax, on the other hand, will clearly improve the competitive position of the Federal Government, even though that is not its primary purpose.²⁴ The tendency on the part of important investors, notably insurance companies and mutual savings banks, to hold fewer Federal bonds and more corporate bonds, could perhaps be halted or reversed. It should not be forgotten, in this connection, that the rise of corporate bond financing stems only partly from fiscal factors, and reflects also the general decrease in risk resulting from a policy of full employment.

²³ From 1947 to 1958 their holdings increased from \$7.3 billion to \$17.3 billion, in marked contrast to the holdings of most other classes of lenders which declined (source: Federal Reserve Bulletin).

²⁴ There are no good grounds for giving special help to the Federal Government in the bond market, but neither is there any reason why it should continue to be at a disadvantage because of regulations that are harmful in themselves, such as the tax rules concerning corporate interest payments. Because of the many side issues involved I have not gone into the deductibility of interest in the individual income tax; evidently roughly similar considerations apply there, but they may be to some extent offset by the desirability of homeownership from a social point of view.

APPENDIX

THE RETURN FROM COMMON STOCKS

In order to provide insight into the net results of investment in common stocks a sample of equities quoted on the New York Stock Exchange has been analyzed. In principle the sample was randomly selected; the need for quotations extending over several years, however, restricted the choice somewhat. This factor, and also the criteria for quotation on the New York Stock Exchange, no doubt biased the sample in the direction of better investment quality.

For each stock the total yield was calculated by averaging the total dividends paid and reducing the capital gain (or loss) to an equivalent annual rate of interest; thus a stock which 4 years ago cost \$100, had paid a total of \$10 in dividends and now sells at \$104 1/16 had a yield of 2 percent and a capital gain equivalent to a 1-percent rate of interest, giving a total return of 3 percent. According to the usual convention stock dividends of less than 25 percent were at cash values; larger stock dividends were treated as splits. Taxes were not taken into account.

This calculation was made for examples of stocks bought in 1925, 1930, 1935, etc., through 1955 and sold in 1959. The date in each year was close to January 15. Of the stocks bought in 1925 and 1930, some disappeared through bankruptcy.

The results are as follows:

Total return from stocks from year indicated to 1959

Annual return	Year of purchase						
	1925	1930	1935	1940	1945	1950	1955
Negative.....	21	9	4	0	0	2	8
0 to 5.....	22	40	9	4	12	6	14
5 to 10.....	35	40	20	36	22	18	20
10 to 15.....	24	15	26	25	20	15	23
15 to 20.....	13	14	19	20	23	25	25
20 to 30.....	10	7	29	17	33	37	21
30 to 40.....	7	6	8	9	9	14	9
40 to 50.....	4	1	7	4	2	6	5
50 and over.....	6	2	6	10	3	3	1
Total number.....	142	134	128	125	124	126	126
Mean return.....	¹ 7.43	² 6.75	24.65	23.64	18.49	20.62	15.81
Median return.....	8.95	6.91	15.77	14.11	17.30	16.54	14.27

¹ The mean return would be 15.56 if the 10 stocks that became a total loss are ignored.

² The mean return would be 13.58 if the 8 stocks that became a total loss are ignored.

This table shows that there is considerable dispersion in the results from different stocks, and hence considerable risk, but that by and large, even over long periods, stockholding has been rewarding enough. The median return is nearly always below the mean return, indicating that a majority of stocks do less well than the mean; even at the median the return is substantial.

It is of some interest to separate the two components of total return, which was done for 2 purchase years as shown in the following table:

*Returns from dividends and from capital gains or losses on stocks bought in
1925 and 1955*

Dividend yield	Equivalent capital gain											
	Stocks bought in 1925 ¹					Stocks bought in 1955						
	Neg- ative	0-5	5-10	10-20	Total	Neg- ative	0-5	5-10	10-20	20-40	40 and over	Total
0.....	2	4	-----	-----	6	2	1	1	2	1	-----	7
0 to 2.....	11	7	-----	-----	18	2	1	1	-----	1	-----	6
2 to 4.....	5	10	-----	-----	15	4	3	3	4	-----	1	15
4 to 6.....	-----	16	1	-----	17	8	12	10	17	7	-----	54
6 to 8.....	-----	19	3	-----	22	4	5	7	8	4	1	29
8 to 10.....	-----	11	4	-----	15	-----	1	2	3	3	-----	9
10 and over.....	1	10	20	8	39	-----	3	-----	3	-----	-----	6
Total.....	19	77	28	8	132	20	26	24	37	16	3	126

¹ Excluding shares of corporations that subsequently failed.

The left-hand half of this table suggests that in the long run (or at least from boom to boom) dividends are more important than capital gains; in fact capital gains are positively correlated with dividends, which agrees with economic theory. In the short run capital gains are more important and their correlation with dividends is weaker.

STUDY PAPER NO. 9

THE SHARE OF WAGES AND SALARIES IN
MANUFACTURING INCOMES, 1947-56

(By ALFRED H. CONRAD)

STUDY PAPER NO. 9

THE SHARE OF WAGES AND SALARIES IN MANUFACTURING INCOMES, 1947-56

(By Alfred H. Conrad, Harvard University, Cambridge, Mass.)¹

1. This study is concerned with the relative shares of wages and gross profits in manufacturing value added in the period 1947-56. I will first discuss the way in which the shares would be expected to change under each of the main theories of the inflation process. Then I will outline the changes that have occurred in the distribution between wages and nonwage income (1) in the whole economy, (2) in the manufacturing industries as a group, and (3) among manufacturing industries taken singly. Finally, I will use the detailed industry statistics to attempt to test some of the main hypotheses about wage-setting in periods of high-level employment.

