Journal of Accountancy

Volume 26 | Issue 1 Article 1

7-1918

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The Journal of Accountancy

Official Organ of the American Institute of Accountants

Vol. 26 JULY, 1918 No. 1

# A Method for a Compensated Wage By Index Numbers

By L. K. Comstock

No problems confront us oftener than those arising from the relation of employer and employee. In fact, this relationship is probably the most important one that engages the attention of the business and industrial world and transcends in importance the problems now being solved on the battle-fields of Europe, although perhaps inextricably mingled with those problems.

We as citizens of the United States, whether we belong to the ranks of labor or the employers of labor, have been derelict in our duty, because we have negligently or deliberately refused to look intelligently into this problem, to seek out the facts of human nature involved and to be guided by what could have been found. The prejudices and traditions of the past still linger to make the employer look upon labor not in the spirit of coöperation, but in the spirit of the master toward the servant. On the other hand, centuries of tradition and prejudice have made the laboring man, the mechanic, look upon his employer as a man to be feared and hated. He has had perhaps a just cause for his servile attitude. But in these modern days of democracy and unions, he has felt his strength and has endeavored to obtain by force what he thought he wanted and could get, because he knew no other way. There have been many exceptions, of course, to the general rule, and many employers for generations have had the best of relations with their employees. But neither employers nor employees have been fully conscious of their respective obligations to each other and in time the old problems confront them.

Not much conscious effort has been expended on the solution of these problems for the purpose of realizing predetermined results. Only by striving for the impossible may we attain the possible.

I think it may be stated without fear of contradiction that these problems taken in the mass have drifted toward temporary or opportunist solution rather than yielded to the power of reason and logic. Most labor disputes in the past have been tinged with anger on one side or the other and generally on both sides; or they have been regarded as sporting events in which the contestants have played for the stakes for sheer love of the game. A labor dispute hardly rises to the dignity of the term unless accompanied by a strike or a lockout. In either of these cases both sides lose, a circumstance readily producing anger, and therefore usually an unjust settlement, or divesting the game of its sporting character.

In discussing "war and human progress," Viscount Bryce points out the distinction between two schools of philosophical thinkers or historians. One of these schools emphasizes "the power of reason and of those higher and gentler altruistic emotions which the development of reason as the guide of life tends to evoke and foster," and finds in these tendencies "the chief sources of human progress in the past and expects from them its further progress in the future." This school regards men "as capable of a continual advance through the increasing influence of reason and sympathy" and dwells upon "the idea of justice and right as the chief factors in the amelioration of society."

The other school, less optimistic, insists "on the power of selfishness and of passion, holding these to be elements in human action which can never be greatly refined or restrained, either by reason or by sympathy," that "social order can be secured only by force—right itself can only be created by force," and that "it is past force that has made what men call right and law in government."

The tendency of this second school is "associated with the less rational element in man—with passion and the self-regarding impulses which naturally attain their ends by physical violence."

The conflict between these two philosophies which Bryce finds is the fundamental provocative of the great world war, thoughtful persons find also is the fundamental provocative of industrial conflict.

Boiled down, these two schools of thought can be described as *the forward looking* and *the reactionary schools*: the former builds on faith and the latter constructs its edifice out of the old materials of the past.

You have all known the employer who could see nothing good in unions and whose pessimism in regard to his relations with labor was not only depressing to himself but to all those who came within the sound of his voice. You have all known the swaggering, bullying labor delegate whose only weapon was a strike, or threat of strike, not to speak of anything having a long green background.

The modern steel frame building is a product of vision and faith; the four-story composite of wood and brick is the heritage of the past. Democracy is the product of vision and faith: monarchy is the heritage of the past. The conference club is the product of faith: senseless, blind and vicious competition is our heritage of the past.

I cannot do better here than to quote the words of President Wilson when speaking to the convention of the American Federation of Labor at Buffalo last November:

> Now to "stand together" means that nobody must interrupt the processes of our energy, if the interruption can possibly be avoided without the absolute invasion of freedom. To put it concretely that means this: Nobody has a right to stop the processes of labor until all the methods of conciliation and settlement have been exhausted, and I might as well say right here that I am not talking to you alone. You sometimes stop the courses of labor, but there are others who do the same. And I believe that I am speaking of my own experience not only, but of the experience of others, when I say that you are reasonable in a larger number of cases than the capitalists.
>
> I am not saying these things to them personally yet, because I haven't had a chance. But they have to be said, not in any spirit of criticism, because I would like to see all the critics exported; but in order to clean the atmosphere and come down to business, everybody on both sides has got to transact business, and the settlement is never impossible when both sides want to do the square and right things. Moreover, a settlement is always hard to avoid when the parties can be brought face to face. I can differ with a man much more radically when he isn't in the room than I

can when he is in the room, because then the awkward thing is that he can come back at me and answer what I say. It is always dangerous. We must insist in every instance that the parties come into each other's presence and there discuss the issues between them, and not separately in places which have no communication with each other.

After incalculable losses, to both employer and employee through many years, by reason of strikes and lockouts, it would seem that the time had arrived for these two parties to apply to their differences some degree of intelligence, common sense and sympathy. The union mechanic cannot get along without his employer, nor can his employer get along without his mechanics. This being so, why is it not the part of common sense to admit it frankly and work peaceably in team harness? Let both the employer and employee make a virtue of necessity. Let the employer study sympathetically the needs and requirements of his men, and likewise let the union see to it that the men work faithfully and sympathetically for their employers.

