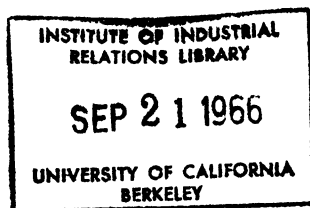

STATISTICS AND ECONOMIC POLICY

by

Ewan Clague

Regents' Lecturer at the University of California, Los Angeles

February-March, 1966



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FOREWORD

In the Spring of this year, the Institute of Industrial Relations finally succeeded, after several previous efforts, in persuading Ewan Clague, who had recently retired as United States Commissioner of Labor Statistics, to accept a Regents' Lectureship at the University of California, Los Angeles. In the month that he spent at UCLA Dr. Clague delivered the five lectures comprising this volume.

Statistics and Economic Policy deals with vital questions of employment and unemployment, wages and salaries, prices and the cost of living, and productivity. All of these subjects are of great importance to a nation that, despite an affluence unsurpassed in the history of the world, has yet to reduce unemployment below four percent of the labor force for a sustained period since 1952. At the same time inflationary pressures are mounting, and the Administration's efforts to secure voluntary compliance by employers and unions with its proposed wage and price guideposts have created further interest in the subjects covered by these lectures.

Dr. Clague is uniquely qualified for the task he has undertaken. An economist by training and a statistician of world-wide eminence, he served as Commissioner of Labor Statistics for eighteen years. During that period he acquired a vast knowledge of the many technical problems which have confronted the Bureau of Labor Statistics. Now, free from the constraints of public office, he has applied that knowledge to some of the underlying issues of economic policy.

The Institute is pleased to make Dr. Clague's lectures available in this volume to a wider audience. The views expressed are, of course, solely those of the author.

Benjamin Aaron
Director
Institute of Industrial Relations

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Lecture I: Employment and Unemployment

At the outset I want to remind you that last year the Bureau of Labor Statistics celebrated its eightieth birthday. The first Commissioner, Carroll D. Wright, was appointed early in 1885, the law creating the Bureau had been passed the previous summer. The fact that 1884 was a presidential-election year stirred Congress to act, but perhaps an equally important stimulus was the business recession of 1884-1885. Following the resumption of the gold standard in 1879, the nation had enjoyed nearly five years of rising prosperity, and many people felt that the postwar (Civil War) economic troubles were over. It was a definite shock to public confidence that a rather sharp business downturn began in 1884. The new Bureau was given a broad range of power to study problems of wages, working conditions, costs and standards of living, relations of labor to capital, and similar issues.

Commissioner Wright was aware of the necessity to make the work of the Bureau a service to Congress and the nation. He investigated a variety of current economic problems and their social consequences. As the public was deeply concerned about the depression, he made his first annual report on cycles of prosperity and depression over a period of 50 years--1837-1886. He failed to find the causes of depressions, and he did not come up with any solutions; but at least he put his findings before the public.

The "Haymarket Massacre" in Chicago occurred the next year, so the Commissioner made his second annual report on strikes and lockouts. He was personally deeply concerned about women and children in the labor force, and he devoted one of his reports to that subject. He found time to make studies of family budgets and of the cost of living. In the early 1890's there was another exceptionally sharp depression, and Congress ordered the Commissioner to make a comprehensive survey of the mechanization of industry and its effect upon employment. Eventually, the Bureau published two volumes on "Hand and Machine Labor," comparing the productivity, wages and labor costs of the 1890's with the comparable data for hand and craft labor fifty years before. This was the first comprehensive study of productivity by any government. These examples from the early days of the Bureau's history portray a service agency using research and statistics to help the nation deal with its economic and social problems, and this tradition has been maintained by the Bureau to the present time.

During World War I the tremendous expansion in shipbuilding and the munitions industries had drawn many workers from rural areas and small towns into the cities. The high wages seemed very attractive to these in-migrants, but they were soon disillusioned by high prices and high rents. To help the government settle the resulting industrial unrest without costly strikes, President Wilson instructed Commissioner Royal Meeker of the Bureau to develop a "Cost of Living Index" to be used in resolving labor-management disputes. A comprehensive study of family expenditures was launched in 1918, and an index became available on a regular basis a few years later.

In the mid-1920's the cost of living had settled down to relative stability, and organized labor had lost interest in that statistic as a source to demand wage increases; but the unions were nevertheless convinced that productivity (output per man-hour) was rising rapidly. The Bureau of Labor Statistics then received some funds and hired young college graduates to develop the field of research and statistics. It was at that time that my major professor at the University of Wisconsin sent me to work at the Bureau upon invitation of then Commissioner Ethelbert Stewart. My assignment was to study the problem of productivity, and I tackled it by developing indexes of output per man-hour for a number of major manufacturing industries from the prewar period of 1914 to the mid-1920's. Those indexes have been extended and expanded to the present time.

The next major development in statistics occurred in the early years of the Great Depression. During the 1920's there were occasional flurries of public discussion on the subject of unemployment, but there were no data to enlighten the arguments. There were monthly statistics of employment and payrolls for a wide variety of industries, as well as biennial censuses of manufacturers, which served as employment bench marks for the monthly Bureau of Labor Statistics series. In response to public concern the Bureau, in 1926, made an unemployment estimate by subtracting the employment figures from the projected upward trend of the labor force. The Bureau arrived at an estimate of about 2,875,000 unemployed.

When the time came for the 1930 Census of Population, Congress authorized the inclusion of some questions on unemployment. It was this event which triggered the "statistical explosion" of the early 1930's. By the time the results of the census were tabulated the economy was deep in depression and public interest was fully alerted. Then a dispute arose within government circles about the classification of certain groups of workers--for example, a man who had recently been laid off but had been told to report back to the factory in, say, two weeks. One school of thought contended that he should be counted as unemployed; the other school argued that he had a job and probably wasn't looking for work, therefore he was not unemployed. In good times this debate would perhaps have remained an academic issue confined to the statistical profession. But unemployment had risen sharply, and the weight of the evidence was on the side of those who argued that the laid-off man had probably never been called back to work and might still be unemployed.

A specialist, Charles E. Persons, had been appointed by the Bureau of the Census to take charge of the unemployment census and its analysis. He took the liberal side of the argument, and when he was overruled he resigned his position with a blast at the Administration. With the election of 1932 in the offing, Persons' resignation was sufficient to throw the problem into politics. The statistics on unemployment, even before they were published, became an issue in the presidential election.

When the Roosevelt Administration came into office in 1933, the quality of statistics in the federal government was high on the agenda of reform. Secretary of Labor Frances Perkins fired the opening gun. No sooner had she taken office than she requested the American Statistical Association to set up an advisory

committee to assist her in improving the statistics of the Labor Department. The idea spread to other departments and snowballed into a major enterprise of the government cooperating with professional statisticians and economists. Secretary Perkins' advisory committee became a branch of the government-wide Committee on Government Statistics and Information Services (COGSIS), whose work became a landmark in the development of statistics in the United States.

For our discussion here we will focus on the unemployment problem. Even though a census of unemployment had been taken, the country had no official unemployment data. Thus various private agencies and individuals plunged into the task of estimating unemployment. Since they all had to use essentially the same method--subtracting employment figures (which had been expanded and improved) from estimates of labor force trends--the monthly swings of the half-dozen series were often the same, but the levels varied widely. In the depths of the depression the estimates ranged from a little more than 10 million to nearly 15 million.

When the federal government turned the administration and financing of unemployment relief back to state and local agencies in 1935, it assumed responsibility of providing work for the employable unemployed through the WPA, the CCC, and the regular public works program--the PWA. The Administration then found it necessary to devise some measure of counting the unemployed. The first attempt was the "voluntary self-census" in October, 1937, conducted by the WPA through report or registration forms made available in post offices. The response was excellent, and several million unemployed were tabulated, classified and analyzed. But there were two defects: First, there was no way of gauging the accuracy of the results--what proportion of the total unemployed had registered and how representative were those who had? Second, by the time the figures were made available for public use, they were out of date; and to make matters worse the economy was then sinking into the recession of 1938. On a small scale the scenario of the 1930 unemployment census was re-enacted.

Harry Hopkins then turned to his statisticians and asked them to devise some system of measuring current unemployment. They came up with the "household survey." In simple terms, this meant visiting a carefully selected sample of households throughout the country and obtaining from the people themselves the answers to questions designed to show whether a household member was at work, looking for work, or outside the labor force. The results would then be "blown up," as we statisticians say, to represent the population as a whole, using population projections from the latest census. However, by the time this system went into operation World War II had started and the WPA came to an end. The Bureau of the Census took over the system and conducted it as part of a current population survey.

When the war was nearing its end, the prevailing opinion among economists and public officials pointed to the danger of mass unemployment during the reconversion to peace-time industry. This thought was coupled with memories of persistent unemployment and stagnant economic growth during the decade of the 1930's. Anxieties of both kinds triggered public demand for "full employment" legislation. The result was the Employment Act of 1946, which, in effect, designated the unemployment figures as the key guide to public policy in the postwar economy.

We might pause here to ask why so many able economists misread the situation at the end of World War II. Of course, the answer to that question is complex, but there are a few simple points which help explain what actually happened. First and foremost, in my opinion, was the postwar inflation of prices. All during the war, government economists wrote and talked about the developing "inflationary gap" which was created by the high incomes of wartime full employment coupled with rationing and restricted spending. During the war this gap was filled by purchases of war bonds, but when peace came the bond-buying fell off. To make matters worse, many war bonds were cashed in and the money used for consumer purchases. This sudden excess demand shot prices upward when controls were taken off. In the subsequent inflation, 1946-1948, jobs were plentiful and unemployment averaged only about four percent. However, forecasters failed to make enough allowance for all of these factors.

One other important point is that when the immediate postwar boom was ending in 1949, this nation (and others) did not pursue a policy of deflation such as had been adopted after previous wars. Thus in 1920, the Federal Reserve Board had raised the discount rate and punctured the boom after World War I. In 1923 Great Britain had restored the prewar value of the pound in foreign exchange and thereby committed her economy to a decade or more of heavy unemployment. But in 1949, in similar circumstances, the pound was devalued. In brief, neither the United States nor any other of the leading industrial nations had undergone this time the postwar deflation of prices which typically occurs after wars. Possibly the full employment policy was a factor in that decision. In general, wartime (and postwar) price increases have been validated, not liquidated.

There was a brief period, in the early days of the Eisenhower Administration, when the policy seemed to hang in balance. Irritated by what it considered to be the political activities of the Council of Economic Advisers, the 80th Congress, for a brief time, eliminated the appropriation of the Council and brought its activities to an end. However, within a few months, the danger of a post-Korean recession brought about a reversal of that action. A new, strong Council, chaired by Professor Arthur F. Burns of Columbia University, was appointed and the Eisenhower Administration entered upon a program of anti-recession measures. A tax cut was enacted and a vast roadbuilding program was launched. In the recession of 1958, a large deficit was permitted to develop in the federal budget.

In 1959 an organizational change was made in the government's machinery for handling the unemployment data as well as the correlative employment and labor force statistics. As I indicated previously, the Bureau of the Census had taken over the sample household survey from the WPA. Meantime, with the advent of Social Security, employer reporting of employment figures and pay-rolls had been greatly expanded through a federal-state reporting system operated by the Bureaus of Labor Statistics and Employment Security in cooperation with state agencies (employment security agencies or labor departments). These provided employment data every month for several hundred industries, for all the states, and for about one hundred metropolitan areas.