2. The relationship between income shares and inflation is not a simple one. The share going to wages depends upon the wage rate, the productivity of labor, and the response of finished product prices to changes in wages and material costs. Each of these, in turn, may depend upon the pressure of demand, the degree of monopoly control, Government policies, and other influences in the economy. Since we are dealing with shortrun changes, I will not consider the major longrun or equilibrium determinants of income shares, such as the marginal productivities of capital and labor inputs.

3. A few years after World War I, John Maynard Keynes pointed out that the social effects of inflation are important—

only insofar as its incidence is unequal * * * [A] change in prices and rewards, as measured in money, generally affects different classes unequally, transfers wealth from one to another, bestows affluence here and embarrassment there, and redistributes Fortune's favors so as to frustrate design and disappoint expectation.²

His description of the process revolves about the relative abilities of the investing class, the entrepreneurial class, and the wage earners in ensuring that their respective incomes at least keep up with and, possibly, move ahead of the prices of the things they buy.

4. There is another aspect of the keeping-up process which may be quantitatively more significant than the social consequences. The speed with which economic groups are able to recoup losses in their respective shares of income is one of the most important determinants

¹ This study was begun at the Harvard Economic Research Project as part of the project's work on labor requirements and income generation. I have benefitted greatly from discussions with Prof. John R. Meyer and from the patient assistance of Mrs. V. McK. Nail, who prepared the raw data, and Miss Beverly Scott, of the Littauer Statistical Laboratory, who carried out the final computations.

² J. M. Keynes, "Social Consequences of Changes in the Value of Money (1923), in *Essays in Persuasion*, London, 1957, pp. 80-104.

of the speed of inflation. Putting this in "cost-push" terms, we should say that the speed with which workers are able to respond to cost-of-living changes and entrepreneurs to changes in wages and the cost of materials will determine the rate at which prices rise in the economy. The cost-push theories imply that once any major cost has gone up and stayed up, other prices will respond, creating a second round of cost increases, and so on round again. The novelty in such explanations has been that they explicitly do not require that demand for commodities or labor be increasing or pressing upon capacity. Indeed, we know that it is possible for prices to continue rising in a period of falling output and increasing unemployment. The cost-push theories have been developed to explain the experience of declining industries and the rigidity of prices in recession years in the post-war inflation. If it is true that trade unions are responsible for the major cost-push, then we should expect the wage share in produced income to increase. Only if prices were raised in proportion, not simply in absolute amount, to compensate for the wage increase would the wage share remain stable. That is, if gross profits are also going up, the wage share will not increase significantly, and the trade union cost-push explanation must be held in serious question. As a matter of fact, this is precisely what the study shows: the share of wages in manufacturing value added remained remarkably stable from 1947 to 1956.

5. In the orthodox demand-pull explanation, an increase in demand more rapid than the increase in productive capacity causes prices to rise. Then, especially if the money supply is allowed to increase rapidly, or people are willing to hold money substitutes, incomes will increase and, subsequently, so will expenditures. If wages do not respond quickly to the consumer-price rise, profits and investment demand will increase. If this explanation, taken alone, were true, *declines* in employment and demand would be sufficient to stop the rise in prices. The aggregate demand-pull theory implies that the wage share declines as wages lag behind prices.

6. On the individual industry level, the demand hypothesis is less simple. We may interpret it to mean that wages and prices in specific industries responds to demand pressures upon the industries. Or, we may interpret the wage-price behavior asymmetrically over the cycle; that is, during economic expansion wages everywhere follow the increase in the most rapidly expanding sectors, while in the downswing, only severe overall unemployment will make specific wages responsible to specific industry demands.

7. Neither the simple cost-push nor the simple demand-pull explanation is wholly satisfactory. Once inflation starts, especially if there are downward rigidities in important wages and prices, it is almost impossible to say how the inflation got started or is maintained. The discussion tends to break down into a chicken-or-egg controversy or—and this is more important—into a struggle for public policy aimed at one or another set of villains. Actually, both processes are likely to be going on simultaneously, each feeding the other, in different parts of the economy. Operationally, the question of cause and effect should not be one of relative villainies, but of what policy weapons will be effective in stopping the steady rise in prices. Unless we are willing to impose direct controls on wages and prices, the way to stop inflation must be found by influencing those economic

conditions which influences the short-run movements of wages and prices. Finding cures, in this sense is equivalent operationally to finding the cause of inflation.

8. The evidence on the distribution of national income in the post-war inflation does not show any large-scale shift among the major income categories. The wage and salary share gained about 4.5 percentage points between 1947 and 1956; corporate profits did not change perceptibly; the relative loss fell heavily upon unincorporated business. The reduction in the income of unincorporate business is hard to assess, for two reasons: (1) It is not at all clear how much of the income of proprietors of unincorporate business ought to be counted as wages and how much as entrepreneurial returns; (2) the sharp decline in the farm income share is accounted for largely by the withdrawal of farm proprietors from agriculture to other occupations. During World War II, the increase in farm proprietors' income (personal income per recipient) was more than twice as rapid as the increase for nonfarm proprietors and more than three times the employees' gain. The relative decline after the war years may, therefore reflect some catching-up on the part of employees.³