In the January, 1917, number of *The Annals* of the American Academy of Political Science, Leo Wolman discusses the growth of unionism in the United States and divides trade union labor into three classes, according to the extent to which the trades have unionized their ranks. If the electrical trades, for instance, are classified under the general heading of building trades, then they are but 16 per cent. unionized; if under the heading of electric light and power, then but 14 per cent. unionized. If the International Brotherhood of Electrical Workers would consult its own best interests in an intelligent effort at coöperating with the employers, it would make a more determined effort to unionize more than 16 per cent. of the craft.

This should have been done in normal times, but now the necessity is even more apparent. The method of recruiting lies obviously in treating the apprentice question more liberally by making the inducements more attractive for apprentices passing to the grade of helper; and then passing the helpers along with fewer obstacles to the grade of journeyman.

One of the principal indications of an impending shift in the front of the labor movement in this country is found in the fact that many of labor's foremost spokesmen admit that in increased production lies one of the most hopeful routes to a higher social and economic status for those who work with their hands. In several recent reports—largely influenced by the American Federation of

Labor—where this question of the effect of increased production was distinctly raised, labor's representatives refused to oppose increased production as such. This is a far step from the "soldiering" recently openly advocated and practised.

It may be argued that trade union activity in the direction of curtailing output, restrictions on apprenticeship and its successful demands for shorter hours has made a real contribution toward increased cost of living. This argument is generally believed by certain classes of employers. Let us examine the available data on this subject. The federal bulletin on wholesale prices in 1913 cites twelve important food, fuel and shelter articles, which on the average showed a price range for the year 1913 over sixty per cent. higher than their price range for the period from 1890-1899. The whole 252 articles listed in the bureau's bulletin showed a price rise for the same period of only thirty-five per cent. It should be stated that eleven of the twelve articles above mentioned were produced by farmers, ranchers, timber men and oil workers. These groups of workers are not organized into unions, and yet the commodities they produced show a price rise 70 per cent. greater than that of average goods. Apparently organized labor exactions do not account for this great rise in eleven staples.

The general federal report on wages published in 1908, covered wages for 1907 and preceding years. This report covered 350,758 workmen, including highly organized groups, such as the building trades (45,537), the marble and stone cutters (5,316), the printers (14,461) and the foundrymen and machinists (27,612). It included also 28,179 municipal workmen. This report showed that the average full time weekly wages of these 350,758 workmen were, in 1907, 22.4 per cent. higher than the wages for similar work had been on the average for the period 1890-1899. The report also showed that the average working hours per week had decreased five per cent. between the average for 1890-1899 and 1907. Allowing for this decrease in weekly hours, it appears that average hourly wage increase was 28.8 per cent. But the staples above cited had during the same period increased over 50 per cent. in price above their prices in the nineties. If the activity of organized labor were the sole cause of the average rise in wages of 22.4 per cent. weekly for this great representative body of workmen, it would be difficult to see any causal connection between a 22.4 per cent. rise in wages and a 50 per cent. rise in prices; especially when we take into consideration that labor constitutes but 18.6 per cent. of the total reported expense of production, and that an average rise in wages since the nineties of even 40 per cent. would mean an increase of less than 8 per cent. in production expense.

The great trouble seems to lie in the fact that collective bargaining is conceived in terms of unionism, closed shop and walking delegates, and there does not seem to be a comprehension of the fact that a compromise exists which will safeguard the rights of the employer and worker without injustice to either.

Speaking of the Chicago clothing strike in 1915, Mr. Schaffner said:

> Industrial peace will never come so long as employer or employee believes he is being deprived of rights honestly belonging to him. Arbitration and conciliation should be applied to all departments of business wherever there is a conflict of interests. It ensures exhaustive discussion of every matter of importance, gives everybody a chance to express his opinion, brings to light valuable suggestions, and makes possible a higher degree of co-operation and team work.

Union leaders have expended their energies in the past, ostensibly at least, to gain higher wages and better working conditions. Employers have with the greatest reluctance yielded in these two sets of demands when their intelligence should have dictated an early and willing acquiescence. By this statement, I do not mean to imply a servile acceptance on the part of the employer of any demand; but I do wish to convey the idea that if the employer had earlier recognized the right of employees to unionize—had earlier perceived that the time had come or was at hand when public opinion would support the union demand for a larger and a fairer share in the fruits of his laber—union labor would have naturally cultivated a more sympathetic attitude toward employers, and the dishonest labor leaders would have been robbed of their opportunities for grafting—opportunities provided many times by those very employers who have cried out most loudly against the practice.

We talk of open shop and closed shop as though we were entitled to choose under which emblem we desire to conduct our operations. In a limited sense we have this right, but it is well to bear in mind that the right of the employees to strike for any cause or for no cause is sustained by the common law everywhere in the United States, and that agreements among strikers to take peaceable means to induce others to remain away from the works of an employer until he yields to the demands of the strikers are not held to be conspiracies under the common law, and the carrying out of such a purpose by peaceable persuasion and without violence, intimidation or threats is not unlawful. Many of the labor disputes which have reached the courts have been decided according to the common law; but twenty-three states and the federal government have laws or constitutional provisions for arbitration and conciliation, although the federal statute applies only to common carriers engaged in interstate commerce. Reference to these legal phases of the subject is made only to direct attention to the very considerable efforts which have been made toward settling disputes without recourse to the courts.

Much of our trouble with labor has arisen from that ever-recurring attempt to adjust the wage question. I think it within the limits of truth to say that this question is rarely if ever settled equitably. It is settled usually only after a strike and protracted negotiations, and then without any particular reference to the equities of the case. The side on which the ablest or most stubborn negotiators sit wins. Such settlements are innocent of scientific considerations or adjustment and the hidden designs of the negotiators cannot stand the test of daylight.