Since it took longer to process these reports than the census reports on the labor force from the household survey, there were problems of timing. The census came out first which might have been sustainable, had it not been for another problem: the two reports occasionally lent support to contradictory conclusions. There were valid explanations for the differences in nearly all cases, but these could not be made clear to the press and to the public when the reports were issued separately. Therefore, in 1954 an arrangement was made for the issuance of a combined release by the two federal agencies. That took care of the coordination problem, but it gave rise to another problem which led to trouble later.

The method of writing and clearing the combined release was a cumbersome one. The text was reviewed by a committee of technicians from the Bureaus of the Budget, the Census, Employment Security, and Labor Statistics. Then clearance was secured from the respective department offices, and finally, a release was issued in the name of the Secretaries of Labor and Commerce. But the system worked for only five years, until 1959, when an arrangement was made whereby the financial and policy responsibility for the whole system was turned over to the Department of Labor. The household survey became the joint responsibility of the Bureaus of Labor Statistics and the Census, the former financing the operation as well as analyzing and interpreting the data, the latter, under contract, continuing to collect and tabulate the data coming in from the field. But the tradition of releasing the figures in the name of a Secretary was continued--it was now the Secretary of Labor only.

In my judgment this became one factor (though not the only one) in generating public criticism over the unemployment figures in 1961. It is not easy to write a brief report, subject to newspaper headlines, which will give a perfectly balanced picture to the public. For example, in most months during the past seven years it would have been possible to headline the release of the Consumer Price Index as a "new all-time record high." Yet, while that statement might be true, it would constitute a distortion of the facts for an index that had generally gone up 0.1 percent a month. It was much more appropriate to use the words "stability, little change." So, too, with labor force statistics; "an all-time high for employment" may not be especially significant when the labor force is growing rapidly, and when perhaps unemployment climbed along with employment.

But the problem proper of interpretation to the public becomes more difficult when responsibility for the statements is uncertain, when questions can be raised as to the policy implications of the figures. When the Kennedy Administration took office the economy was nearing the bottom of the 1960-1961 recession. It was necessary to take measures to aid the unemployed as well as to stimulate business recovery. The fever of activity resembled in many ways the advent of the Roosevelt Administration in 1933. This time the Department of Labor was well up toward the front in government programs, since the Department now had responsibility for many programs which had been non-existent or widely scattered in 1933. So the inevitable happened: Critics who did not like the programs centered their fire on the statistics which lent support to them.

The criticism gave rise to congressional hearings by the Joint Economic Committee, which completely vindicated the technical staffs who had compiled the figures. The President then appointed an expert committee to appraise employment and unemployment statistics, the Gordon Committee, which also vindicated the technical staffs involved. However, the Gordon Committee went on to propose reforms and improvements in the whole field of labor force and employment and unemployment statistics, involving all the agencies participating in this work.

For the purposes of this historical review, only two proposals need to be mentioned. One concerns the release of the data to the public. The Gordon Committee recommended that this function be lodged in the technical staff of the Bureau of Labor Statistics, the professional statisticians being responsible for the compilation of the figures. When he received this recommendation, the Secretary of Labor acted immediately to put it into effect, and that is the way the data are released today. The other proposal worth noting here is the Committee's recommendation that there should be a thorough testing of the data at their source--that is, of the questions and answers of the families in the household sample. It was proposed to explore in depth the individual and family situations so as to provide sharpened definitions and classifications of all groups, in or out of the labor force.

In response to this recommendation, the Bureaus of Labor Statistics and the Census established a special sample of households which could be used for testing and checking the basic concepts of these statistics, as well as for obtaining more precise answers to questions. For the past three years this special sample survey has been conducted completely independent of the regular sample from which the official figures come. A great deal has been learned and many improvements have been developed through this test sample. It is the hope and expectation of the BLS that these improvements will eventually be incorporated in the regular sample, and that the two samples can then be combined into an enlarged sample of 52,000 households--50 percent larger than the Bureau has now. The results of the test sample survey will become available some time this year, and the consolidation should be possible in 1967.

Before digging deeper into the background of the data, I want to analyze and interpret the situation in which the nation now finds itself. And the first hurdle is the existence of a global figure--the unemployment rate. In the month of February 1966 there were (in round numbers) 3.2 million unemployed, a rate of 4.2 percent. But wait! That is the actual rate and not the one published in the papers, which is 3.7. The latter is the seasonally adjusted rate, which is commonly used to interpret the figures. A considerable fraction of our unemployment is due to seasonal fluctuations in business. However, since the seasonals usually occur at about the same time each year, statisticians have devised a method for averaging them over a period of years to get an approximate seasonal pattern. Using this pattern it can be measured whether unemployment last February was lower than it usually is in mid-winter, or whether it was higher than usual. The seasonally-adjusted rate eliminates the estimated (or calculated) seasonal changes and tells us whether the underlying trend of unemployment is going up or down.

Take December 1965 and February 1966; the actual unemployment rates for those two months were 3.8 and 4.2. These rates showed that unemployment was somewhat higher in February, as it practically always is, due to seasonal factors. But the seasonally adjusted rates were 4.1 and 3.7, showing that the cyclical business recovery continued upward and the trend of unemployment downward.

However, this use of an overall rate can obscure and mislead people as to some significant factors in unemployment. Let us return to the numbers of unemployed. Last December the 2.9 million consisted of about 1,250,000 men twenty years of age and over, about 850,000 women in the same age group, and 800,000 youth of both sexes, 14 to 19 years of age. The unemployment rate (seasonally adjusted) for men was 2.6 percent, for women 3.9, and for youngsters 13.1. Among married men, with wife present, the rate was 1.8 percent. Since adult men constitute the bulk of the regular full-time labor force, we can note that the unemployed consisted largely of adult women and teenagers who represent most of the part-time, seasonal, or occasional workers.

The concept of part-time itself requires special treatment which the BLS has tried to provide. The Bureau classifies as employed anyone who works even one hour in a week for pay or profit. Obviously, there aren't many who work one hour, but the Bureau does count many half days (4 to 5 hours) or full days (8 hours or so). The BLS was roundly criticized some years ago on the ground that this method tended to conceal some substantial partial unemployment. So a method was devised to add up all these shortfalls and consolidate them into hypothetical full-time unemployed. Then still another unemployment rate was calculated, the rate of "labor time lost." In recession periods such as 1961 that rate often exceeded the actual rate by more than one percent, and some analysts used it as a better indicator of unemployment than either of the other two rates. But now I must call your attention to the fact that this differential has narrowed down to minor proportions. In February, 1966, the seasonally adjusted unemployment rate was 3.7; the rate of labor time lost was 4.0.

Meantime, the Bureau has continued to treat part-time and full-time job seekers alike for rating purposes. The part-time seeker counts as unemployed, but the Bureau has regularly published the breakdown into those two groups. Thus in February, 1966, there were 600,000 unemployed seeking only part-time work. If we guess that their search averaged about half time, their number would be equivalent to about 300,000 full-time job seekers.

The interpretation of the Negro unemployment problem can also be made much clearer when we take both the rates and the numbers. For example, the Negro unemployment rate has long been about twice the white rate. Among Negro teenagers it is not unusual to obtain unemployment rates of 15, 20, and 25 percent. But people reading these rates tend to forget the comparable numbers in the labor force. Again, let us

take unemployment last December: 2,300,000 whites, and 600,000 non-whites of whom about 90 percent were Negroes. That 600,000 can be further divided (very approximately) into about 250,000 adult men, 175,000 adult women, and 175,000 teenagers of both sexes. In a speech I made recently before the Plans for Progress Conference in Washington, D.C., I pointed out that 250,000 unemployed Negro men constitute only one-half of one percent (one man in 200) of the 45 million employed men in the American economy. The employment of that number of men is not an insuperable problem--nor that of Negro women and teenagers, for that matter.

Then there are the insured unemployed, those drawing unemployment insurance benefits. These statistics provide the statisticians with plenty of interpretation problems. A fairly common one consists of the statement that "so-and-so is living happily on unemployment benefits and doesn't want to work--why is he counted as unemployed?" The BLS, however, does not pay any benefits (nor prescribe any punishments); its constant checking has not disclosed any tendency toward exaggeration of unemployment. Moreover, in the absence of any incentive to do otherwise, most people answer honestly, and the BLS points out that workers drawing benefits must register at the public employment offices, must accept referral to jobs offered them, and must accept suitable work--or suffer loss of benefits. Of course, some workers may beat the game temporarily, but the administrative machinery eventually catches up with them; furthermore, unemployment benefits can and do run out.

There is another somewhat left-handed interpretation of these two sets of figures which creeps into the press in times of prosperity. A goodly proportion of the nation's working population is covered by unemployment insurance, but by no means all. So the household survey will certainly dig up more unemployed than can be found on the insurance rolls--the insured unemployed. However, the ratio of insured unemployed to the total unemployed is by no means constant. It rises to a peak (two-thirds or more of the total unemployed) in a business recession when widespread industrial layoffs occur--mostly among the insured. Later in the recession, when benefit exhaustions begin to set in, the ratio declines to 60 percent, 50 percent, and lower. But when the economy nears full employment (as in 1966) the ratio can drop even below 40 percent. Experienced workers are speedily re-employed, even if they do occasionally lose their jobs again. Part-time and occasional workers are drawn into the labor force and may experience some unemployment entering or leaving. In March 1966 (mid-month) the insured unemployed numbered about 1.4 million as compared to a total of over 3 million. Some critics of these figures assume that the total should shrink proportionately to the insured, and they infer that the BLS is counting a lot of marginal workers who aren't really in the labor force. Although this is entirely incorrect, the criticism has to be answered, and it isn't easy to explain to the public such a complicated relationship.

This thought leads to the secondary wage or salary earner--the wife, daughter, son, aunt, etc. What about the unemployed wife whose husband has a full-time job--does the BLS count her? The answer is "Yes" if she

is looking for work--and it can't be arbitrarily assumed that she isn't interested and isn't really looking. The one-earner family is by no means the rule in our economy. Millions of housewives work outside their homes regularly all year, and millions more work at times during the year. Many of them are fully as active as their husbands in the labor force (in some cases, one might say "more active"), and their status, from time to time, is equally important to measure the performance of our economy in providing jobs.

Occasionally the Bureau is challenged about the 14 to 15 year olds--"nothing more than baby-sitters." Now the interesting point about these youngsters is that they hardly affect the unemployment rates at all. At a time when the unemployed numbered about 4 million, only about 50,000 were aged 14 to 15 years. The overall rate was 5.2 percent, with or without them; so there is no urgent reason for dropping them. Conversely, there is a good reason for keeping them in, namely, that about 750,000 of them are employed. If they would be dropped from the unemployed, they would also have to be eliminated from the employed. And many of them are significant workers in terms of hours and pay--newsboys who work 7 days a week (only a couple of hours a day, of course), farm boys doing chores, checkers in food stores on Saturdays, etc.