9. Within the corporate profits share there are other ambiguities. The most important possible source of error arises from the use of historical values as the base of depreciation charges in a period of rising replacement costs. In 1947, it is estimated by the Machinery and Allied Products Institute, the ratio of current prices to average prices underlying historical-cost depreciation of plant and equipment was 1.44; in 1956, it fell to 1.31. In manufacturing, the ratio declined from 1.54 to 1.38, between 1947 and 1955. The difference between the share of property income in manufacturing net income under current value as opposed to book value depreciation is an almost constant 2 percent. There are two observations to be made on the basis of this data: (1) Profits net of depreciation charges will be overstated in the light of historical changes in plant and equipment costs. Gross profits will contain a larger part necessary to provide for replacement than would appear in the income accounts. (2) To the extent that accelerated depreciation arrangements, such as the sum-of-the-digits method, do not compensate for these changes in replacement costs, manufacturing corporations are pressed to add to their markups over direct costs an amount sufficient to provide for the added cost of new equipment.⁴

10. When we turn to the manufacturing sector the appearance of stability in the wage and salary share becomes even more striking. Between 1947 and 1956 the share of total compensation of employees in value added (which is gross of depreciation) increased from 53.4 percent to 55.2 percent. Within the period, however, the short-run variation was much wider. In 1949 the wage and salary share rose to 56.7 percent and in the following year, fell back to 53.4. The share rose again until in 1953 and 1954 it was 56.4 percent, after which a decline of 1.6 percentage points occurred.

³ Cf. G. L. Bach and A. Ando, "The Redistributive Effects of Inflation," *Review of Economics and Statistics*, February 1957, especially, pp. 4, 5.

⁴ Department of Commerce, *Survey of Current Business*, November 1956, pp. 11, 20, and Machinery and Allied Products Institute, *Capital Goods Review*, No. 29, quoted in Joint Economic Committee, "Productivity, Prices, and Incomes," Washington, 1957, pp. 99-101.

11. The proportion of value added going to production workers as opposed to the share of all employees, declined markedly from 42.7 percent in 1957 to 37.3 percent in 1956. Part of this decline was due to the rapid increase in the number of administrative and professional workers in industry. In 1947, salaried overhead labor made up 16.6 percent of the manufacturing work force. The proportion was up to 23.5 percent by 1956. The growth of salaried employment in manufacturing was 55 percent between 1947 and 1957, more rapid even than the increase in trade and service employment. The corresponding relative decline in the employment of production workers was almost sufficient to account for the fall in their share of value added; in addition, the current average annual earnings of nonproduction workers grew about 5 percent more rapidly over the decade. The increase in the share of value added that was paid out in compensation of employees over the period, then, was partly due to the shift to higher salaried administrative personnel; another part was due to the more rapid increase in the current earnings of salaried workers.

12. From 1947 to 1953, production workers' wages and administrative salaries increased at about the same rate. Then, in the 1953-54 recession, average wage earnings fell, while administrative salaries continued to rise. Some of the drop in wage earnings was the result of shorter hours and layoffs, of course, but even after the contraction ended, salaries rose more rapidly than production wages. This difference in behavior is symbolic of a number of changes that have taken place as a result of the change in proportions between wage and overhead employment. Total labor costs show much less flexibility over the cycle as the relatively fixed, overhead component increases. Similarly, the gap between unit labor costs and physical productivity measures becomes greater as occupational proportions shift. Unit payroll costs over the period increased to a significant extent as a result of the shift to higher paid administrative workers. One result is that year-to-year output/unit labor indexes become much less significant for the explanation of inflationary wage pressures. A second result of these shifts is that the downward rigidity of earnings levels is increased, adding to the general cost-push influence. For these reasons, the data on production and nonproduction workers have generally been kept separate in this study.

13. In the remaining paragraphs two questions will be answered. First, what were the mechanics of the change in the employees' share of value added in manufacturing? Second, what is the significance of these results, in terms of the pace of inflation? In the next section, we will consider wage changes, in terms of specific products.

14. In order to show how the wage and salary share moved in the postwar inflation, we will break the value added into its components and show mechanically how the different parts must move in order that the wage and profits shares should change. Value added by manufactures is measured by subtracting the cost of materials, supplies, containers, fuel, purchased electric energy, and contract work from the value of shipments of manufacturing establishments. What remains can be broken down roughly into compensation of employees on one hand, and profits plus depreciation, on the other. Let—

p_i = the price of the i th manufactured commodity.

q_i = the quantity of the i th manufactured commodity shipped during the year.

w_i = the average annual earnings in the i th industry.

l_i = the average number of employees in the i th industry during the year.

α_i = the ratio of number of employees to physical quantity of the i th commodity.

That is, $l_i = \alpha_i q_i$ and

l_i

$/q_i = \alpha_i$, the input of labor required per unit of output.

p_m = the price of raw materials.

m_i = the quantity of materials used in the production of one unit of the i th commodity.

k_i = the markup over the cost of labor and materials in the price of the i th commodity.

Then, the value of the commodity produced by the i th manufacturing industry is

$$p_i q_i = q_i [1 + k_i (w_i \alpha_i + p_m m_i)].$$

The unit value added is

$$P_i - p_m m_i = w_i \alpha_i + k_i (w_i \alpha_i + p_m m_i),$$

and the share of wages and salaries in value added in the industry is

$$\frac{w_i \alpha_i}{P_i - p_m m_i} = 1 - \frac{k_i (w_i \alpha_i + p_m m_i)}{P_i - p_m m_i}$$

The employees' share is defined in terms of the wage rate, the labor/output ratio, and the markup of prices over material costs. It moves with the wage rate and the labor product ratio and against the markup over direct costs. The indexes for each of these variables for all manufacturing are shown in table 1.