It can well be admitted that labor is constantly demanding higher wages. The employer as constantly resists. One or the other must give way or a deadlock ensues and bitterness, perhaps violence, results, with loss to all concerned. A just and scientific consideration of the facts should point the way to any readjustment of wages. Is it not worth while and certainly expedient to inquire, when wage readjustment is demanded, whether or not the facts support such a readjustment?

Wage earners must receive something more than the cost of their support, because if this were not so, it would be impossible for them to bring up families and the race of such workmen would not outlast a generation. It would appear then that the employer from purely selfish motives must take intelligent cognizance of the relation between cost of living and rate of wages. As the cost of living rises, the rate of wages must advance with equal increments, in order to maintain the relative position in the economic world of the wage earner. No one will deny the correctness of this theory—it remains then to find a practical method of its application.

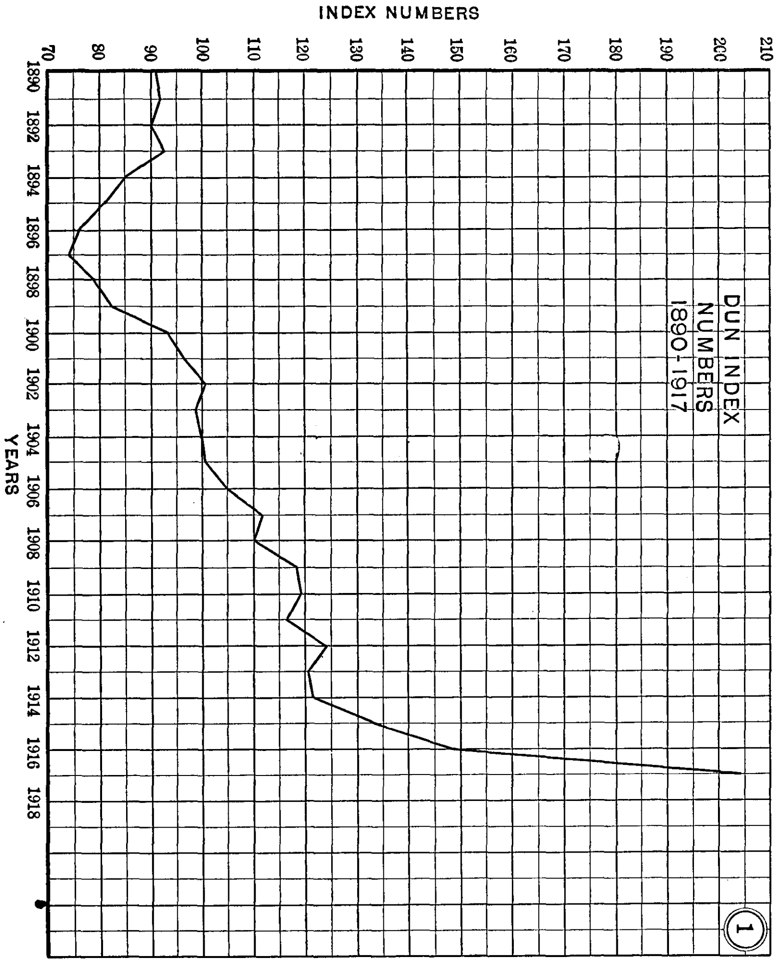
For many years the practice has been common of tracing general commodity price tendencies and reducing them to a common number called an index number. This index number is indicative of general tendencies and takes due account of both the simultaneous rise and fall of different commodity prices and their proper weighting. There are several institutions producing these index numbers monthly, and they are in general agreement, although developed in different ways. Such index numbers are calculated by the London *Economist,* London *Statist,* Bradstreet, United States department of labor, Gibson, Babson and others.

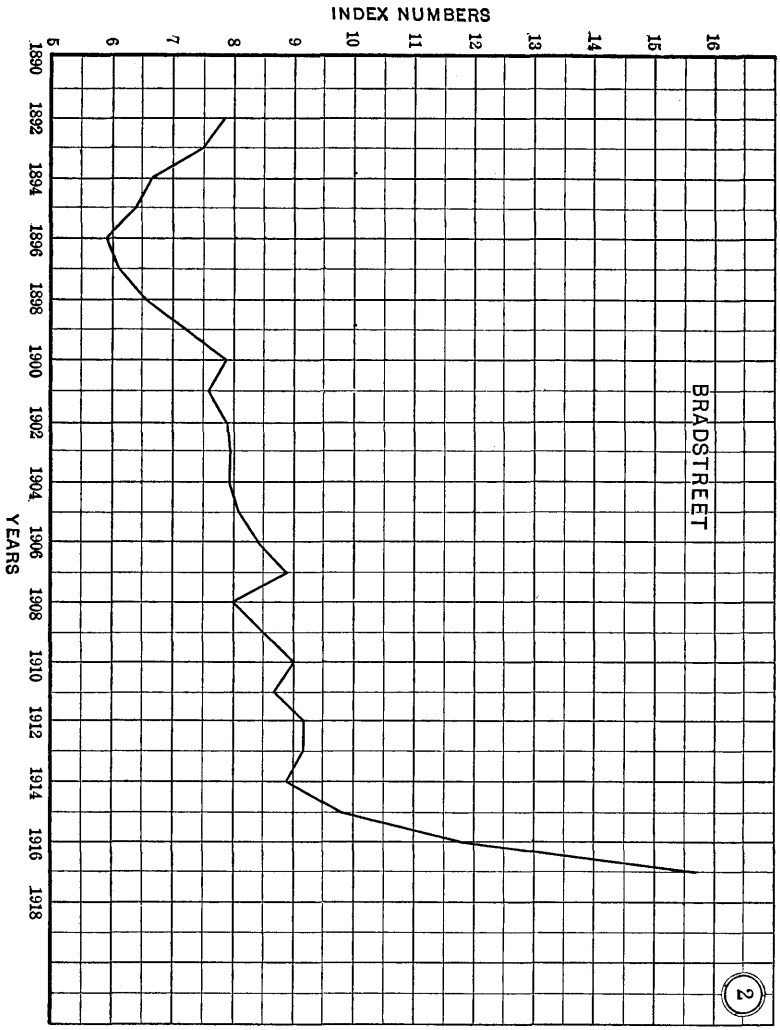
For a great many years the Dun index numbers had the approval of the business world. These numbers were based on an approximately scientific conception of the important factors of the cost of living, because a constant weighting of the commodity groups was maintained, irrespective of the number of commodities in the group. The Gibson index is designed to continue the Dun series, which ceased with the number for May, 1907. The Gibson numbers claim to be a satisfactory measure of the rise and fall of commodity prices.