Since the recent furor about the TV ratings, the Bureau has encountered some puzzled questioning concerning its methods of sampling. There are several important points of difference. First, there is the size of the sample--each month a total of 35,000 households involving more than 50,000 workers and a total population of perhaps 125,000 people, many times larger than most polls and other forms of sampling. Second, the composition of the sample is always changing. The Census agent interviews the families (if they consent) for four successive months, then drops them for eight months, and then visits them again for four corresponding months in the following year. (Some of those year-over-year interviews must be thrown out because the family has moved.) The effect of this system is to produce a turnover of one-fourth of the sample each month, so that the sample can't be swamped by a few poor cases. Finally, the results come from detailed personal interviews with someone in the household by a trained agent who asks questions designed to clarify precisely the situation. Obviously, the Bureau could and does get wrong answers to questions, but these errors are measured by periodic checking and re-interviewing. Within the broad limits of the sampling errors which are published every month, the Bureau's labor force statistics are accurate and present a good picture of the manpower situation in the economy.

In conclusion, I want to sketch briefly the employment outlook for 1966. It now becomes apparent to most people that we are entering a period of spreading labor scarcities. Unemployment is declining, overtime work and multiple job holding are increasing. We don't have in this country any comprehensive statistics on job vacancies; if we had them, I would predict with confidence that vacancies are increasing. The characteristics of unemployment, as I have sketched them here, are shifting toward the

part-time and occasional workers, with fewer full-time, year-round workers available. The labor market is becoming tighter, a development which is hastened by increasing Selective Service drafts for the war in Vietnam.

You will recall the debate pursued by economists for the past several years on the issue of structural vs. demand unemployment. The expansionists have argued that unemployment is primarily due to lack of demand, and that the solution is to pep up the economy until unemployment is reduced to "full employment" proportions. The structuralists have argued that much of the stubborn unemployment is due to the imbalance between job openings and unemployed skills (or location). In practical policies the government has adopted both theories. The tax cuts of 1964 and 1965 certainly have stimulated the economy and reduced unemployment. The Manpower Development and Training programs and the youth employment programs have stepped up the employability of some of the unemployed. The problem facing the nation now is: Where do we go from here?

In my judgment, we have hit structural unemployment at about four percent, or a little under. Surely, more unemployed can be absorbed, but only under conditions of rising prices and wages. Further stimulation of the economy will produce more inflation than unemployment reduction. And this brings us to the problem of the prosperity spiral of wages and prices, which is our next subject.

Lecture II: Wages and Salaries

Collection of wage data from industrial concerns was one of the major functions of the Bureau of Labor Statistics in its earlier years. Even before the start of the 20th century, it was engaged in this activity. The Bureau's first study grew out of an investigation by the United States Senate in 1891 and resulted in wage-rate records extending back continuously to 1860. One of its earliest bulletins was entitled "Wages in the United States and Europe, 1870 to 1898." As far back as the turn of the century, the Bureau made periodic nationwide surveys of the occupational wage structure in important industries--coal, steel, and textiles being the favorites. It was during this period that the Bureau began the collection of union wage scales, extending back to 1907, in the building, printing, metal, and bakery trades. The building and printing trades series have been continued to date; the metal trades series was discontinued in 1932 and that for bakeries in 1953. Later, the union scale series was expanded to include two transportation industries. A large survey program, undertaken for the War Industrial Board in 1919, produced occupational pay rates by industry, state, and city (for some industries).

Between 1934 and 1940, the selection of industries studied was determined largely by administrative needs under the National Recovery Act, Public Contracts Act, and the Fair Labor Standards Act. Nationwide data for relatively low-wage industries were emphasized.

Survey activity shifted in the 1940-1941 defense period to heavy industries essential to war production. A large scale program of occupational wage studies by industry and locality was required to implement wage stabilization policy during the war. The emphasis on locality data has continued within the framework of industry studies generally designed also to yield national and regional estimates.

The Bureau's wage program was drastically curtailed after the war. In 1948, however, in response to the widespread interest in local clerical salary levels, the Bureau inaugurated a program of office clerical studies. These studies utilized cross-industry sampling methods and employed uniform job descriptions for classifications of workers in 23 selected office occupations. Surveys were conducted in 10 large metropolitan areas and, in addition to all-industry averages, frequently provided separate earnings data for six broad industry divisions. Information on the prevalence of fringe benefits was also summarized in the reports. In 1949, the number of areas was enlarged to 17, and in that year the occupational coverage was expanded to include maintenance, power plant, custodial, and material movement jobs common to a variety of industries.

The scope of the Bureau's wage work was further extended by the development of Bureau cooperation in Defense Department wage board surveys. In 1949 the Bureau of the Budget proposed that the BLS, in conducting a community wage survey in Denver, should undertake to collect wage information

for the Army-Air Force Wage Board, which was reviewing wage scales at the Denver Air Base. The Bureau served only as a collection agency for employer wage data; it had nothing to do with the wage board decision on air base wages. The experiment was so successful that this became the standard operating procedure in all communities where the BLS made studies, and for practically all federal government wage boards.

In addition, state and local agencies began to show an interest in the system, and eventually state civil service agencies and personnel boards, city salary commissions, local school districts, and others entered into a cooperative arrangement with the Bureau. In San Francisco, a total of more than a dozen federal, state and local agencies use the BLS as a collection agency for local wage data.

During the Korean War another wartime expansion took place in the Bureau's local wage surveys. They were conducted in 40 areas from September, 1951 to May, 1952. After that war there was not such a drastic cutback, although there was some curtailment of funds. Next, the problem of federal pay scales for white collar workers entered the picture. In the local surveys the Bureau had collected salary data on such cross-industry occupations as typists, stenographers, bookkeeping machine operators, clerks, draftsmen, etc. Congress and the Executive Branch then began to use the Bureau's statistics to guide them in fixing federal salaries.

Finally, in 1959 the BLS proposed a comprehensive program of community wage surveys covering 80 communities selected to be representative of the (at that time) nearly 200 metropolitan areas in the United States. However, only the clerical workers in these surveys were comparable to occupations covered by the Classification Act. The Bureau of the Budget and the Civil Service Commission, therefore, requested the BLS to establish a nationwide survey of the salaries of professional, administrative, and technical personnel in private industry. This survey included occupations comparable to those in the Federal Civil Service, such as accountants, chemists, engineers, mathematicians, physicists, scientists, etc.

In 1962 Congress passed the Federal Salary Reform Act, which established the principle of gearing federal pay scales to private industry pay for comparable positions, and then designated the BLS as the agency to provide the necessary data from its Community Wage and Professional, Administrative and Technical Surveys.

The most recent expansion in the Bureau's wage work arose from the need for more precise data on fringe benefits. The Bureau had long been concerned about the absence of quantitative information on the cost of fringe benefits but found it difficult to arouse interest or raise funds for such a project. During the Korean War enough interest was generated to enable the Bureau to get financial assistance from the National Bureau of Economic Research for an experimental survey in 1953. That survey demonstrated that satisfactory data could be collected, and in 1959 the Bureau was able to launch a continuing program of fringe benefit surveys.

The federal pay problem directed attention toward fringes in the federal service. The BLS then received funds to conduct a survey of the cost of fringes in private industry for comparison with costs in the federal government. The results of that survey were released by the BLS in the autumn of 1965.

Economists long have known that wages and salaries in the economy behave quite differently than prices. For example, prices for a specific commodity usually do not vary from one part of the country to another by much more than the cost of transportation between the two places. But wage differentials do not follow this rule. In some industries and occupations wages are strictly local in character and seem almost immune to national influences.

Let us take recent wage scales in the building trades as an example (using July, 1964, for the comparison). Average hourly union wage rates for journeymen ranged from \$5.26 in New York City to \$3.56 in Charlotte, North Carolina. Of course, there is a marked difference in the size of these two places, but even among cities of about the same size, the differentials are substantial. Among cities with a population between 500,000 and 1,000,000, the journeymen's average rate in San Francisco-Oakland was \$4.78 as against \$3.84 in New Orleans and \$4.00 in Dallas. Nor is it entirely a matter of the South versus the rest of the country. Among this population group the average was \$4.16 in Milwaukee and \$4.22 in Baltimore.

Among helpers and laborers the variations are literally amazing. Again, the highest average rate is in New York City, \$4.58 an hour; the lowest is in Jacksonville, Florida, \$1.68. The average rate in Cleveland is \$4.01, but in Washington, D.C., it is \$2.88. In the population group from 100,000 to 250,000, Syracuse, New York, averages \$3.60; Providence, Rhode Island, \$3.08; Topeka, Kansas, \$2.63; and Richmond, Virginia, \$1.89.

Of course, some of the extreme variations among laborers' rates are due to a heavy weighting of Negro workers in the South; in some cases these rates may represent Negro workers almost entirely. But that is not the whole story by any means. Some wide differentials exist in almost exclusively white communities in the North within a few hundred miles of one another. Why is there no shifting of labor (presumably comparable and qualified workers) from one place to another? The fact is that a national labor market does not exist in the building industry; there are only scores of strictly local labor markets.

Even more astonishing differentials exist within the crafts. Carpenters rates range from a high of \$5.47 an hour to a low of \$2.80; glaziers from \$5.05 to \$2.50; painters from \$5.35 to \$2.75; and composition roofers from \$5.25 to \$2.05. Ranges proportionately even greater can be found among the helpers and laborers; for example, building laborers' rates range from \$4.65 to \$1.55.

But the most striking of all are the high helpers' wages in some cities and the low wages of craftsmen in others. Thus plasterers laborers have achieved a rate of \$5.45 an hour in New York, while plasterers themselves have rates as low as \$3.40 in some Southern cities. The small city craftsmen could raise their wages over fifty percent by moving to high wage areas and becoming laborers; so could bricklayers, roofers, marble setters and others.

I have spent considerable time on these localized wage rates because they highlight the difficulty faced by the Administration in applying the wage guideposts. A national policy simply doesn't touch these rates.

Now I want to turn to another phase of the wage problem, namely, annual wage increases. As was pointed out by Commissioner of Labor Statistics, Arthur M. Ross, in his testimony before the Joint Economic Committee, the average annual increase in wages in the economy in recent years has ranged closely around 3.5 percent a year. Except for the construction trades, the annual increases (until 1965) came out fairly close to the guideposts; labor costs rose very little and prices remained fairly stable. The problem worked itself out at guidepost levels. At first glance this seems persuasive evidence for 1966.

The difficulty is, however, that this modest average increase in wages was the result of increases that ranged all the way from 8 percent or more in some cases down to no increase at all in other situations. The problem of the guideposts is how to hold the 8-percenters to 3.2 (or 3.4 or 3.6, for that matter) while keeping the zero, 1- and 2-percenters within the limit. Both projects are difficult; the 8-percenters are there because of strong demand situations. A table in Commissioner Ross' testimony shows that these same workers gained more than the average increase in 1964, and they can easily repeat that gain in 1966. Meantime, the lagging bargainers can embark on a "catching-up" campaign in the tighter labor market of 1966. And by catching up they mean getting much more than the guideposts.

Another example is the statutory minimum wage--at \$1.40 it would mean an increase of 12 percent over \$1.25, but that increase could be interpreted as a catching up after more than three years at the \$1.25 minimum level. However, the net result of all these forces will point in the same direction--the average gain in the bargains of 1966 will be higher than in the years before 1965. Only a business downturn could head off substantial increases.