TABLE 1.—Income shares—All manufacturing, 1947–56

A. ALL EMPLOYEES

[1947–49=100]

Year	Wages and salaries Value added		Annual earnings		Output Employment	Unit wage plus salary cost, index
	Percent	Index	Real index	Current index	Index	
1947.....	53.4	96.9	99.3	94.8	98.5	95.9
1949.....	56.7	102.9	103.3	105.2	98.5	102.5
1950.....	53.4	96.9	107.7	110.7	107.8	100.2
1951.....	55.1	100.0	110.7	122.9	109.0	111.1
1952.....	56.0	101.6	114.5	130.0	109.6	116.1
1953.....	56.4	102.4	119.8	137.0	112.1	118.3
1954.....	56.4	102.4	121.7	139.7	110.9	120.5
1955.....	54.8	99.5	127.9	146.4	117.3	119.8
1956.....	55.2	100.2	131.8	153.2	118.1	124.4

B. PRODUCTION WORKERS

Year	Wages Value added		Annual wage earnings		Output Employment	Unit wage cost index
	Percent	Index	Real index	Current index	Index	
1947.....	40.7	100.7	100.6	96.1	96.2	97.7
1949.....	40.1	99.3	102.1	103.9	100.9	100.2
1950.....	38.6	95.3	108.2	111.2	110.0	98.8
1951.....	39.8	98.5	110.8	123.0	110.9	107.3
1952.....	40.1	99.1	114.9	130.4	112.8	109.2
1953.....	40.3	99.6	120.0	137.3	115.5	111.3
1954.....	38.1	94.3	118.8	136.4	117.7	108.4
1955.....	37.4	92.5	125.6	143.8	123.9	108.9
1956.....	37.3	92.2	129.1	150.0	125.8	112.0

C. PROFIT MARGINS AND VALUE ADDED

Year	Value added Value of product Index	Profit margin on sales, index
1947.....	93.3	99.6
1949.....	103.8	95.4
1950.....	105.0	108.0
1951.....	115.7	87.0
1952.....	114.8	75.7
1953.....	114.3	74.3
1954.....	115.0	82.7
1955.....	118.6	94.0
1956.....	121.3	84.2

Sources: Wages and salaries, value added, output/employment indexes: Census of manufactures. Value added/value of product, unit wage and salary costs: "Productivity, Prices, and Income," table 51. Profit margins: First National City Bank, in "Productivity, Prices, and Incomes," table 22.

15. How have these variables moved during the 1947-56 period? The share of wage earners and salaried employees increased from 1947 to 1949 and then fell sharply in the first year of the Korean war. In 1951 the employees' share began to improve and continued to rise until in 1953 the level of 1949 had almost been recovered. There was a decline in 1955 and some recouping in the following year. The gain in the wage and salary share over the period was almost two percentage points.

16. If we separate the production workers from the administrative group, the pattern changes considerably. Between 1948⁵ and 1950, unit wage costs fell, since real output per production worker rose more rapidly than production workers' earnings. At the same time the markup of prices over material costs and, therefore, the profits margin continued to rise. The wage share fell by more than three percentage points between 1949 and 1950. In 1954 and 1955, a similar thing happened: unit wage cost fell, this time under pressure of declining employment, while output per man-year and the value added markup continued to rise. Over the whole period, the production workers' share of value added declined by about 3.4 percentage points.

17. As the economy recovered after the recessions of 1949 and 1954, the profit margins made the first gains. Much of the shift in favor of profits was due to the reduction in unit overhead costs as output increased from levels far below plant capacity. And some of the gain represents the fact that unit production wage costs fell at the start of both recessions and did not turn up again until the second year of recovery. By contrast, wholesale prices responded very quickly to the revival of demand in 1950, and the value added markup did not decline at all. Between 1954 and 1955, total unit labor costs fell, while unit value added rose.⁶ It seems clear from this evidence that in 1950 the increase in profit margins provided much of the inflationary pressure. In between, from 1951 to 1954, the rapid rise in unit wage and salary costs was achieved at the expense of profit margins; wholesale prices and unit value added did not change noticeably. In 1955, profit margins rose and the wage and salary shares fell. In 1956, the

⁵ In 1948, the unit (production worker) wage cost index was 102.5.

⁶ Unit production labor costs fell sharply from 1953 to 1954 and stayed down until 1956.

unit wage and salary costs rose and the employees' share recovered slightly, at the expense of profit margins.

18. Even in this short period between 1949 and 1956, there seems to be a significant cyclical pattern: in the recession years, wage earnings lost ground and then, after a lag of about 1 year, revived and pressed on to gains clearly in excess of productivity increases. Over the decade, current wages increased more rapidly than output per unit of labor. This, given the relative stability of the profit ratio, would be sufficient to explain the pressure upon commodity prices. But it is at least doubtful that prices would have risen by as much had there not been the cyclical pattern of loss in the wage share and accelerated recoupment twice in the decade. This evidence supports an interpretation of the cost-push process in which wages and profits alternate in capturing short-run gains (with wages lagging somewhat in the recoveries), but move together when the changes are averaged over the cycle.

19. When we consider the individual manufacturing industries, the pattern appears to be more varied and it becomes possible to answer more specific questions about the relationships among wages, profits, and prices. The frequency distribution of first differences between the share of compensation of employees in 1947 and 1956, computed from the three-digit industry distributions, is shown in table 2A; corresponding data for production workers is shown in table 2B. The frequencies are given in numbers of employees and production workers, respectively.