Carroll D. Wright, the first statistician of the bureau of labor, devised the plan of recording the actual and relative prices of a long list of commodities from which investigators may make such selections and combinations as their purposes require. The development of an index number must be made with due regard for the purpose for which it is to be used.

Seven index numbers are available for the study of price movements. The first step toward comparing different systems of index numbers is to throw them into similar form and establish them upon a common base. A cursory examination shows that these seven series, made by five independent organizations, have a marked family resemblance. The testimony concerning the major facts of price fluctuations from these seven different sources is so unanimous that one can scarcely doubt its validity.

In thinking of index numbers it should be remembered that during the last nineteen years throughout the gold-standard world, the general level of prices has been rising, or, in other words, the purchasing power of gold has been falling; that all indications point to the continuation of this tendency for many years to come, and that this progressive shrinkage in the purchasing power of gold is a serious menace to the stability of business, disturbing the normal relations between those forms of income or prices which are relatively fixed, such as interest, rent, salaries and wages, and those which are more promptly adjusted, such as the prices of most stable commodities.




INDEX NUMBERS
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YEARS
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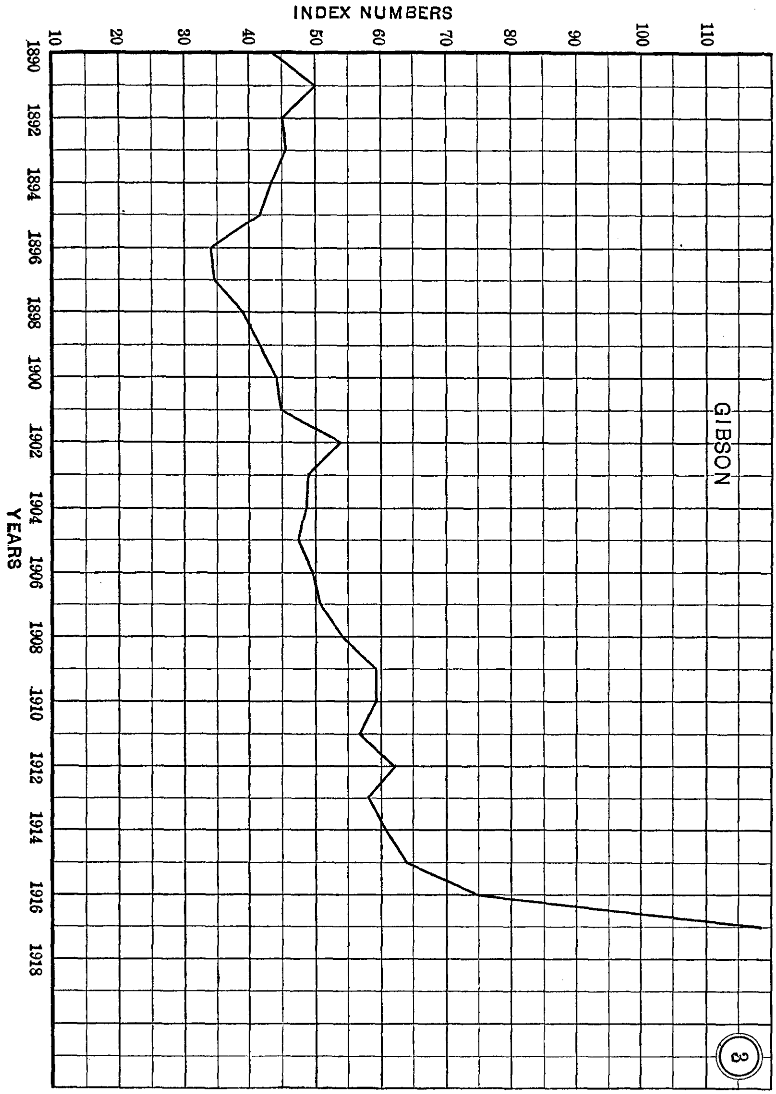
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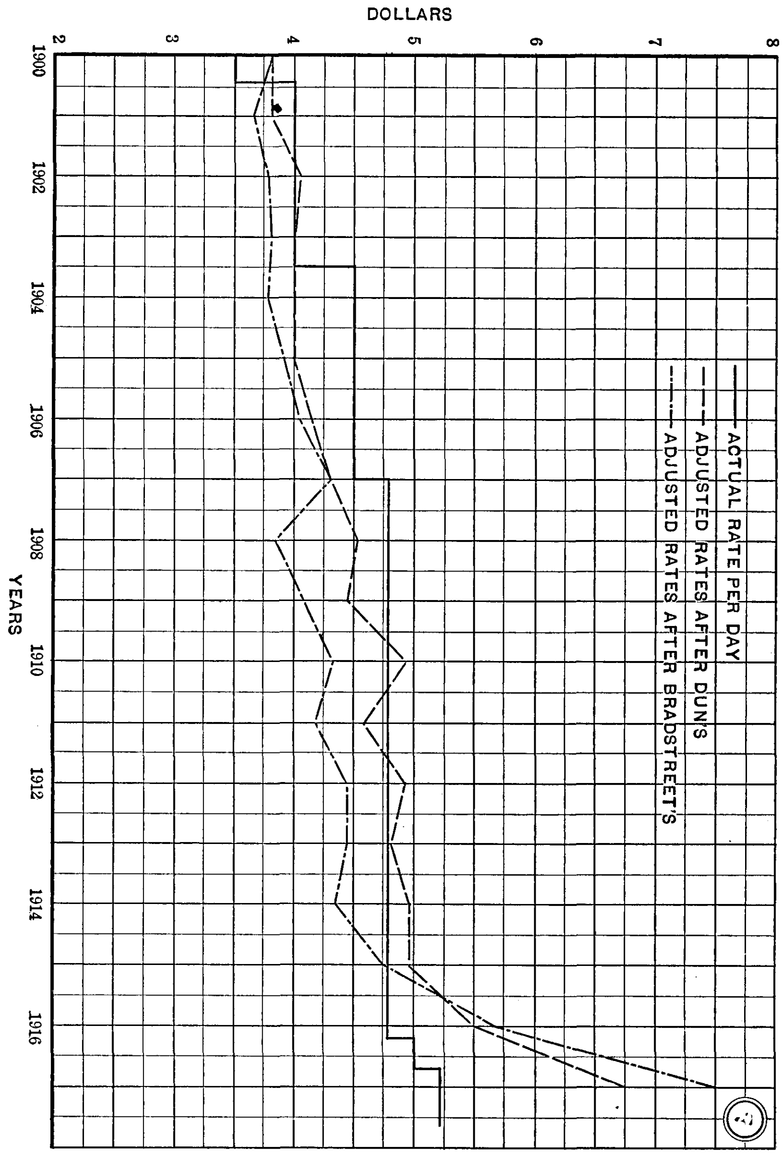
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1916
ACTUAL RATE PER DAY
ADJUSTED RATES AFTER DUN'S
ADJUSTED RATES AFTER BRADSTREET'S