But organized workers comprise less than one-quarter of the labor force. What about the rest of the employed population--the more than 50 million unorganized? For them another factor comes into play--what European economists call the "wage drift." It works as follows: When there are substantial numbers of unemployed, an employer wanting workers can get them at going wage rates. Wages are higher than unemployment benefits, and if the worker has exhausted his benefits he is even more anxious to get a job. But when the pool of unemployed is low and contains few qualified

workers (this is, qualified for the specific job vacancy), an employer must either put his current work force on overtime at premium pay, or attract employed workers from other firms. It is rare that he can do the latter without offering an increase. Then the current employer raises his wages in order to hold his workers. In a tight labor market wages (and salaries) will rise--unions or no unions.

Commissioner Ross presents a table which clearly shows this drift in action. I mentioned earlier the BLS community wage surveys. A special survey was made for the second half of 1965, comparing three groups with respect to their average (median) wage or salary increases over 1964. For the skilled maintenance trades (men only) the increase was 3.7 percent, for the unskilled plant workers (men only) 3.3 percent, and for the office clerical workers (men and women) 3.4 percent. The latter are virtually unorganized, yet their increases matched those in the more highly organized trades. The wage drift was working last year.

Fringes are hard to estimate in dollar terms. There has been spirited debate on the question of whether they should be classified as wages. The BLS calls them supplementary wage payments. On one point there can be no doubt, namely, that they constitute a cost to the employer and therefore must be counted in total labor costs.

However, it must not be assumed that adding fringe costs to wages steps up the rate of annual wage increases. If certain wages are \$3.00 an hour and fringes are estimated at \$.75, the combination is \$3.75. But if wages are increased 10 percent and the cost of fringes only 6 percent, the combined increase is only 9 percent. We need to know whether the cost of fringes went up more or less than cash wages.

The cost of fringes is a difficult matter. There must first be agreement on what is to be included as fringes. There is a wide gap between the fringe costs estimated by the U.S. Chamber of Commerce and those issued by the BLS. The BLS, for instance, does not include coffee breaks and other time lost within the plant. But there are other problems. The actual cost of some items, such as early retirement or separation allowances, can only be finally determined by experience; they may cost more or less than anticipated. That is one of the reasons why in wartime the control authorities tend to favor fringe benefits over cash wages--the bill won't come through until after the war is over.

There is a "voice from the past" which exercises a potent influence upon bargaining in any one year--the deferred wage increases negotiated in former years but coming due in this year. Studies by the BLS have shown that these deferred increases from the past have constituted a floor for the bargains of the current year. Only in recession years does there seem to be a break in the pattern.

Commissioner Ross presents a table on deferred wage increases for the five years, 1962-1966. The import of the data can be demonstrated by

using the statistical mode (the largest number of workers in any one class of increase). The mode for 1962 was an increase between 6 and 7 cents; 1963--7 to 8 cents; 1964--7 to 8 cents; 1965--7 to 8 cents; and 1966--10 to 11 cents (increased to some extent by wage escalation in the automobile industry). Of course, these data are influenced by the specific industries affected in each year, but the jump in 1966 is obvious.

There is one final factor which will surely exercise some direct, and considerable indirect, influence on wages in 1966. That is the Consumer Price Index. A "direct" influence is its presence in escalation contracts. The prevailing conversion factor is now one cent per hour for each 0.4 point on the index. Thus some workers in the first half of 1966 gained 6 cents, and could gain more later in the year. For workers benefiting by escalation, the price index can break the guideposts.

But escalation clauses now affect only about $2\frac{1}{2}$ million workers. A much more potent influence in 1966 will be "indirect"--the pressure of workers to obtain wage increases large enough to offset past and prospective increases in the cost of living.

In summary, the outlook for wage and salary increases in 1966 is to be at least as high as those of 1965, and higher than in preceding years. Practically every factor exercising an influence on wages will be working on the up side. This does not mean that the lid will be blown off; there are limits to what labor can obtain and what employers can afford to give. But the gains in wages and salaries will be substantial, and labor costs will rise considerably more than in any one of the past 7 or 8 years.

In our next lecture we will discuss how price behavior and the cost of living are reflected in the Consumer Price Index constructed by the BLS.

Lecture III. Prices and the Cost of Living

The Bureau of Labor Statistics got into the field of price investigation in 1890, when the Senate Finance Committee conducted a study of imports into the United States, in the course of which it called on Commissioner Wright and the BLS to help conduct the factual surveys. The Commissioner's well-known interest in the welfare of wage earners made the BLS the natural agency for preparing the price indexes. While most of the data collected were on wholesale prices (in primary markets), data on retail prices were compiled from June 1889 to September 1891. Roland P. Falkner, the Subcommittee's statistician, attempted to develop a Cost of Living Index. By present-day standards, this index was quite inadequate, and it is no longer used by economic historians.

In the early 1900's the BLS began collecting retail prices of food in scores of cities throughout the country. It was World War I which galvanized the price work of the Bureau. As indicated previously, President Wilson asked the Commissioner to create a "Cost of Living Index" to assist in settling labor-management disputes about wages in war industries. The Wholesale Price Index also received a searching professional review at that time by Professor Wesley Mitchell of Columbia University.

The Cost of Living Index was compiled on a quarterly basis during the early 1920's and it acquired considerable use in collective bargaining. But consumer prices were not much of an issue after the collapse of 1921. Retail prices were comparatively stable for the remainder of the decade. It was farm prices which captured public attention and newspaper headlines.

The next important episode in price history occurred in 1933-1934, when COGSIS (Committee on Government Statistics and Information Services) made its comprehensive review of government statistics. The review of the price index was conducted by the advisory group to the Secretary of Labor, on which I served as secretary as well as full-time staff member. It needed no extensive investigation to determine that the old 1918-1919 weights for the commodities and services represented in the index were completely out of date and quite unsatisfactory for measuring price movements in the depression. Thus the advisers recommended new family expenditure surveys to obtain revised weights for the index, and surveys were conducted in 1934-1936 resulting in an extensive overhauling of the index. The revision was completed in 1940, just in time to put the index in shape for use in World War II.

Another important landmark in the history of the CPI was the development of specifications defining the qualities of goods. These provided a better method of detecting and "adjusting" for quality changes. In 1933 the Central Statistical Board appointed a Retail Price Committee, made up of representatives of government agencies interested in retail price problems. This Committee prepared a plan for the assembly and analysis of prices including the development of preliminary commodity specifications for more

than 600 items. After tests of these specifications and other aspects of the pricing project by the Bureau of Labor Statistics and the Committee had been completed, "pricing by specification" was adopted by the Bureau in November, 1934, as a guiding principle for its regular pricing surveys for the CPI.

During the war the index was used as a guide and a measure for price and wage controls. In the last year of the war a bitter controversy arose over the accuracy of the index. The labor unions contended that it did not adequately measure some of the rising costs of living which workers were experiencing. They argued that workers who moved from lower cost areas to higher cost ones suffered loss of purchasing power without commensurate increases in wages. The BLS replied that a price index as such could not be adjusted for such a factor. Finally, a group of labor union statisticians constructed an index of their own and attacked the BLS index. The BLS replied with a vigorous defense of its methods and pointed to errors in the labor index.

An expert advisory committee was then appointed to review the statistics of the Bureau. Later President Roosevelt appointed another committee to make recommendations for a final solution of the problem: the Committee on the Cost of Living, chaired by Wesley C. Mitchell of Columbia University, endorsed the methods used by the BLS and recommended no change. However, Professor Mitchell and his staff pointed out that there were some kinds of costs which could not be measured by a Cost of Living Index, but which, nevertheless, should be recognized for wage control purposes. As a result a series of points (which eventually became five in number) were added to the index for use in collective bargaining and wage control, and the controversy was settled until the end of the war.

Wage controls were removed immediately after the war, but price controls were maintained until the summer of 1946, when they became ineffective and had to be taken off. One of my first tasks as Commissioner after my appointment in 1946 was to announce the elimination of the paragraph on the five points from future Bureau press releases. That caused no controversy as wages were rising rapidly by that time and the price index was responding to the elimination of price controls.

In 1945 the name of the index had been changed to Consumer Price Index. The BLS agreed that there were some aspects of the cost of living which could not be measured by a price index. The new name more correctly described the index, and it has been retained to date.

The next landmark in index history took place two years later, in 1948. When the 80th Congress came into office with a Republican majority, it proceeded to slash the wartime budgets. The BLS had expanded in response to the war agencies' needs for statistics. Therefore, it was in the line of fire and suffered accordingly. In 1947 the Bureau's budget was cut by 40 percent, and as Commissioner I had to lay off 700 employees out of a total of 1700. The only mild concession was a provision that the Bureau

could spend about \$700,000 on the price index. But the next year, 1948, the House of Representatives cut the Bureau's budget another 40 percent, a cut which would have completely wrecked the Bureau's programs. Before the Senate had acted on the appropriation, the Automobile Workers Union and General Motors had negotiated and signed a two-year contract escalating wages quarterly on the basis of the Consumer Price Index. There had been considerable apprehension that 1948 would witness another bitter automobile strike like that of 1946. The peaceful settlement brought such general relief that the BLS, as the custodian of one of the terms of the contract, suddenly acquired congressional merit. The Senate restored the House cut, the House receded in conference, and the BLS budget finally established a floor.

When business began to level off in the autumn of 1948, the Bureau felt that the time was ripe for a postwar revision of the index. The weights for the various items, particularly for foods, were once more getting out of date and out of line with current consumer buying habits; the inflation of 1946-1948 had produced obvious distortions. With new appreciation of the index as a result of the automobile contracts (other companies had also signed similar contracts), the Bureau had little trouble in getting funds to make a major revision of the index, scheduled for January, 1953.

But--"the best-laid plans of mice and men...."--a new crisis arose. The outbreak of war in Korea in June, 1950, and the subsequent explosion of consumer prices forced a change in plans. The Bureau had to make an emergency interim revision of the index in order to meet the government's needs in the Korean War. That revision was completed early in 1951. It was an improvement over the old index, especially in reducing the high weight for foods, but the major revision had to await the completion of the project in 1953.

There was some agitation by organized labor about the index during the Korean War, a replay in minor key of the World War II controversy. One of the labor researchers, who had been an active participant in the World War II episode, had become the research director of one of the unions ejected from the CIO in 1948. Although he no longer had standing in the orthodox labor movement, he decided anyway to repeat the performance of World War II. He prepared an alternative index, far higher than the BLS index, and launched an attack on the latter. The matter was promptly taken up by the House Education and Labor Committee, which appointed a subcommittee to conduct a "friendly investigation." Once more the Bureau came through with congressional commendation and endorsement of its work. The favorable congressional report then put an end to that issue.

The 1953 revision generated some unexpected labor-management problems. The BLS planned to drop the old index in December, 1952, and introduce the revised version in January, 1953, both indexes linking in December. But representatives of labor and management groups went to the White House and persuaded the Administration to resurrect the old index for a 6-month

period, through June, 1953. The Administration complied with the requests and supplied the BLS with funds to reconstruct the old index. However, practically none of the parties used this grace period to convert to the revised index. Some contracts under the old index came to an end and escalation clauses were not renewed. In other cases the parties waited to convert their contracts until the June deadline and then encountered some troubles, since the two indexes were at that time 0.2 of a point apart.