TABLE 2.—Frequency distribution changes in share of wages and salaries in manufacturing value added, 1946-57

A. ALL EMPLOYEES

[Thousands]

$\left. \begin{array}{l} \text{Earnings} \\ \text{Value added (1956) -} \\ \text{Earnings} \\ \text{Value added (1947)} \end{array} \right\}$	<-.05	(-.05)- -(-.03)	(-.03)- -(-.01)	(-.01)- -(-.01)	(+.01)- -(-.03)	(+.03)- -(-.05)	>+.05
All manufacturing.....	2,980	1,966	1,958	3,219	1,793	2,025	2,516
Industries 20-29.....	507	114	1,004	1,210	751	1,580	2,359
Industries 30-39.....	2,473	1,852	954	2,009	1,042	446	157
Durable goods sector (24, 25, 32, 33, 34, 35, 36, 37, 38, 39).....	2,455	1,474	962	2,269	1,060	424	770
Nondurables sector (20, 21, 22, 23, 26, 27, 28, 29, 30, 31).....	525	492	996	950	733	1,602	1,862
Consumer durables sector (227, 251, 301, 358, 362, 366, 371).....	895	212	0	762	0	54	0

B. PRODUCTION WORKERS

[Thousands]

$\frac{\text{Earnings}}{\text{Value added (1956)}} - \frac{\text{earnings}}{\text{value added (1957)}}$	<-.05	(-.05)- -(-.03)	(-.03)- -(-.01)	(-.01)- -(-.01)	(+.01)- -(-.03)	>+.03
All manufacturing.....	4,371	2,319	2,431	1,430	561	2,104
Industries 20-29.....	513	519	1,414	1,189	435	2,029
Industries 30-39.....	3,858	1,800	1,017	241	126	75
Durable goods sector (24, 25, 32, 33, 34, 35, 36, 37, 38, 39).....	3,714	1,849	1,017	327	98	445
Nondurable sector (20, 21, 22, 23, 26, 27, 28, 29, 30, 31).....	657	470	1,414	1,103	463	1,659
Consumer durables sector (227, 251, 301, 358, 362, 366, 371).....	893	226	371	417	0	

Source: Census of manufactures, computed at Harvard economic research project.

20. Recall that the wages and salaries share increased by 2.8 percent, from 0.534 to 0.552 of value added in manufacturing over the decade. The distribution of changes does not show any concentration about that figure. There is a mode in the interval of small changes—that is, less than 1 percent difference in either direction. But there are two additional peaks: one at the upper end of the scale—changes of more than 5 percentage points, and another, somewhat larger, at the negative end of the scale. When we split the distribution into two industry groups—those producing nondurable goods and those producing durables—a more significant pattern emerges. The nondurable-goods group displays a definite peak at the high positive end of the scale. The durables sector has a peak in the small-change bracket and another, larger one in the negative open-end bracket, that is, the bracket containing losses in share that were greater than 5 percentage points. There was evidently a real difference in the wage-profit relationships between the two major groups.

21. Within the durables sector, motor vehicles and iron and steel accounted for three-quarters of the frequency at the open end of the negative scale showing losses in wage share. The decline in employees' share in blast furnaces and steel mills (331) was almost 16 percentage points;⁶ the decline in motor vehicles (371) was almost 10 points. In both cases there was a fairly steady downward trend over time, with a minor revival in 1952 in the basic steel wage and earnings share, and a somewhat stronger rise in 1953 in the employees' part of the motor vehicles distribution. There was less concentration in the nondurables industry distributions, although broadwoven fabrics (223) and men's furnishings (232) are major industries that showed large gains.

22. For production workers, the wage share in value added declined from 40.7 percent to 37.3 percent. However, when the distribution of changes is considered in more detail, we find a similar pattern to that among all employees, but with a more decisive concentration at the lower ends of the scale. There is a minor peak in the frequency of gains of greater than 3 percent, contributed almost entirely by the nondurables. There was one strong gain in the production workers' share in the durable goods sector—by the lumber and basic products wage earners.

23. From the definition of the wage share given above, it would be expected that the decline in the production workers' share might be partly accounted for by some difference in the growth of salaried workers between the two sectors. There is a slight difference, in the expected direction; nonproduction workers employment increased a little more in the durables industries. The gain was from 16.3 to 23.4 percent in durables, compared with a change 16.4 to 22.7 in the nondurables (from 1947 to 1957). The gain in salaried employment the durables, however, was not concentrated in the primary metals or motor vehicles industries, where the reductions in the production wage share were heaviest, but in ordnance (which is not included in this study), aircraft, and machinery.⁷ There does not seem to be much of an explanation in this change.

⁶ If the employment costs as a percent of revenue given in the Eckstein-Fromm Study, table 11, are translated into wage costs as a share of value added, the agreement of these two estimates from different data sources becomes reassuringly clear.

⁷ Cf. Murray Wernick, "Occupational Shifts in Manufacturing Employment: Some Implications for Productivity and Unit Labor Cost Measurements." Speech before the Cleveland chapter, American Statistical Association, Mar. 4, 1958, mimeographed, table 4.

24. The major declines in the share of employees' compensation occurred among the durable goods producers, and in particular, in the primary metals and automobiles sectors. Let us review the major elements of change in the shares identity for these industries. Average earnings of production workers increased about 10 percent faster in the durables than in the nondurables. Earnings in basic steel, in turn, went up about 10 percent faster than the average for all durables; earnings in the automobile industry went up a little less rapidly than the durables average. Output per production worker man-hour went up more rapidly in durables than in all manufacturing and more rapidly in basic steel than in all durables. A crude unit labor cost index shows an increase of at least 10 and probably 15 percent greater for nondurables over the decade.⁸

25. The profit margins are somewhat more complicated. Between 1947 and 1956, the ratio of net profits before taxes to sales, for 200 large manufacturing corporations, went from 13.3 percent up to a peak of 17.9 in 1950, and then down to 12.9 at the end of the period. The durable goods manufacturers in the group earned profits at generally lower rates and the nondurables rate was correspondingly higher. The rates are quoted in table 3.