| | | Dun | | Gibson | | Bradstreet | | Dept. Labor | |
|---|---|---|---|---|---|---|---|---|---|
| | Year | Index No. | Ad-justed | Index No. | Ad-justed | Index No. | Ad-justed | Index No. | Ad-justed |
| 1 | 1890 | 90.9 | 61.08 | 43.4 | 57.83 | * | .... | 66 | 66 |
| 2 | 1891 | 92.2 | 61.95 | 50.9 | 67.69 | * | .... | 66 | 66 |
| 3 | 1892 | 90.0 | 60.48 | 45.3 | 60.25 | 7.78 | 65.81 | 61 | 61 |
| 4 | 1893 | 92.4 | 62.09 | 46.0 | 61.18 | 7.53 | 63.70 | 63 | 63 |
| 5 | 1894 | 84.7 | 56.91 | 43.4 | 57.83 | 6.68 | 56.51 | 56 | 56 |
| 6 | 1895 | 81.3 | 54.63 | 42.0 | 55.86 | 6.43 | 54.39 | 57 | 57 |
| 7 | 1896 | 76.0 | 51.07 | 34.0 | 45.22 | 5.91 | 50.00 | 54 | 54 |
| 8 | 1897 | 74.0 | 49.72 | 37.7 | 50.14 | 6.12 | 51.77 | 54 | 54 |
| 9 | 1898 | 78.9 | 53.02 | 38.7 | 51.47 | 6.57 | 55.58 | 56 | 56 |
| 10 | 1899 | 82.8 | 55.64 | 41.6 | 55.32 | 7.21 | 60.99 | 60 | 60 |
| 11 | 1900 | 93.4 | 62.76 | 44.2 | 58.78 | 7.88 | 66.66 | 65 | 65 |
| 12 | 1901 | 95.9 | 64.44 | 44.5 | 59.18 | 7.57 | 64.04 | 64 | 64 |
| 13 | 1902 | 100.4 | 67.46 | 53.5 | 71.15 | 7.88 | 66.66 | 69 | 69 |
| 14 | 1903 | 99.0 | 66.52 | 49.0 | 65.17 | 7.94 | 67.17 | 69 | 69 |
| 15 | 1904 | 100.2 | 67.33 | 48.3 | 64.24 | 7.92 | 67.00 | 70 | 70 |
| 16 | 1905 | 100.6 | 67.60 | 47.2 | 62.77 | 8.10 | 68.52 | 69 | 69 |
| 17 | 1906 | 105.3 | 70.76 | 49.8 | 66.23 | 8.42 | 71.23 | 72 | 72 |
| 18 | 1907 | 111.8 | 75.13 | 50.9 | 67.69 | 8.90 | 75.29 | 76 | 76 |
| 19 | 1908 | 109.9 | 73.85 | 54.2 | 72.08 | 8.01 | 67.76 | 74 | 74 |
| 20 | 1909 | 117.8 | 79.16 | 59.2 | 78.73 | 8.52 | 73.08 | 79 | 79 |
| 21 | 1910 | 119.2 | 80.10 | 59.3 | 78.87 | 8.99 | 76.05 | 81 | 81 |
| 22 | 1911 | 116.8 | 78.49 | 56.9 | 75.67 | 8.71 | 73.68 | 77 | 77 |
| 23 | 1912 | 124.4 | 83.59 | 62.6 | 83.25 | 9.19 | 77.74 | 82 | 82 |
| 24 | 1913 | 120.9 | 81.24 | 58.1 | 77.27 | 9.21 | 77.91 | 81 | 81 |
| 25 | 1914 | 122.2 | 83.11 | 60.8 | 80.86 | 9.72 | 82.23 | 80 | 80 |
| 26 | 1915 | 126.4 | 84.94 | 64.0 | 85.12 | 9.85 | 83.33 | 81 | 81 |
| 27 | 1916 | 148.8 | 100.00 | 74.9 | 100.00 | 11.82 | 100.00 | 100 | 100 |
| 28 | 1917 | 204.1 | 137.15 | 110.8 | 147.36 | 15.64 | 132.31 | † | .. |
| 29 | Sum | 2960.3 | 1990.22 | 1471.2 | 1957.21 | 218.50 | 1849.41 | 1882 | 1882 |
| 30 | Average | 105.7 | 71.08 | 52.5 | 69.9 | 8.40 | 71.13 | 69.7 | 69.7 |
| 31 | Base, 1916 | 148.8 | .... | 74.9 | .... | 11.82 | .... | 100 | .. |
| 32 | Multiplier | .672 | 1. | 1.33 | .... | 8.46 | .... | 1.00 | .. |