By the late 1950's the BLS staff was again keenly aware of the need for another revision of the index. The congressional subcommittee in 1951 had recommended that the index should be revised about once every ten years unless special circumstances required it more frequently. The project was accepted by Congress in 1959, with revision scheduled for January, 1964. Forewarned by the experience of 1953 the Bureau this time made formal provision to continue the old index for a 6-month overlap period, through June, 1964. It was hoped that both labor and management had learned something from the former experience. They hadn't! Despite all exhortations and appeals, the overlap came and went without any important conversions to the revised index. Finally the Bureau had to agree to project some adjusted and modified "old indexes" in order to meet the needs of parties who had not converted to the revised index.

There is one recent incident which has had and will have important bearing on the work of the BLS with the Consumer Price Index. In 1962, when the last revision was under way, the Bureau of the Budget negotiated with the national Bureau of Economic Research for the creation of a Price Statistics Review Committee under the chairmanship of Professor George Stigler of the University of Chicago. The Stigler Committee conducted an exhaustive review of the Bureau's methods and made a report to the Office of Statistical Standards. That report later became the subject of congressional hearings by the Joint Economic Committee, and members of the Bureau testified at the hearings. The BLS also made a report to the Office of Statistical Standards responding to the Stigler Committee's recommendations, many of which were adopted while some were rejected.

Several of the Stigler Committee's recommendations require mention here because they have considerable weight of professional opinion behind them, and because they are likely to arise again in the future. The most far-reaching proposal was that the BLS should consider the preparation and development of a "welfare index" as an alternative or a substitute for a "pure price index," such as the Bureau now has.

This is not the time or place for a full exposition of the differences between these two types of indexes, but stated briefly, a welfare index would be one of equivalent utilities, not of equivalent commodities or services. The consensus of the BLS staff was that no one yet knows how to construct such a welfare index, and even if a methodology could be found, the Bureau would want that index only as a supplementary measure and not as a substitute for a price index. However, the Bureau did take the

recommendation of the Stigler Committee very seriously and in 1965 obtained an award for a staff member from the Secretary of Labor to make a year's study of the possibilities to construct a welfare index. A report on that study should be available later this year.

A more immediate and practical problem raised by the Stigler Committee concerns the treatment of quality improvements by the Bureau. This is not a new problem; the Bureau has been aware of it for a long time. During wartime the argument runs in reverse--the BLS is then accused of making insufficient allowance for deteriorations in quality. However, it is the Bureau's position that quality improvements are taken into account, and that the critics greatly overestimate the effect of quality improvement on the index. One such criticism argues that the rise in the index since 1958 would be fully offset, if adequate account could be taken of the quality factor. This argument confronts the Bureau with a public relations problem, because such a statement carries the connotation that the Bureau is carelessly or deliberately permitting the index to rise when it ought to be stable or even be falling a little.

To deal with this problem professionally the Bureau has published articles in the Monthly Labor Review outlining the problem and our handling of it. There was a good article in the Review in November, 1961, by Ethel Hoover, Director of the price research staff of the BLS. The following is a brief summary of her main points.

In the first place, there are important areas of the index which are not subject to persistent and continuing quality improvements--foods, for example. Meat is graded, and the Bureau prices the same grade year after year. The quality of fruits and vegetables goes up and down, better some years than others, and there are many items of this type in the index. Of course, frozen foods and packaged foods are priced separately; these improvements are not incorporated into the price changes.

Then there are some areas of the index where the BLS finds not only no improvement, but in all likelihood some deterioration. Could one say that the quality of service in restaurants is improving? What about repairs of homes, appliances, TV sets and automobiles? Haven't the automobile companies had to institute training schools for their repair men because there have been so many customer complaints of poor work? And commuter transportation--what could one say about that?

Finally, the Bureau's system of "linking" is by no means an ineffective device. When the BLS staff is unable to equate a new item or grade with an old one, each is priced separately and linked for two or more successive months. Then the introduction of the new item as such has no effect on the index; it is only the price changes in that item that occur later which affect the index. The economic assumption underlying this method is that the differential (if any) between the old and the new price approximately measures the difference in quality. In a competitive economy this should nearly always be true. However, in the practical world of marketing there

are undoubtedly many variations from that norm; the BLS has to gauge the circumstances carefully--an introductory promotional price for an item could mar the price comparison. But, in the absence of clear evidence on which to make some other determination, the assumption that price differentials approximate quality differences is the best operating principle for a price index.

Last October the Bureau was subjected to some criticism because of its price treatment (for index purposes) of 1966 automobiles. In such consumer durables, where the same basic car appears on the market for years, but where the model changes slightly every year, the Bureau couldn't follow the "linking" method. The effect would be to eliminate price changes of all models from the index which wouldn't make sense. So some effort (and often much) must be made to try to evaluate the model changes and take them into account in the index. The Bureau has done this over the years by trying consistently to make a distinction between style or comfort changes, equated with fashion changes in dress, and engineering or materials changes which affect the performance of the car. Fins and grillwork have not been classed as quality improvements, which means that if they require higher prices these will be shown as price increases in the index. But an automatic shift is considered to be a driving improvement, so its effect on the price of the new model would be eliminated from the price index.

Now, last autumn the Bureau was confronted by an assortment of changes designed to promote safety, costing more money to install and raising the prices of the 1966 models. A decision had to be made whether greater safety was a quality improvement; the BLS found that it was and made allowance for the safety changes. The net result was that small price decreases were shown for the 1966 models. But the editor of Barron's Weekly disagreed and criticized the Bureau's decision. He argued that the safety factors were introduced under government pressure and under the threat of government regulation; they were not freely and competitively made in the free market. It is an interesting argument, no doubt, but I do not see how the Bureau could have adopted it. In any case, I invite all of you to exercise your own judgment. No matter how you may decide in your own mind, I want to impress upon you the complexity of these problems, and perhaps thus convey to you the thought and care which the Bureau gives to the myriad of details that are involved in the construction of the price indexes.

Before discussing the recent and prospective behavior of the index, I want to sketch briefly its composition and structure. The index consists of about 400 different commodities and services, each item containing numerous models, grades, brands, etc. There are 105 foods including 29 meats, poultry and fish, 29 fruits and vegetables, and 9 restaurant meals. The 81 housing items include rent, home purchase, property taxes and insurance, maintenance and repairs, utilities, and household furnishings and operation. The 77 apparel items include clothes for men, boys, women and girls, as well as footwear and services (such as dry cleaning). There are 34 transportation items, all--except the 5 public--related to the automobile (purchase, operation and upkeep). Finally, there are 101 health and

recreation items comprising medical care, personal care, reading and recreation, tobacco and alcoholic beverage.

Prices are collected in 56 locations--39 standard metropolitan statistical areas and 17 smaller cities. They are collected from grocery and department stores, hospitals, filling stations, and other types of stores and service establishments. Prices of foods, fuels, and some other items are obtained every month from all 56 locations. Other prices are collected every month in the five largest areas, New York, Chicago, Detroit, Los Angeles and Philadelphia, but only every three months in the smaller areas. The U.S. index combines all these prices into a national index. Local indexes are compiled and issued for 23 areas, including all metropolitan areas with a population of over one million. The smaller areas range down to communities of 2,500 residents or more.

Some public confusion occasionally arises because people (and even journalists) misinterpret the city indexes. They think that the height of the city index measures the comparative level of its living costs--for example, Philadelphia at 112.4 (1957-1959=100) is higher than Chicago at 109.3 for the same month. Of course, that is not what the indexes show. The Philadelphia index is measured against its own past behavior, and so is that for Chicago. We can say that the Philadelphia index has risen more in the past 7 years, but it does not follow that it is now a more expensive place to live than Chicago.

It is possible to develop place-to-place comparisons of living costs. During the 1950's the BLS published some standard budgets for a four-person city worker's family and for an elderly couple. These budgets were priced in 20 large areas; the resulting dollar figures for the living costs in each community provided a reasonably good measure of cost of living differences among cities. The BLS is now in the process of preparing and pricing some up-to-date family budgets (based on living standards of the 1960's), and these will eventually yield some limited intercity comparisons.

The people represented in the CPI are wage and salary earner families living in urban communities. The index does not represent the entire population; that would require a more comprehensive survey. During the 1950's the index represented only families of two or more persons, no single persons living alone; but in this last revision singles were included. Also, there may be more than one earner in the family. For the index only those families who earn more than half their annual income in wages and salaries are considered. Farmers and farm workers are not included, nor are the self-employed, professional men, the retired, or the unemployed (if any substantial amount).

In reviewing the behavior of the index over a period of time, the analyst must take into account the comparative weight or importance of each of the numerous commodities and services included in the index. In March, 1966, the CPI reached 112.0, an increase of 12.0 percent over the base period, 1957-1959. But services (excluding rent) were 122.5, while consumer

durables were only 102.0. Food as a whole was 113.9, consisting of food at home, 112.6, and food away from home, 121.2. The latter consists mostly of restaurant meals which have a substantial amount of service represented in them. Private transportation (automobiles) was 109.9, but public (bus, street car and railroad fares) was 122.1. Public rates, despite their rapid recent rise, still lag badly, partly because they are controlled by public utility commissions, and partly because the commuters and bus riders vigorously resist fare increases. (Witness New York City still clinging to the 15-cent fare, despite heavy losses in the operation of the subways.)

The above trends are long-run projections, but there are also pronounced short-term fluctuations in various index groups. Some of these are seasonal and some cyclical; still others have a little of both. The curious point about seasonality is that the index, as a whole, shows scarcely any seasonal variations; yet it includes a number of highly seasonal groups and subgroups of commodities. Fruits and vegetables, meats, eggs, dairy products, automobiles, apparel, fuels, and many others are definitely subject to seasonal variations; but they appear at different times of the year, so that one may offset one or two others and the whole group often balances out at "no change" in any one month.

However, some of these seasonals are in themselves quite erratic--highly fluctuating one year and fairly stable the next. Also, some have a much greater weight in the index than others. As a result there is what might be called greater "risk" of some strong but erratic seasonal price movements affecting the whole index in certain months. On the down side, the month of August usually has the best chance of producing a decline in the CPI--summer sales, falling fruit and vegetable prices, and substantial discounts on new cars all contribute to that result. Conversely, the months of May and June are somewhat more subject to the risk of a rising CPI because these are often the peak months for many fruit and vegetable prices. October is another month which is somewhat more likely to show a price increase.

The relationship of taxes to the CPI is another subject which is widely misunderstood. Direct taxes, income or withholding, are not included. This reasoning is in line with a sound index-making principle--taxes are a deduction from income and are not the purchase of a service. Furthermore, when Congress reviewed the index in 1951, its Committee report specifically directed the Bureau to keep them out; taxing is the prerogative of Congress and is not to be considered a cost of living. But sales and excise taxes become part of the price of an article. Even when they are quoted separately from the specific commodity, as in the case of gasoline taxes, the principle is the same--the article cannot be acquired without paying the tax. Property taxes on homes are also taken into account; they are part of the cost of home ownership just as are maintenance and repair.

The Bureau's methods of handling taxes can produce some anomalies. If Congress raises income taxes, this action will have no effect upon the index; but if it enacts a sales tax it will have an effect. The reduction in federal excise taxes in the summer of 1965 helped to hold the index down at that time.