TABLE 3.—*Profit margins, 200 large manufacturing corporations*

[Profits before tax as percent of sales]

Year	All	Durables	Nondurables	Year	All	Durables	Nondurables
1947.....	13.3	11.9	15.5	1952.....	13.4	12.6	16.3
1948.....	14.4	13.2	16.3	1953.....	13.2	12.5	14.6
1949.....	13.8	13.4	14.5	1954.....	12.5	12.0	13.4
1950.....	17.9	13.1	18.1	1955.....	14.7	14.7	14.8
1951.....	16.8	15.9	18.2	1956.....	12.9	12.3	14.0

Source: Board of Governors, Federal Reserve System, in "Productivity, Prices, and Incomes," tables 34, 35, 36.

26. In order to compare the basic steel and automobile margins to those for all manufacturing, it is necessary to turn to yet another set of figures. In this series, which is again net of depreciation and therefore not directly comparable to the value added shares, net profits as a proportion of sales in all manufacturing (except newspapers) went from 11 to 9.7 percent. The ratios in primary iron and steel went from 10.9 to 13.2 percent over the period and the ratio in motor vehicles manufacturing from 10.7 to 10.8 percent. There were intermediate peaks in 1950 and 1955 in all three series, but the automobile earnings in those years were significantly higher than the ratios for basic steel and all manufacturing. The automobile profit ratio was 15.1 percent in 1955.⁹

27. It seems to me to be a fair interpretation of this data to say that the decline in the share of employees compensation in durable goods production is not the combined result of unusual productivity gains,

⁸ Sources: Production worker wage earnings. Bureau of Labor Statistics, tables 44, 45, Productivity, Prices, and Incomes: Production indexes, Board of Governors of the Federal Reserve System. Federal Reserve Bulletin, December 1957.

⁹ Source: Federal Trade Commission—Securities and Exchange Commission, Quarterly Financial Report for Manufacturing Corporations, quoted in Productivity, Prices, and Incomes, tables 33, 149, 189.

which would have held down unit labor costs, but of increases in profit rates in steel and automobiles that were out of line with those generally reported in the rest of the group. The greater than average wage gains in these industries were not made at the expense of profits, but were accompanied by increases in the profit margins.

28. The causal link between the factor share distribution and the pace of inflation in manufacturing will not be analyzed in detail here; instead I shall simply outline some of the more apparent relationships. In the nondurables, where price increases were relatively low, the wage share gained at the expense of gross profits. The increase in unit labor costs and the increase in profit margins, which together would be expected to push prices upward, were balanced for most of the period by declining material prices, especially in the food sector. In both consumer durables and producer durables, the unit labor costs appear to have lagged as productivity increases compared more favorably with wage increases. For most of the group, profit margins were also lower than the manufacturing average. But in steel and automobile production, the relatively large wage increases were matched by very high profit margins. Under the double impact, prices in these sectors rose more rapidly than output and, especially in the steel case, reverberated throughout the economy.¹⁰

29. Finally, I will use the detailed wage data in order to answer some questions about the determination of wages in the postwar inflation. What has been said thus far seems to indicate a cost-push phenomenon in which profits and wages in succession, after the recessions of 1949 and 1954 pushed up costs and prices in manufacturing. The push has not been uniform, especially from profits, but the best explanation seems to revolve about the combined behavior of the two income shares. A reasonable analytic scheme, suggested by the aggregate data, might be constructed along the following lines. Assume that wage earners' demands are responsive to changes in the cost of living, the rate of profits, and the increase in output per unit labor. They will resist any reduction in their real wages, but they will also attempt to maintain their share of the total income produced; that is, they will respond to real increases in output per unit labor or to profit rises especially those that are due to price changes in their own products. Assume similarly that entrepreneurs attempt to maintain stable profit margins over direct costs.

30. Let us say that wage earners have a consumer price target toward which they aim. That is, wages are expected to stay in close relationship to rises in the cost-of-living index. Wage changes will respond, with a lag, to negative deviations from the desired relationship. The pace of inflation is determined by the deviations from desired wage-price (or wage-profit) relationships which, in turn, create pressures for greater increases in the succeeding period.¹¹ But

¹⁰ The relationship between steel wages and profits and the postwar inflation is analyzed in detail in Study Paper No. 2, "Steel and the Postwar Inflation," by Otto Eckstein and Gary Fromm. In a simple input-output computation carried out at the Harvard economic research project and quoted by John Dunlop, in "Policy Problems: Choices and Proposals," American Assembly. Wages, Prices, Profits, and Productivity, pp. 151, 153, I suggest some effects of price changes in steel and other major products upon costs throughout the economy. Using a diffusion index ratio of intermediate deliveries of a sector to its total gross output), it was shown that fabricated structural metal products, iron and steel and lumber and wood products, stood among the first 6 out of a total 45, industry table, in their relative ability to spread cost changes through the economy. In terms of their wage costs, in particular, fabricated metal products and iron and steel stood 7th and 13th in relative effects (*potentially*, not in terms of actual relative wage change) upon the consumer index. The Eckstein-Fromm study paper contains a much more detailed input-output analysis of the effects of steel costs upon inflation.

¹¹ Cf. A. J. Brown. "The Great Inflation," 1959-1931.

wages will not simply respond to consumer price changes; they may overcompensate as a result of actual or threatened demand declines due to the lagged price increase. The remainder of this study is an attempt to find out to what extent the degree of over or undercompensation is related to demand pressures and productivity changes.