* No numbers recorded. † Not yet published.

This table gives the average yearly index numbers according to Dun, Gibson, Bradstreet and the department of labor from 1890 to 1917.

Line 29 gives the sums of each of the columns. Line 30 shows the average. Line 31 gives the base figure selected, that is, the year 1916 for each index number. This index number for 1916 is then called 100. The actual index number for 1916 divided into 100 yields as a quotient a number which, used as a multiple, will reduce all of the index numbers in that column to a common base, for comparison.

It is entirely within the possibilities that prices may rise more and more until many years hence we shall see the culmination of this rising price epoch, unless in the meantime wonderful new gold fields are discovered. The synthetic chemist and the electrical engineer may of course check this rising tide of prices in spite of any failure to discover new gold deposits sufficiently large to be effective. The generation which succeeds in producing flour and meal and sugar cheaply, by a synthetic process, will have made vastly more progress in world production than the nineteenth century made when it added the Mississippi Valley and Canadian and South American plains to the world's producing areas.

Rising prices are by no means an unmixed evil. A long period of prolonged rising commodity prices energizes the business world generally, operates to the advantage of debtors and of owners of production processes and to the disadvantage of creditors generally, of wage earners, of salaried persons, and of receivers of fixed incomes. It causes interest rates to rise, lessens the severity of crises and the duration of depressions and stimulates social reconstruction, both in fact and in philosophy.

I desire at this point to indicate how small is the general perception of the change of the value of the dollar by quoting the words of the venerable but peppery president of the American Federation of Labor at a public hearing, April 6, 1916, before the committee on labor of the house of representatives on a joint resolution to appoint a commission to study social insurance. He said:

> The statement to which I took exception and which I now emphasize was a subtle blow at the life and vitals of the trade union movement and trade union activity. If, as Dr. Rubinow's charge implies, trade union work has brought about this one condition, that wages have not kept pace with the cost of living, if despite trade union activity in the past twelve years there is fifteen per cent. less of purchasing power of the necessities of life, then the whole work of the trade union movement is wrong and must of necessity be a failure. So far as I am concerned, I will say this, that if I believed that to be a fact, I would not give my time and my life to trade union work, and I would not advise any man or woman to join a trade union. If the conditions of the workers are worse than they were twelve years ago, as I say, our cause has been a failure.

During the decade 1899 to 1909, the general price index rose from 99.5 to 130.0, an increase of over 30 per cent. In other words, the commodity price level went up faster than the money earnings of labor, according to the figures prepared by the bureau of labor statistics; hence the real annual returns for labor showed a decline, slight in some trades, but large in others. The evidence, then, indicates that all the intrenchments of organized labor, all the legislation in favor of the laboring classes, have failed to prevent the downward trend of commodity wages.

Irving Fisher, professor of political economy at Yale, proposed a plan in 1912 for stabilizing prices by stabilizing the gold dollar, by means of index numbers of prices, such as those of Sauerback, the *Economist,* the British board of trade, the United States bureau of labor, Bradstreet or Gibson. He called this a compensated dollar.

The bulletin of the bureau of labor statistics, number 173, says:

> The first step framing a clear idea of the ultimate use of the results (that is, index numbers) is most important, since it affords the clue to guide the compiler through the labyrinth of subsequent choices. It is, however, the most frequently omitted. When the end in view is specific and capable of precise statement, the problem of choosing methods is comparatively simple. Straightforward logic then determines what commodities should be included, what sources of quotations should be drawn upon, and how the original data should be worked up to give the most significant results.

To consider specifically the application of such an index number to the wage scale of a New York union of skilled mechanics, let us assume a base or par rate of wages, arrived at by mutual agreement—say, for instance, $5.20, which is a rate that went into effect April 1, 1917. Dun's index number on that date was 190,012. Let us assume that wages shall be readjusted once in six months. Dun's index number for October 1, 1917, six months later, was 219.679, or an increase in general commodity prices of 29.667, or 15.6 per cent.