Nevertheless, the BLS does publish data on the effect of income and social security taxes on the buying power of the worker's wages, the computation of real wages as distinct from money wages. Every month the Bureau publishes a figure on the average hourly earnings of production workers in manufacturing industries--for manufacturing as a whole and for several hundred individual industries. In April, 1966, the (preliminary) gross average weekly earnings for all manufacturing was \$111.24. The Bureau computes the federal income and social security taxes on that weekly wage for a single worker, and for an earner with three dependents, say, a man with a wife and two children. The result shows "net spendable earnings" after taxes. The next step is to deflate those spendable-earnings figures by the rise in the Consumer Price Index since the base period. (See Monthly Labor Review, April 1966.) The result shows "real spendable earnings" in 1957-1959 dollars. By that calculation the single worker in March, 1966, received a real wage of \$80.81, an increase of 17.3 percent over his average earnings in 1957-1959. The worker with three dependents had a real wage of \$87.80, an increase of 15.1 percent. So, while the Bureau does not put taxes into the price index, it does show their effect upon the purchasing power of wages and salaries.

Another problem of pricing arises in connection with consumer credit. In the case of home purchase, there is the price of the house, and then there is the interest which most purchasers have to pay on the mortgage, which may run for years. The Bureau met that problem by adding the interest charges (total) to the price of the house. For consistency the same method should be adopted for automobiles and other consumer durables bought on time. It was the Bureau's intention to introduce this method in the 1964 revision of the index, but shortage of funds and rising costs prevented it. Most such credit extensions are for comparatively short periods (one to three years) and therefore would not have anything like as much influence on the index as home mortgages.

Then there are the trading stamps which have long been a problem. Are they, or aren't they a reduction in the quoted price, and if so, how much? Stamps represent a cost to the retailer but their effect on the retail price and their value to the consumer is by no means clear. If the retailer raises prices (or doesn't lower them, as he might if he did not have stamps) to offset his costs, then the main question is--is the value of the premium received for stamps equal to, less than, or greater than the amount the consumer pays for stamps in the form of price for foods, gasoline, etc. Studies made by private and public investigators have been inconclusive and sometimes contradictory. After evaluating these studies, the BLS continues to make no allowance for stamps.

However, the sword of Damocles is always hanging overhead--in the form of a mistake big enough to affect the index. Because the index is used so widely in escalation clauses of all kinds (many billions of dollars are involved), the BLS tries to make every monthly index final, once and for all; preliminary figures are not used with final figures appearing the next month. Sufficient querying, reviewing, checking, and duplicate computing

is done to insure that a mistake will be caught. There have been occasions when I, as Commissioner, ordered a recalculation of an index showing an unexpectedly large increase and, if the index had ever dropped substantially, I might have done it then, too.

But despite all precautions, mistakes do (rarely) occur. There was one in Chicago, a year or so ago, involving a health insurance policy which was erroneously reported to have increased in price without corresponding changes in benefits. Months later the error was discovered and a correction had to be made, lowering that city's index slightly. But in the meantime some workers' wages had been escalated on the original index; many thousands of dollars were involved. Fortunately, the employer in that case accepted the bad luck. It has been the Bureau's good fortune that there has never yet been a mistake large enough to change the U.S. all items index even a tenth of a point, although it has been necessary to recalculate some of the subgroup indexes.

Those of you who work in the field of industrial relations are undoubtedly familiar with the recent rebate problem here in California. From time to time public rate-making bodies give rebates to customers--a retroactive rate cut which is distributed all at once. The BLS policy in the past has been simply to consider a rebate as a current price reduction for the month. Since rebates seldom occurred and were not very large, the effect on the CPI or on the city indexes was negligible. Then last summer the California Public Utilities Commission declared a year's retroactive reduction in telephone rates, and the entire amount was paid to the customers in the month of August. It was more than enough to offset many customers' August bills, and the effect was great enough to cause a decline in the Los Angeles Index. This was strictly temporary, since the index went back up again in September; but unfortunately there was a local union which had a quarterly escalation clause in its contract, timed on August. (Contracts based on July or September were not at all affected.) A union official reports that some \$10,000 were lost in wage decreases which lasted for three months--until November. The Bureau is now studying methods of avoiding such an anomaly in the future.

Let us now turn to the outlook for 1966. The CPI began to inch up a little faster last autumn. Instead of rising at an annual rate of 1.2 percent, it moved up to 1.7, and in December to 1.9 over the preceding year. January at 111.0 showed no change, but the February index rose 0.6 of a point, and March 0.4, reaching 112.0. That two-month rise is at a rate of over 5 percent a year. However, it is not sound to project such a short-term jump into a trend. What is needed is an analysis of the differential price movements (and prospects) among the groups of commodities and services.

First of all, what caused the jump? The dominating factor was the price of meat--practically all kinds. The group of meat, poultry and fish, in March, 1966, had risen 6.2 percent since December, and 17.4 percent compared to over a year ago. This sharp rise is partly the result of the agricultural cycle of meat production. When farmers are building up their

herds in anticipation of favorable cost and price prospects, they withhold females for breeding and market only the male animals. So the flow of animals to slaughter decreases and meat prices rise still further. It takes time for a balance to be reached. Hogs breed twice a year and cattle only once, thus these two swings often partially offset each other. But over longer periods they can and do sometimes synchronize, with marked effects on the CPI. The last time they operated together was in 1958, when meat prices played a leading role in sending the price index up while the economy was sinking into a recession.

As noted above, hogs can respond more quickly than cattle--the spring hog crop should have some effect soon. Cattle (and hog) marketing in the autumn should also have some moderating influence on meat prices, but a turnabout in the meat situation will require more time.

I spoke earlier about the high seasonality of fruits and vegetables which bring price peaks in late spring, usually May and June. The fresh fruit and vegetable group can rise as much as 20 to 25 percent above the autumn floor in September, but as of March, 1966, that group was only 1.8 percent above a year ago. This group usually exerts a strong upward push on the index in April, May and June--but a corresponding downward pressure occurs in July, August and September.

Next we have some declining seasonals--new car prices, for example. These are at a yearly peak in October and November when the new models come on the market, but beginning about January there is usually a steadily increasing discount as the model year unfolds. Used-car prices behave differently and are priced differently; however, they could help on the down side for the remainder of 1966.

Finally, we have the groups with long-term upward trends--the services. As noted previously, they have been rising at about 2.5 percent a year, twice the rate of the CPI as a whole. For the first three months of 1966, the services, less rent, have averaged about 2.7 percent above the corresponding period of 1965. The prospect for the services in 1966 indicates a continuing upward trend at recent rates. Rising wages among the unskilled and semiskilled workers will contribute to raise the prices of many personal services. With the advent of Medicare it is hard to see how rising hospital costs can be avoided. Repair and maintenance costs will also increase.

In summary, the outlook points to rising cost of living at a somewhat faster rate than in recent years. But the danger of a rapid increase during the first six months (to June or July) is not necessarily indicative of the performance during the following six months; nevertheless, it may have alarmed some people. It is necessary to wait out the spring rise and then appraise the autumn prospects from the vantage point of the summer peak.

In the next lecture we will discuss productivity and its relationship to wage rates and levels of employment.

Lecture IV: Productivity

In 1893-1894 the American economy sank into a severe business depression complicated by some agricultural crop failures. Unemployment was widespread, but in those days there were no figures. Congress, by joint resolution on August 15, 1894, directed Commissioner Carroll D. Wright "to investigate and make report upon the effect of the use of machinery upon labor and the cost of production, the relative productive power of hand and machine labor, the cost of manual and machine power as they are used in the productive industries, and the effect upon wages of the use of machinery operated by women and children."

Since mechanization seemed to be the key to the problem, Wright decided to make an intensive but kaleidoscopic survey of the spread of mechanization throughout the production processes of the economy. He selected some 80 industries in manufacturing, in addition to representative production processes from agriculture, mining, quarrying and transportation.

Wright's method of study was to compare the most advanced production processes of the 1890's with the handicraft methods of 25 to 50 years before, that is, around the Civil War period. He compared output per man-hour, wage rates and labor costs per unit of product. This was truly a monumental study yielding a wealth of historical data; it still constitutes a landmark in the story of productivity. However, it took so long that the depression was over before the results were made public. By 1895 business recovery was under way; the two-volume report on "Hand and Machine Labor" came out in 1898, and in the changed economic situation the unemployment issue had quietly disappeared.

The Bureau continued to be intrigued by the subject of productivity, and from time to time (usually in connection with wage surveys) statistics were gathered on output per man-hour in the firms being surveyed. However, these were isolated and static reports on which little analysis was done.

In the mid-1920's the issue of productivity came to the surface as a result of the rapid mechanization of our industry. For example, Henry Ford's innovations in the automobile industry were widely publicized, and the American Rolling Mills (steel), in 1926, introduced the continuous rolling process. The U.S. Conciliation Service encountered the productivity argument in its mediation activities; in fact, it provided some of the funds for the BLS studies. When I went to work on the project in 1926, my actual appointment was as a Commissioner of Conciliation, dubbed by the BLS staff as "the Conciliator of Statistics."

Commissioner of Labor Statistics Stewart set me to reading "Hand and Machine Labor" in order to orient me to the job. But it was painfully apparent to me that I would have no staff to make such an impressive study. Furthermore, Boris Stern, a young graduate of Columbia University, was then conducting an intensive study of the glass industry--the

continuous process of glass making had revolutionized that industry. So I turned to producing indexes of output per man-hour from published data on industrial output and employment, coupled with some prevailing hours data from the census of manufactures. (The BLS published monthly data on employment by industry.) With these few tools it was possible to construct indexes of productivity (output per man-hour) from 1914 as a base through 1925. I recall that in the case of automobiles, output had increased nine times, employment three times, and productivity three times.

This analysis of productivity trends for individual industries has been continued by the BLS. By the beginning of World War II there were some two dozen industries on our list. But the war put a stop to further development--war production and industry reclassification made the statistics questionable or nonexistent. During the war, however, Congress directed the Bureau to study the postwar readjustment and, specifically, to analyze productivity developments. So the Bureau embarked on a program of direct productivity reports based on data from selected establishments for representative products. These data were valuable because they provided a picture of the variations in output per man-hour existing at any one time in an industry. It was pointed out recently that this is exactly the kind of study needed to develop an early warning system for the advances of automation, but it was too expensive for the BLS to maintain after the postwar budget cuts.

The negotiation of the UAW-GM improvement factor clause during the Korean War signaled the need for more comprehensive statistics of productivity rather than indexes for individual industries, important as these were. The BLS began the publication of a series of overall indexes for the private economy as a whole, for agriculture, for manufacturing as a whole, and for nonmanufacturing. Government--federal, state and local--was omitted because it was difficult to measure output per man-hour in government. However, it is the output per man-hour indexes for the private economy which has become in the last few years a tool of public policy in the form of the guideposts for wage increases.

At this point it is necessary to outline briefly the nature of these productivity measurements. In its simplest terms output per man-hour is a relationship between the output of a productive operation and the labor time used in the process. It can relate to a single worker on piece rates, to a group operation, to a department, an establishment, a company, an industry, a sector, or to the economy as a whole. It can be expressed in two ways--number of pieces produced per hour, or number of hours required per unit of product. The measurement can be directed toward the comparisons of levels of productivity, such as Professor Rostas in England made in the 1930's between American and British industries, or as presented in the Factory Performance Reports for certain U.S. industries which the BLS published in the early 1950's to assist the productivity improvement programs in Western European countries. Or, the measurement can be directed toward measuring changes or trends in output per man-hour from time to time, without necessarily being required to determine the levels at any one time.

