According to the Lewis Institute tests the strength of concrete is a function of the ratio of the volumes of water to that of the cement used in the production of the concrete, and is $14,000 \div 7^{\text{R}}$ lbs. per sq. in. for cement 28 days old, R being the ratio referred to, and the weight of one cubic foot of cement being assumed as 94 lbs. The curved line shows the strength of the twelve groups of specimens as calculated by this formula.

An inspection of Fig. 1 shows:-

(1)—That the effect of rodding concrete is more beneficial with lean than with rich mixes, and that it is more beneficial with wet than with dry mixes.

(2)—That the average strength of 8-sack concrete can be increased about 45% by rodding; that of 6-sack, about 60%; and that of 4-sack, about 220%.

To appreciate how well the values shown in Fig. 2 (determined by test July 11th, 1919) check with those shown by the broken line in Fig. 1 (determined by test March 19th, 1919) and with those shown by the curved line in Fig. 1 (calculated from the Lewis Institute formula), notice that the average strength of the unrodded specimens shown in Fig. 2 is about 1,800 lbs., and that this is almost exactly the same as that shown by the curved line in Fig. 1 for the 6-sack concrete with 10% of water; also that the strength shown by Fig. 2 increases gradually with the roddings to about 4,250 lbs., which is a triffe less than that shown by the broken line in Fig. 1 for the 6-sack concrete with 10%of water.

WORLD IS ON HIGHER PRICE LEVEL*

BY T. S. HOLDEN

Investigator Economics Section, Division of Public Works and Constructive Developments, U.S. Department of Labor

I N our capacity as buyers of commodities we have proceeded on the assumption that it was desirable for prices to fall. Falling prices rarely stimulate business. They usually stimulate waiting for further declines. A period of falling prices is usually a period of business depression. The past six months has been remarkable for the small number of business failures. It is entirely possible that a sharp decline in prices might have been accompanied by a greater number of business failures than there has been, attended with a much greater menace of unemployment. A financial panic might have been within the bounds of possibility.

Many of those who have been deferring building projects and the resumption of production of commodities have stated that they were waiting until prices and wages should have returned to "normal." The word "normal" has been used extensively in this connection and most of those who have used it have not appreciated the true meaning of the word. Not only in connection with prices and wages has this term been used incorrectly, but courts and public utility commissions have used the term loosely when speaking of valuations of properties. It is worth while to determine just what this word means in connection with prices, wages and property values, not in the interest of academic precision but simply to aid clear thinking on this subject.

A paper entitled "Appraisals and Rate Making" was read March 20th at the annual meeting of the Illinois Gas Association by Cecil F. Elmes, an eminent engineer. In this paper Mr. Elmes presented with the utmost clarity and force, certain aspects of the price situation as affecting valuations of public utility properties and the principles of rate making. In the course of his discussion Mr. Elmes dwelt at some length on the misconception of the term "normal." He presented curves showing the fluctuations of prices in England on five basic articles, wheat, iron, lead, cattle and sheep, covering a period of six centuries. He also presented curves showing fluctuations of artisans' wages, both in terms of money and in terms of the quantity of wheat the wages would buy, covering the same extended period. He pointed out that in the case of each one of these curves the fluctua-

*Abstract of prepared testimony submitted to the Public Utilities Committee of the Chamber of Commerce of the United States. tions are so erratic that it is impossible to draw a horizontal straight line, an oblique straight line, or a mathematical curve which could in any sense serve as a median about which the prices or wages fluctuate. Consequently, it is not possible to define mathematically in terms of past experience the "normal" price of a given commodity, or "normal" wages. Neither is it possible to thus define a "normal" rate of increase in prices or wages.

Not everyone has the opportunity to consult the records of the British museum, as Mr. Elmes has had, for the purpose of studying this subject. There is, however, another authority which is readily accessible to all, Webster's Dictionary. Webster defines the term in connection with economics as follows:—

"Pertaining or conforming to a more or less permanent standard, from which, if the individual phenomena deviate on either side, such deviations are to be regarded as selfcorrective. Thus, in economics, the normal price is a price which corresponds to the cost of production."

Relation of Price and Cost

The standard to which a price must conform is, therefore, not necessarily a price that we are accustomed to, or that we were accustomed to five years ago. Mr. Elmes has shown that past experience has established no mathematical standard to which a price may be expected to conform. Webster says that the standard is the cost of production. In 1919 the standard is the cost of production in 1919, and not the 1914 cost of production. There is no justification for assuming that \$12 is an unfair price for a pair of shoes to-day, simply because the same pair of shoes might have been bought in 1914 for \$6. The only criterion for the present price of shoes is the present cost of production of the shoes plus a reasonable margin of profit to those concerned in the making and the selling of the shoes.

Similarly "normal" wages in 1919 must not necessarily conform to the wage scale of 1914. "Normal" wages in 1919 must cover the cost of living in 1919 with a reasonable margin.

Similarly, the fact that the customary street car fare in the past has been 5 cents is not necessarily an indication that a 5-cent fare is the "normal" fare in 1919. As in the case of prices and wages, the standard of the rate to be paid for the services rendered by any public utility corporation is not fundamentally the rate the public has been accustomed to pay, but the cost of production of the commodity that is being sold, whether it be gas, electric power or transportation.

It is also true that the normal valuation in 1919 of any piece of property, whether it be improved real estate or a public utility is, fundamentally, the total cost of production of that property under the conditions of material prices and wages in 1919.

Purchasing Power of the Dollar

Another element of confusion has arisen in the minds of some in the attempt to draw a distinction between the purchasing power of the dollar and the value of the dollar. It has been stated that the purchasing power of the dollar measured in commodity prices has been cut in half, but the value of the dollar, which should be measured in terms of the wealth of the country, consisting of real and personal property, has not risen. On the basis of this distinction it was argued that prices must fall in order that the purchasing power of the dollar. It appears to be an economic fallacy to draw such a distinction. John Stuart Mill defines values as follows:—

"The value of a thing is its general power of purchase, the command which its possession gives over purchasable commodities in general."

In other words, the value of the dollar is the purchasing power of the dollar. Furthermore, contrary to the argument outlined above, prices have remained high and rents and property valuations have been increasing since the time the statement referred to above was made.

The owner of a house and lot may state to the tax assessor that the value of his property is \$10,000. In making a