On authority of the bureau of labor statistics, the wage earner spends three-quarters of his wages for food, clothing and rent, and other things responding to these general price fluctuations. He would then set aside $3.90 out of the $5.20 for subsistence. The index number for the end of the six months period indicates that subsistence costs 15.6 per cent. more; therefore increase $3.90 by 15.6 per cent., making it $4.50, to which should be added the quarter of the base rate not affected by the commodity market, \$1.30, thus making the readjusted rate \$5.80, or a net advance over the base rate of 60 cents a day.

The corresponding Bradstreet numbers are 14.5769 and 16.9117; the difference, 2.3348, shows an increase in the index of almost exactly 16 per cent. Applying this number as before, the adjusted wage is \$5.824, or an advance of sixty-two and four-tenths cents for the six months' period ending October 1, 1917.

Let us examine the rate of wages of the same union from the index number point of view over a longer period of time, beginning with the year 1900. The rate in 1900 was \$3.50 a day. The Bradstreet index for that year was 7.88. The average monthly index for eleven months of 1917 was 15.4595. The difference between the two indexes, 7.5795, shows an increase in 1917 of 96 per cent. Increasing three-quarters of the 1900 rate by 96 per cent. (\$2.52), the corrected rate for 1917 would be \$6.015, or in other words, the purchasing power of the \$3.50 wage in 1900 is just equal to the purchasing power of a \$6.00 wage in 1917.

It may be argued that a periodic adjustment every six months would interfere with contracts in course of execution. Let us admit this objection and at the same time analyze it. If no allowance were made in estimating future work for the contingency of an unknown advance in the rate of wages, due to the change in the index number, then under the conditions specified above, the advance of 60 cents would cost the contractor 3.9 per cent., assuming the labor to be 35 per cent. of any given contract: or 2.78 per cent., assuming the labor to be 25 per cent. of any given contract.

An advance in the rate of wages, which apparently increases the cost to the employer 3.9 per cent., in my judgment, would be more than offset by an increased labor efficiency; because the employee would be appreciative of the spirit of coöperation reflected by the adoption and practice of a plan of wage adjustment calculated to protect him against advances in the cost of living; and he would consciously or unconsciously respond to such an effort at practical coöperation on the part of his employer.

It should be stated, however, that in the example cited above the index number used might not be quite accurate in this particular application, because it is composed to some extent of factors which perhaps affect the cost of living only vaguely and indirectly. This number, for instance, gives the aggregate prices per pound of 96 different articles, including not only all kinds of food products, but also 13 metals, 11 chemicals and drugs, 7 building materials and also raw and manufactured textiles, coal and coke, mineral and vegetable oils, naval stores, and 7 miscellaneous articles; but nevertheless it gives a broad general indication of the changes in general price levels, and so perhaps would be as applicable as an index number derived from the price movements of only foods, clothing, rent and fuels.

It may also be argued that this plan of wage readjustment would tend continually to raise wages even beyond the critical point at which the tendency would begin to slow down the industry. This objection leads to a consideration of the most fundamental theory of wages.

Labor has a value because its services or products have a value. If the labor is misspent, the product is valueless, and in the long run the labor will be equally so. Labor secures a remuneration because it produces something for which people are willing to pay. In other words, wages depend on productivity. The wages of the laborer depend upon the value of his labor and not upon his wants. But wages vary with the standard of life, and anything which lifts the standard will raise the rate of wages. The highest standard, though, will not prevent wages from falling in the face of a decrease in the demand for the product and a decline in industrial prosperity. However, anything which tends to increase the productivity of labor will raise the rate of wages. Raising the rate of wages in the long run will raise the standard of living and in general a higher standard of living reflexively raises the productivity.

This being so, we can safely leave this objection as being one which might as well apply to the present method or any other method of readjusting wages.

Now this application of an index number for wage readjustment is in reality a device for stabilizing wages. The prices of commodities are quoted in terms of money, but, what is less often realized, the price of money is quoted in terms of commodities. If a journeyman two years ago when wheat was quoted at $1.20

had been paid four bushels of wheat for a day's labor, he would have received the economic equivalent of $4.80 in money, the rate then prevailing in New York. If, however, he were paid four bushels of wheat to-day for a day's labor, he would get the economic equivalent of $8.80. The price of commodities has risen, the price of money has fallen.

It will be argued that union men will not be content with a relatively constant wage-position in the economic world—that they will demand also an absolute advance, an advance beyond the point indicated by an index number. As long as the national wealth tends to increase faster than the population, this demand on the part of union labor will be justified and will be justified in some more or less definite ratio to the increase of national wealth. This is the laboring man's only way of participating in an increased national wealth, national surplus, in the creation of which he has had so large a share. The demand for an absolute increase on the part of any particular trade, however, will be restrained by force of public opinion and by economic forces, if such a demand is out of step with the demands of other trades requiring equal or similar skill.

Some may say that the advance in wages in the various trades has been absolute instead of relative, and they may point to the wages of the Chicago Electrical Union as an example.

Let us analyze the case from the index number point of view. In 1907 the wages in Chicago in the electrical trade stood at $4.00 a day. The Bradstreet index number for 1907 averaged 8.90. On September 1, 1917, the index was 16.6441, and the average index number for twelve months of 1917 was 15.655.

Applying as before the average index number for 1917 to this case, we find that a $4.00 wage in 1907 would be equivalent to $6.28 in 1917. If, however, we compare the average index number for 1907 with the index number for September 1, 1917, when the $6.25 wage took effect in Chicago, we get a wage of $6.61, which shows how conclusively the $6.25 wage is justified, and also that there has been no absolute advance whatever.