It is easy to describe productivity measurement in general terms, but the actual methods used are quite another matter. In some industries which manufacture one basic uniform product, such as coal or perhaps cement, output can be measured in physical units (tons of coal per man-day); but in more diversified operations the problem is difficult. However, it is sometimes possible to add the output of several products into a composite by weighting the product by unit man-hour weights. An alternative method is to take the total output of the industry in dollars and then deflate the dollars by an index of price increases (assuming that prices have increased) in order to arrive at an estimated real product. Such an estimate will be better if some breakdown of the major products and their respective money returns is available. Also, it is necessary to have good price indexes representative of the industry's price changes. Furthermore, it is not the value of the total product which is measured for productivity purposes, but only the value added by the industry's own method of processing. The materials processed elsewhere must be subtracted from the industry's value of output.

Other measurement problems exist on the labor side. We have to determine what type of labor is used. Forty years ago the man-hours of production workers only were used to represent the labor input. This was clearly inadequate as a measure of the level of productivity, but it could serve as a trend, so long as the proportion of nonproduction workers remained small and fairly constant. However, after World War II, there was a marked shift in that proportion--nonproduction workers became a larger and larger proportion of the total work force in many industries. The BLS introduced an all-employee index in addition to the production worker index. The Bureau also produces a nonproduction worker index, so there are now three indexes. Obviously, neither one of the two subindexes is as good as the all-employees index.

In the all-employees index all employees, from the sweeper to the vice president, are treated equally; no allowance is made for differences in pay or skill. John Kendrick and others, who have worked in productivity measurement, have produced an alternative measure, for which labor is classified by skill levels, with more weight given to the work hours of the skilled, the supervisors, and management. This can be done, and there is a logic in it; however, the BLS has not so far taken up this variant which would be more important at certain times than at others.

The BLS has always stressed that the output of a plant or an industry is the product of all the factors of production--all are necessary. Expressing productivity in output per man-hour does not mean that labor alone is responsible for the output; nor does it mean that the individual worker is working harder--a machine may have made his work much easier. All it means is that the total output (value added) is measured in terms of the labor input. In measuring the total private economy, or any one of the major sectors, labor is by far the largest input, amounting (usually) to 75-80 percent of the total input, including land, capital and management.

In recognition of the contributions of these other factors of production, some statisticians have devised measures of output per capital or land input. John Kendrick has gone further and computed an index of total factor productivity, combining the indexes of all factors. The BLS has examined the question of measuring capital inputs and total factor inputs. It has published some figures showing the relationship of capital investment to output per man-hour trends, but it has not developed capital productivity or total factor productivity measures. There are conceptual problems in defining either of these two measures, and also very difficult problems of obtaining data adequate for measurement. More work is needed on this problem.

Now we are ready for a look at the figures. The BLS has produced productivity indexes for the economy and its sectors from 1909 to date. John Kendrick's figures go back to 1889. The data become scantier the further back we go; the better figures are those covering the period of 1947-1965, when more detailed data were available.

For the period 1909-1947, which includes two world wars and the worst depression in American history, the average annual rate of increase in output per man-hour was about two percent. In the early postwar period, 1947-1955, there was a marked step-up in the rate of productivity increases. It is interesting to note that a similar sharp rise took place in the 1920's after World War I. In the later 1950's there was a definite slowdown; at that time there was considerable discussion about lagging economic growth. Then, for the five-year period, 1961-1965, there was a resurgence of productivity, with an average increase of 3.6 percent.

One of the problems involved in using trend averages is that one can get different results by using different time periods. Thus, a comparison of output per man-hour for the period 1956-1965 would show that productivity by the year 1965 had caused a substantial gap above the increase in real wage and salary income (real compensation per man-hour). However, by changing the time period by just one year--1955-1965--the averages show quite a different result, namely, that productivity and real compensation in 1965 are just about in balance.

The fact is that the increases in productivity vary from year to year. There have even been times when the increase was negative; that is, there was an actual decrease. Further examination of these annual variations demonstrates quite clearly that productivity increases are largest in the early years of business recovery from recession. There is also evidence that the rate of increase slows down as business prosperity reaches its peak; it may then decline if business volume drops. The reasons for this behavior of productivity have been set forth by Thor Hultgren of the National Bureau of Economic Research. During periods of prosperity, the average business firm tends to retain its workers even though technological changes are being introduced, because labor tends to be scarce and the employer wants to be sure that he has enough workers to take care of his volume of business. During a period of recession, the business firm will tend to lay

off its workers while the stream of technological innovations, which has already been started, is not seriously interrupted. In the expansion of output during the period of business recovery, the firm is able to take advantage of all technological improvements in existence and, therefore, can increase its output much faster than it increases employment. Thus, in this period there tends to be a high rate of increase in productivity. However, as time goes on more labor is required, more firms enter the industry, more overtime is worked, and more maintenance and repair is necessary. The rate of productivity increase slows down.

The operation of this principle is clearly shown in the productivity performance of the last five years. As noted above, the average annual rate was 3.2 percent for the period 1961-1965. However, for the successive years, the figures were as follows: 3.5, 4.6, 3.6, 3.5, and 2.8 percent. So, for the year 1965, when wages and salaries were increasing nearly 4 percent, the productivity increase was about 1 percent below that. This was sufficient to account for part of the rise in wholesale prices which began about the middle of 1965.

The outlook for 1966 is for more of the same. The labor market is tighter, and therefore it will be difficult to hold the nationwide increase in wages and salaries to the level of 1965. The attempts to have lagging wages and salaries catch up with the procession will be one factor in making the nationwide average higher in 1966. Large amounts of overtime also increase labor costs substantially, and, to make matters worse, they do not help productivity. Excessive overtime hours are probably the least productive of the day or the week. The additional labor hired within the last year was mainly semiskilled and unskilled, another factor which tends to develop a drag on productivity gains. It will be surprising if wage and salary incomes do not rise faster than productivity in 1966.

There is one more complicating factor which I have already mentioned; the stepping up of the rate of increase in the Consumer Price Index. It is nonsense to talk about a 3 percent increase in consumer prices in times of high-level prosperity as being "inflationary," in the wild sense of that word. On the other hand, the one factor itself can be very important in upsetting the balance of labor costs, wages and prices. The majority of the escalation contracts which now exist provides wage increases of 1 cent for each 0.4 of a point in the CPI, which is equivalent to $2\frac{1}{2}$ cents per point. This will not only raise the wages of workers covered by escalation contracts; it is likely to stimulate higher demands in new negotiations this year.

The year 1966 as such does not yet constitute a spiral, but the seeds are being sown. A continuation of the expansion into 1967 could produce more significant effects in that year.

My last lecture is entitled "Can We Prevent Inflation?" In attempting to answer that question we will review some aspects of employment and unemployment, wages and prices, and their relationship to the Consumer Price Index.

Lecture V: Can We Prevent Inflation?

I don't like to begin with definitions, but I think it is necessary to say a few words about what we mean when we talk about inflation. It is a word that's very loosely used. Some people talk as though any increase in prices is inflation. Not so! The increase has to be general, widespread and persistent--practically all prices going up, and few, or none, going down. But even that doesn't answer the question completely. Let's ask ourselves, what prices? It's natural for us to start out with the Consumer Price Index, which measures prices to consumers. However, we have also a Wholesale Price Index which consists of the prices in primary markets of business and farm commodities. That is a commodity index only; it does not include services. That index has not risen at all for the last seven years, that is, up to the last quarter of 1965. The Consumer Price Index was going up a little faster than the Wholesale Price Index, by about 1 percent a year.

However, there are other prices not covered by either of these two indexes. These are prices of business services and office rents, which play an important part in business costs. Freight rates is another set of prices which affects the costs of distribution. We might go further and talk about land values, farm lands or city properties. Construction costs are going up, and a question might be raised about measuring the prices of some of these massive office buildings. We can go even further and ask, why not include the stock market? In fact, during the 1920's, the stock market surged upward from about 1922 to 1929 before it went "over the cliff." Yet, during that period the Consumer Price Index scarcely rose at all. In retrospect, a great many people have contended that we really had a lot of inflation in the 1920's--it just didn't show up in the price indexes.

I cite all these examples just to bring into focus the subject we are discussing here. I am going to use the average citizen's definition of inflation, namely the behavior of the Consumer Price Index. There are sound economic reasons for that approach. First of all, about two-thirds of the national income is spent by consumers, so the CPI is by far the most important index in terms of the volume of expenditures represented by it. Then, too, I would say that the ultimate objective of our economic system is to provide goods and services to the consumer. Therefore, it isn't unreasonable to consider the consumer as the key to answer our question, and his price index as the test of the validity of the answer.

Next, I must bring up another question, how much of a rise? There was a time when the Brazilian cruzeiro was worth 50 cents--two cruzeiros to the dollar. But when my wife and I were in Brazil several years ago, the exchange rate had risen to 2000 cruzeiros to the dollar. It then was worth only one/one thousandth of its original value. That's a real inflation. In Chile, at that same time, the escudo had become the current unit of value. One escudo contains one thousand pesos; but the escudo in 1963 had just about the value that the peso had had in 1928. So money in Chile has declined to one/one thousandth of its original value. Or take the French

franc which is now considered one of the really stable currencies of the world. But President DeGaulle revalued the franc in 1958 at one hundred to one.

As far as the United States is concerned, the only devaluation that we've ever had took place in 1935 when President Roosevelt raised the price of gold from \$20 to \$35 an ounce. That was about a 43 percent devaluation of the dollar in terms of gold. Or, we can put it the other way around--if \$20 is considered to be an index of one hundred, then, at \$35, the price of other commodities in terms of gold would be 175. It is of interest to note that the Consumer Price Index, on a 1939 basis, is now about 230. So our prices have risen somewhat higher than the devaluation of the dollar in 1935, but not a great deal more. Consequently, inflations in this country, such as they were, have been very mild. This nation has not had a truly wild inflation since the Revolutionary War. The only inflation which most people in the U.S. have actually experienced occurred in the postwar readjustment period of 1946-1948.

During World War II controls were established on both prices and wages, so the CPI remained fairly stable during the last three years of the war. This situation was helped by the fact that people bought billions of dollars' worth of war bonds, thus mopping up the excess purchasing power of consumers for the time being. But after the war ended and controls were taken off, a flood of consumer buying was released, and the CPI rose 30 percent in two years. In the recession of 1949 the index went down about 5 percent.

When the Korean War broke out there was a temporary burst of buying, and the index went up about 9 percent in nine months. But then controls were again imposed, and the index was completely stable for the remainder of that war and throughout the 1954 recession. Next we had a post-Korean business boom (1955-1957), and this generated a 10 percent rise in the index from 1956 to 1958. That last flurry demonstrated quite vividly the characteristic time lag of the CPI. It takes about a year of full prosperity to start the index moving up significantly; then it takes sometimes nearly a year of business recession to head it off and start it downward.

Lately, in the seven years from 1958 to 1965, the index went up only a little more than one percent a year. Furthermore, a major part of that rise was due to increasing prices of services. Consumer durable goods, such as automobiles, household appliances, and furniture, were scarcely any higher in price in 1965 than they were in 1958.