31. From the complete list of three-digit Census of Manufacturing industries, for the years 1949 to 1956, 61 industries provided continuous data from which several linear multiple regression equations attempting to explain specific wage changes were fitted by single-equation least-squares. (Every possible observation of year-to-year change was used in the original correlation matrix.) There were, therefore, seven cross-sections combined over approximately 61 industries.¹²

A selection of the correlation coefficients with (1) changes in average wage earnings, all employees; (2) changes in average wage earnings, production workers; and (3) the three-digit industry price index are shown in tables 4 and 5.¹³

TABLE 4.—*Simple correlation coefficients: Annual changes, all 3-digit industries, 1949-56*

	Change, wages and salaries	Change, production workers' wage	Wholesale price index
Mean value.....	104.83	104.94	122.95
Standard deviation.....	4.41	5.57	18.39
Wholesale price index.....	.1262	.0800	1.0000
Change: Deflated output.....	.0447	.0398	-.0068
Change: All employees.....	.0382	.1230	.0160
Change: Production workers.....	.0719	.1475	.0036
Change: Output per unit, all labor.....	.0596	.0365	-.0025
Change: Output per unit, production worker.....	.0209	.0289	-.0144
Change: Wages and salaries.....	1.0000	.7154	.5967
Change: Production workers' wages.....	.7154	1.0000	.6131

Sources: Census of manufactures, computed at Littauer Statistical Laboratory. Wholesale price indexes, Bureau of Labor Statistics.

¹² There is no reason to believe that the omissions were systematic among the variables finally chosen. The industries are listed in table 5.

¹³ The wage earnings are annual averages for all employees and production workers derived from the census total salaries and wages series. It includes all forms of compensation (including paid holidays and vacations) except the employer social security and unemployment insurance payments, and other nonpayroll costs such as pension plans, group insurance premiums, and workmen's compensation, and is therefore a closer approximation to total labor input costs than the average hourly earnings or straight time hourly earning series. The price indexes are derived from the input-output industry-base series developed from the Wholesale Price Index by the Bureau of Labor Statistics, Division of Productivity and Technological Developments, and made available to the Harvard economic research project.

TABLE 5.—*Simple correlation coefficients: Average annual changes, all 3-digit industries, 1949-56*

	Average annual change, wages and salaries	Average annual change, production workers' wages	Average wholesale price index
Mean value.....	104.70	104.82	123.11
Standard deviation.....	1.86	2.33	16.11
Wholesale price index.....	.3306	.2527	1.0000
Average change: Deflated output.....	.0420	.0142	.0603
Average change: Production workers.....	-.0548	-.0472	.1025
Average change: Output per unit, all labor.....	-.0935	-.1107	.0205
Average change: Output per unit, production worker.....	-.1258	-.1579	.0161
Average change: Wages and salaries.....	1.0000	.8170	.3306
Average change: Production workers' wages.....	.8170	1.0000	.2527
Average change, all employees.....	-.0757	-.0666	.1248

NOTE.—Industries included in sample: 205, 212, 213, 223, 226, 234, 241, 261, 271, 272, 275, 276, 277, 291, 301, 302, 303, 309, 311, 312, 313, 316, 321, 322, 323, 324, 327, 328, 331, 332, 334, 335, 336, 339, 341, 347, 352, 353, 355, 362, 363, 364, 365, 374, 375, 379, 381, 382, 383, 385, 386, 397, 211, 224, 235, 252, 254, 264, 265, 266, 267.

Source: Census of manufactures, computed at Littauer Statistical Laboratory. Wholesale price indexes, Bureau of Labor Statistics.

32. One is immediately struck by the remarkably low degrees of relationship displayed between changes in employee compensation and price indexes, on the one hand, and the labor and commodity demand variables, on the other. In an attempt to avoid cyclical effects, which would be expected to distort the short-run demand relationships if there were downward rigidities, changes in the same variables were averaged over the 1949-56 span and the long-run average changes were correlated over the same sample of industries. The same selection is shown in table 5. The same remarkably low degree of relationship is evident.

33. An explanation that must be considered, of course, is the possibility that significant relationships are hidden. Strong negative relationships with other independent variables may mask a relationship between the dependent and a presumably obvious independent influence. In such cases, significant correlations may appear when the relation with the other variables have been allowed. Two multiple regression equations for the whole array are reproduced below. They were designed to be rough tests of the demand-pull hypothesis.

34. The first multiple regression equation, shown in table 6, was an attempt to explain the average annual wage and salary increase in terms of (1) the average annual real output change; (2) the average annual change in real output per unit labor; (3) the average annual change in employment; and (4) the mean price index, over the period 1949-56 for the specific three-digit industries. As with the simple correlation coefficients, the results were remarkably insignificant. Wage changes at the relatively detailed (i.e., more homogenous three-digit) industry level are not explained by demand pressures (independent variables 1 and 3) or by productivity changes within the industry itself (independent variable 2).¹⁴

¹⁴ It is perhaps overdue at this point in the study to point out that the use of the word "productivity" to mean simple variations in output/labor ratios, while customary, is incorrect. It would be better to restrict measures of productivity, so called, to changes in the unit requirements of capital, labor, and materials, combined. It would be still better to drop the common usage and restrict the use of "productivity change" to those changes which can be properly identified as shifts in the production function, as opposed to movements along the function. See, e.g., the attempt to derive measures of technological change, in the strict sense, by Robert M. Solow, "Technical Progress and the Aggregate Production Function," *Review of Economics and Statistics*, August 1957, pp. 312-320.

TABLE 6.—Regression equation

[Average annual wage change, all employees, industry i , 1949-56 = B_1 (average annual real output change), i + B_2 (average annual change output per unit labor), i + B_3 (average annual change, all employment), i + B_4 (average wholesale price index), i]

Independent variable	Regression coefficient	Partial correlation coefficient	Beta coefficient	Standard error of Beta coefficient
Average annual output change, i	0.0060	0.0429	0.0399	0.1242
Average annual output/labor change, i	-.0128	-.1162	-.1090	.1244
Average annual employment change, i	-.0427	-.1322	-.1252	.1254
Average wholesale price index, i	.0401	.3486	.3484	.1252
Regression constant = 1.....	105.46			
Standard error of estimate.....	1.72449			
Multiple correlation coefficient.....	.3695			
Coefficient of multiple determination, R^2	.1365			

NOTES

Degrees of freedom = $n - 5 = 56$.