By the intelligent application of some such plan as the one outlined, there will result as a matter of fact an absolute advance in wages to the union man, due to the fact that he will work more days in the year when and because wage disputes are eliminated. This absolute advance is not one in the economic sense, but purely in the personal sense.

After all, any discussion of the wage question, if confined to the rate of wages per diem, is inadequate and superficial. The yearly income is the only important desideratum for a wage earner, and it is also for any person whose income takes any other form.

There remains the more difficult problem of scientifically fixing the base rate for wages. This is a much more complex problem than applying an index number to raise or lower the base. The *Times Annalist* has produced an index number based on the wholesale price of food "selected and arranged to represent a typical family's food budget," an item which is 40 per cent. of the workingman's whole cost of living. His rent may be placed at 20 per cent. and his clothing (including, of course, his family's) at 15 per cent. If we were fixing a base rate, say, for the present month, it would probably be fair to calculate it on the basis of 45 per cent. for food, 15 per cent. for rent, 15 per cent. for clothing and 25 per cent. for surplus, from which he must take the money he spends on contingencies, non-essentials and pleasure. It would probably be sufficiently correct to assume any present wage as a base rate—it would certainly avoid endless discussions and fruitless speculations on the cost of keeping an average family.

Probably all parties concerned would rather avoid the question by arbitrarily accepting the existing rate than to create a new rate, however scientifically devised.

The bureau of labor statistics gives us an idea of the distribution of expenditures for families typical of the mass of skilled workmen. Based on 2,561 families located in various cities in the country, the bureau has derived the following results:

| GROUP | Per cent. expenditures for each purpose | Proportions of 10,000 |
|---|---|---|
| Rent | 15.06 | 1506 |
| Food | 41.03 | 4103 |
| Fuel | 5.00 | 500 |

| GROUP | Per cent. expenditures for each purpose | Proportions of 10,000 |
|---|---|---|
| Clothing | 15.31 | 1531 |
| Lighting | .90 | 90 |
| All other purposes | 22.70 | 2270 |
| | 100.00 | 10000 |

It would probably suit all practical requirements to regard the wages now prevailing in different localities as the base rate. At least this plan would be workable until a better had been devised.

The United States bureau of labor statistics has selected the years 1900-1909 for striking an average to serve as a base, or par, for developing its index number. Commodity prices for this period are averaged for the ten years and the result is called 100. If the weighted average of basic commodity prices is 3 per cent. higher for 1913, the index number for 1913 is + 3 or 103. A base or par rate of wages could similarly be established from the prevailing wages during the same ten years' period and in as many localities as might be found desirable.

Wages could then be adjusted from this par periodically by comparing the index number corresponding to par with the index of the period next preceding the time selected for adjustment.

This plan has the merit of immediate practicability. The means are at hand, and the machinery already in motion for giving it a trial; whereas the alternatives which have at various times been suggested for regulation of prices by government, for preventing commodity price increases by the "compensated dollar" having a multiple standard of value, etc., are not easy to try because they require legislative action following a vast amount of national education. Government regulation of prices is fundamentally wrong and therefore impractical except in occasional emergencies. The "compensated dollar" plan practically proposes that the United States and probably other gold standard countries should cease to have a primary money whose bullion value is its monetary value, although the scheme is very ingenious and persuasive.

Considering what a vital function an index number may be made to perform for fixing wages equitably, the number should be developed and promulgated by the United States government, as, for instance, are the crop reports by the department of agriculture and the currency circulation reports by the comptroller of the currency. The department of labor has for some years developed and published an index number which might serve every purpose required by the plan here outlined.

While I believe this application of an index number to wages is a novel idea, yet something akin to it was described by Sir Stephenson Kent, head of the special mission of the British munitions ministry, at a recent dinner in New York where he was a principal speaker. He said that a government committee on production was set up, whose function it was to ascertain what, if any, the increased cost of living amounted to and to issue a national award in regard to that labor whose wage had been fixed, so as to meet the increase in the necessities of life that that labor might find. That committee meets three times in a year and has the necessary statistics laid before it, receives representations from trade unions and from any one else who has a voice or should have a voice in the matter, investigates the case very carefully, and then gives instructions that this labor should receive so much extra per week to meet that increased cost. That is paid by the employer and is recoverable by the employer from the state. It is the state's charge.

This is admittedly a war measure, inexact, dependent on a board's arbitrary administration, and, as Sir Stephenson said, the bonus was determined by the advancing cost of provisions alone, no account being taken of the many other commodities entering into the cost of living, or the general depreciation of the pound sterling. This plan, of course, would not work on a declining market or with the pound increasing in purchasing power.

In closing I beg leave to quote the words of Seligman as follows:

> Economic, political and ethical forces are conspiring to bring about progress by raising the social level. In ordinary business life this means the gradual but clearly discernible elevation of the standard of commercial morality. So far as poverty is concerned, it means the lifting of the standard of life of the laborer and the setting of an irreducible minimum, below which national production is not worth having. Practically this

process assumes the various forms of trade union activity, of education of the unskilled, of factory legislation, of social insurance, of workmen's compensation, of improved housing, of trade agreements, of control of monopoly, and above all, of the curtailment of special privileges. The process is a slow one, because it is an arduous task to make the successful and self-satisfied business man realize that the true ultimate interests of his class are associated with the increased consumption that can come only from the higher standard of life of the mass of producers. It is in the last instance public opinion alone which in a democracy can protect the well-intentioned and long-sighted employer from the unfair competition of his unscrupulous and selfish rivals.