So, now here we are in 1966, with a business recovery which has lasted for five years. In February, 1961, we hit the bottom of the recession, and we are now well into March, 1966--the longest period of peace-time recovery in our history. During that time we increased our employment by nearly seven million jobs, but since we also lost a million and a half jobs in agriculture, industry and government had to expand by nearly eight-and-a-half million jobs, which they did. In the process we reduced unemployment by one and a half million. Over these five years we have successfully and

persistently moved upward until we reached a period of relatively low unemployment, about 4 percent of the labor force, and the rate is still declining.

As President Johnson pointed out in the Economic Report of 1966, this business recovery has been stimulated by a number of government actions. There were tax credits for business concerns in 1962, income tax reductions for both corporations and consumers in 1964, and expenditures for the various anti-poverty programs in 1965. Now, in 1966, the government is increasing its military expenditures.

The net result of these measures is that we are now reaching a state of labor scarcity. On that point I would like to give you some figures which show that we really do have a labor scarcity in an economic sense. There were about 68 million workers employed in the first quarter of 1966. Of these, about 14 million are factory workers employed in manufacturing industries. Now, when an employer can't get labor, can't find any unemployed who can do the work, he pays overtime. Some of the recent Bureau of Labor Statistics figures show that the amount of overtime, at premium pay, worked by factory workers in manufacturing industries, was about 4 hours a week. This is equivalent to a five-and-a-half day workweek, and in relation to a workweek of 40 hours, this overtime is ten percent. Computed for the nearly 14 million factory workers, this overtime is large enough to absorb almost $1\frac{1}{2}$ million unemployed at straight time--assuming that the unemployed could do the work.

Next, we have nearly 4 million people who hold two or more jobs in a given workweek. Some of them hold two part-time jobs in order to obtain full-time work; some a full-time job, with a part-time job on the side; and a few two full-time jobs. The average time worked per week by these nearly 4 million workers is 53 hours. That is thirteen hours of overtime, so to speak, which is the equivalent of a million and a quarter jobs at straight time. The combination of these two types of overtime comprises enough work to absorb nearly all the unemployed. Finally, we have all the overtime worked by the other 50 million who are at work in the economy.

I venture to say that, if all the overtime now worked by about 68 million employees could be passed on to the unemployed, there wouldn't be enough unemployed to go around. I should also point out that about a fifth of the unemployed want only part-time jobs anyhow.

I must emphasize that all these calculations are purely hypothetical. Workers' skills are not readily interchangeable. Whatever may have been the situation in the past, we are now down to the bedrock of structural unemployment.

Lord Beveridge in England, in 1942, defined "full employment" as the condition when the number of unfilled vacancies and the number of unemployed were equal. Now that's about where we are at the present time in the United States. There are lots of jobs available, but the unemployed don't fit them.

Consequently, we are now devoting more resources to training, retraining, educating, and developing the unemployed, so that they will be able to fill the available jobs; at the same time we have programs designed to create jobs of a kind that the unemployed can fill. The objective is to reduce unemployment to the lowest practicable level.

Now I return to my main point. There is a labor shortage, and that shortage will continue during 1966. Unemployment will be reduced some more, employment will expand some more, and overtime will increase. What will happen then? President Johnson has called for restraint; let the economy work naturally (without controls), but let everyone buy carefully and economically. Here I am reminded of a story that I have told many times, which illustrates consumer psychology in 1950, when the outbreak in Korea occurred. Immediately, consumers all over the United States recalled what had happened in World War II, and they rushed out to buy the things they thought would be scarce. There was a tremendous run on sugar, without any reason. So a grocer in Washington, D.C. scribbled a great big sign across his store front "Sugar--10 lbs.--98¢." Sugar was selling everywhere else at half that price--49¢. But he sold his entire stock at once. Then he wrote a letter to the papers and explained what he had done. He said, "I gave that money to charity; I just wanted to show how foolish people are."

That was panic buying, and it helped put the CPI up sharply in the summer of 1950. This rise then affected previously negotiated labor contracts. Hundreds of contracts were reopened in order to write in escalation clauses, which in turn began compounding the wage increases into further price increases. This spiral continued until controls were imposed in the spring of 1951.

In 1966 there has been no such panic buying, and the index has risen only moderately thus far. It is moving up about twice as fast as the 1.2 percent rise of recent years. But this year wages have received more attention. The Administration is vigorously pursuing a policy of holding wages (and salaries) within the limits of productivity gains, so that labor costs can be kept down and prices held at, or near, present levels. The unions are in the limelight because their collective bargaining agreements affect the general public, and because they initiate wage increases and push wages up earlier than these would rise naturally. Furthermore, in a tight labor market it is easier to win better bargaining agreements from employers.

The "guide post" policy has been in existence for the past four years, and up until 1966 it seemed to work quite well. On the average, the wage increases amounted to little more than the average productivity gains of the economy. Labor costs and prices were fairly stable. However, there is a significant point about those average wage increases; as pointed out before an average increase of 3.5 percent has resulted from collective bargaining, ranging from increases as high as 8 percent down to 1 percent, with some workers getting none. Our immediate problem in 1966 is, what will happen to the 8-percenters now? And what about the workers who got nothing, or increases of 2 percent? Some of the recent demands have come from the miners,

for example, who haven't had a wage increase for a long time. Is it reasonable for them to ask for an increase all at once that would make up for three years of no increases? If all those workers who got less than the average in previous years now attempt to catch up, then the 1966 average increase is bound to be higher than in recent years.

But the unions are not the only problem. We discussed the fact that in a tight labor market employers bid wages up, and this factor can be fully as important as collective bargaining. If there are no qualified unemployed and the employer needs workers, how can he induce them to move? About the only way you can attract a worker from a job he already has is to raise his pay--wages or salary. This principle operates in non-union employment even more forcefully than in organized industry where the union has an incentive to keep some kind of discipline. In order to move labor in a tight market, wages have to be bid up, and the "wage drift" then operates. In Sweden, for example, the unions, the employers, and the government agreed on a general wage increase well below the productivity gains. But the actual increase turned out to be twice as high--the bidding had sent the wages up.

An alternative to persuasion and restraint is the exercise of monetary policy--raise interest rates and tighten up on credit. Interest rates are going up because the demand for credit exceeds the supply. But if the Federal Reserve Board encourages bankers to lend more money, and bankers find it practicable to do so, credit will then be available and businessmen can continue to expand.

Easy money is designed to encourage businessmen to borrow and expand their businesses. But rising interest rates are certain to have some effect on expansion. In the first place, some businessmen won't be able to stand the rise and must therefore cut back. Some consumers might also be cut off. But consumers usually don't pay much attention to interest rates; they pay from twelve to fifteen percent interest on most of their medium-term credits and a rise of one or two percent would hardly deter them from borrowing.

However, the major effect of a rise in interest rates is to make capital values fall, and this is the really deterrent effect. For example, if you own a bond worth a thousand dollars, paying 4 percent interest, and if the going interest rate rises to 5 percent, you won't be able to sell the bond to anyone else for a thousand dollars. You might have to take \$950. Bond prices are now declining in the financial markets, due in large measure to rising interest rates. The decline in the value of bonds and other fixed assets tends to undermine the strength of banks and insurance companies, and therefore tends eventually to drag the economy downward. But this works rather slowly--it takes time.

Still another alternative is fiscal policy which involves the government itself. I mentioned how the government stimulated recovery by means of tax adjustments. But the government also spends more money. It invests money by building roads, dams, office buildings, etc. And it has expanded Social Security benefits, as well as payments under the various welfare and anti-poverty programs.

If the government can stimulate business by doing those things, it can also cut back spending by doing the opposite. In the first place, it can cut its own spending. A little bit of that kind of cutting occurs naturally. For example, not so much is paid out in unemployment insurance when there are fewer unemployed; or perhaps fewer people will retire on Social Security; some of the retired may even get jobs and return to the full-time labor force. But that's about all that can be done on that side. The government doesn't find it easy to cut down on current programs, whether they involve public works or welfare. There is a lot of glib talk about "slashing government spending," but most of it is, quoting Shakespeare "a lot of sound and fury, signifying nothing." It is almost impossible to cut a peace-time government budget by very much.

The alternative, then, is to raise taxes, and this is a very natural thought, because in 1964 there wasn't any doubt that the tax cut was an immense stimulus to the expansion of 1965. It put money in people's pockets, the consumer spent that money, and the economy boomed in response to it. We could now do the opposite: we could eliminate the tax cuts or readjust taxes in some other way. That would yield sufficient revenue to enable the government to pay its bills, and it would cut down on the spending power of the consumer. It would soon take the heat out of the economy.

However, there is a further problem in connection with taxes--on whom should the blow fall? Do we want to cut back business investment? Or should we cut down on consumer spending? Or should we cut back on both? Make no mistake about this: a vigorous and substantial tax increase would surely slow down the economy.

Then we have still another problem--our international balance of payments. We thought that this situation would improve in 1966--a near balance was predicted. But the tide is running the other way: more military expenditures in Vietnam, more foreign aid to other countries, more tourists going abroad and spending more. I'm not going to discuss the international situation any further, but I do want to indicate that this is a factor that may eventually determine the decisions the Administration must make in order to control the situation.

Finally, I haven't mentioned government controls, because I can't see them as a possibility in 1966. Let me remind you, however, that in a war-time situation almost every government imposes controls; but governments seldom do that until they have no other choice.

We now come to the crucial issue at this moment, namely, the question of timing. The average citizen often has no comprehension of the importance of time in economics. My favorite illustration of this point concerns the elimination of government controls in 1946. I recall that businessmen argued that we should take off these controls; then business would expand, production would increase, and prices would come down. Now, that's perfectly good economics; but they forgot to explain that it would take some time to to bring about the result--and it took two years. In the meantime prices

went up, not down, and the average citizen thought the argument was a huge joke. The businessmen were right in the long run, but their argument was discredited by the "slowness" of time. This point is important today in the sense that some alternatives take longer than others to work themselves out. And that does limit the choices available to us; the longer we wait, the fewer choices we have.

So I can answer the question I posed at the beginning, "Can we Prevent Inflation?" Of course we can. But first we must make sure that we really have inflation, and this may not be quite clear in the near future.

The Consumer Price Index, as Commissioner Ross indicated in his congressional testimony, is likely to go up faster this year. But the rise, as pointed out before, is usually much sharper in the first half of the year than in the second half. Meat prices are subject to cyclical variations; fruit and vegetable prices normally go up seasonally, but if crops are short or if the weather is bad, those prices can really jump. In that case the index experiences several months of superrises, usually in April, May and June. The effect of such rises upon collective bargaining and wage escalation I leave to your imagination. However, I do want to emphasize that such a development could be quite misleading. It could lead people to think that the fires of inflation were underway, when in fact they are not. We cannot project the behavior of the price index during the first six months to the end of the year.

In conclusion, let me observe that if it comes down to the necessity of a firm decision, my judgment would be that the government would choose to raise taxes. That's a guess on my part, of course. But tax increases have the advantage that they can be made effective immediately, and they can be engineered to produce the desired result fairly quickly.

So, we can prevent inflation, without question! There are plenty of tools in the economist's kit to put the brakes on expansion. The important question is when to do it.