Industries included in sample: 205, 211, 212, 213, 224, 226, 234, 235, 241, 261, 264, 265, 266, 267, 271, 272, 276, 277, 291, 301, 302, 303, 309, 311, 312, 313, 316, 321, 322, 323, 324, 327, 328, 331, 332, 334, 335, 336, 339, 341, 347, 352, 353, 355, 362, 363, 364, 374, 379, 381, 382, 383, 385, 386, 397, 375.

The coefficient of multiple determination for wage changes was $R^2 = 0.1365$, almost all of which was contributed by the addition of the mean price index to the regression. The multiple correlation coefficient was $R = 0.3695$. The wage changes are negatively, though weakly related to changes in output per unit labor and employment. The negative coefficient between wages and employment implies that wages have continued to rise even when employment has fallen behind in a given sector. The negative coefficient when changes in output per unit labor is the independent variable means that specific industry unit labor improvements count for less in terms of wage gains than the maximum improvement or at least the average improvement. This is not, by any stretch of the imagination or will to believe, a result to support the demand-pull hypothesis as an explanation of wage increases in inflation.

35. The second equation (table 7) used the same variables, ordered somewhat differently, in an attempt to relate the rate of specific price increase in the three-digit industries, first, to the wage change and then to the demand variables, taking productivity into account again. The coefficient of determination for prices upon wage changes was $R^2 = 0.1093$. Addition of real output change and productivity change added virtually nothing; the addition of annual employment change to the independent variables brought the coefficient of multiple determination up to $R^2 = 0.1359$. Among the partial correlation coefficients, that is, the measures of relationship between the dependent and single independent variables when the other independent variables are fixed, only the price-wage relationship ($_{12\ 345} = 0.3486$) and the price-employment change relationship ($_{15\ 234} = 0.1635$) approach economic significance.

TABLE 7.—*Regression equation*

[Average wholesale price index industry i , 1949-56 = B_1 (average annual wage change, all employees), $i+B_2$ (average annual real output change), $i+B_3$ (average annual change, output per unit labor), $i+B_4$ (average annual change, all employment), i]

Independent variable	Regression coefficient	Partial correlation coefficient	Beta coefficient	Standard error of Beta coefficient
Average annual wage change, i	0.30279	0.3486	0.3487	0.1252
Average annual real output change, i	-.00150	-.0122	-.0113	.1243
Average annual change, output per unit labor, i	.00647	.0673	.0631	.1250
Average annual change, all employment, i	.04587	.1635	.1549	.1249
Regression constant.....	247.99			
Standard error of estimate.....	14.9782			
Multiple correlation coefficient.....	.3695			
Coefficient of multiple determination, R^2	.1359			

NOTE.—Degrees of freedom = $n-5=56$.

36. These are rough-and-ready tests. From the matrix of simple correlation coefficients r , it did not appear that multicollinearity was a problem in these data. But the likelihood of errors of observations for averaged year-to-year change indexes is very serious. Still it is difficult to interpret these results as showing anything but that manufacturing wages and prices during the recent inflation have been essentially free of demand influence at the specific industry level, and that prices appear to be significantly related to combined profit and wage increases. The evidence presented earlier and the negative correlations between changes in wage share and changes in wage earnings imply that price rises have not been simply related to wage costs, but have been accompanied by gross-profit increases.

CONCLUSIONS

This study has examined the behavior of wages and gross-profit margins among the 131 Census of Manufacturing three-digit industry groups. Its purpose was, first, to find out whether wage shares had gained or lost in the course of the postwar inflation. Second, the specific industry patterns were to be used to investigate the way in which different sectors, with different output and price behavior, were struck by the inflation. Finally, some of the data was used to test a very simple version of the demand pull hypothesis on wage and price increases. A summary of the results follows:

(1) The share of production workers in value added declined from 1947 to 1956, largely as the result of the relative reduction in production worker employment. Salaried clerical, administrative, and technical personnel experienced a gain in their share, in part as the result of an increase in proportions, partly as a result of more rapid salary increases.

(2) Among production workers and all employees, there was a clear-cut pattern of gains in the wage and salary share in the non-durable sector and losses in the durables, with the relative wage loss concentrated especially in the basic steel and automobile industries. The declines in the durables were balanced, arithmetically, by the gains in gross profits; in steel and auto production the net profit margins showed unusual gains during the period.

(3) The gross-profit increase in durables includes depreciation allowances. This avoids the problem of distortion in the profits-depreciation split which is inherent in the use of historical costs and changing amortization procedures. It has been suggested, however, that the rising gross-profit share in basic steel especially is due to the necessity to finance replacement and expansion at continually higher prices. Given the apparent tie between wages and profits and the nature of cost-push, it is at least questionable that increasing profit margins provide the most satisfactory, i.e., least inflationary, method of financing steel changeover and expansion.

(4) The detailed industry data do not give any support to the simple demand-pull hypothesis and limited support to the cost-push explanation. Combined with the overall stability of shares and the alternating pattern of profit and wage gains, the inflationary cost push should be interpreted as a profit-and-wage push, at least in the manufacturing sector.

(5) The results of this study, limited to manufacturing and to specific industry demand pressures, do not bear upon the likelihood that demand pressures elsewhere in the economy might spill over into wage setting in manufacturing. Such a possibility, especially in the pricing of services, could very well set off the inflationary profit-wage alternation described here.

