THE INTEREST OF THE ACTUARY IN STABLE MONEY

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Possibly there is no group of people who should have a larger scientific interest in the subject of stable money than the actuaries. Large interests depend upon the accuracy and thoroughness with which they do their work, and it should be of the utmost importance to them that the tools with which they work, and the measures with which they mete, be stable and reliable. Let us, therefore, first examine our yard-stick of value—the dollar—to ascertain whether or not it is really stable or unstable.

Many people feel that because the dollar is by law equivalent to a certain weight of a certain precious metal of a certain degree of fineness that, therefore, it is stable in value. Many people suppose that because America is, and for many years has been, on a gold standard, that our dollar is a reliable measure of value. Of course, compared with the fluctuations which have taken place in the purchasing power of foreign monies, due to the inflation and re-adjustments which occurred during and after the World War, the dollar has been relatively stable in its purchasing power. Yet it has fluctuated over very wide percentages.

For example, between 1860 and 1865, the American dollar shrank in its purchasing power by 54%. Between 1865 and 1896, it increased in purchasing power by 190%. Between 1896 and May 1920 it shrank in value 74%. Between May 1920 and February 1921 it increased in value by 70%. During the first seven months of this year the increase in the purchasing power of our dollar was 6.2%.

What would we say of our yard-stick, of our pound, of our gallon, of our watt, of our degree of temperature, if they fluctuated through such large ranges? Where would there be any science in the dry-goods business, or any possibility of entering into long-time contracts for the purchase or sale of any commodity measured in yards, if the yard-stick fluctuated as our

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dollar fluctuates? No one would then dare to buy or sell commodities by the yard, unless delivery was to be made immediately and before the yard-stick changed in length. And yet we quite calmly, and without thought of the risks which are being run, enter into contracts payable in terms of dollars, which run not over months, but over years and sometimes over centuries. Every lease, every issue of bonds, every savings bank account, every insurance contract, every pension arrangement is, in fact, a contract payable in terms of dollars, and into each one of these contracts enters all of the uncertainty which is attached to the instability of our unit of measurement of value, the dollar.

It is not so very long since the yard was just as unstable as our dollar is today. Originally the yard was the girth (geard) of the chieftain's waist. Later it was established as the length of the arm of Henry the Fourth, and now it has been officially fixed as the length between two fine lines drawn upon a bar of metal alloy, kept in a glass case in a specially constructed brick room, which is maintained at a constant temperature, in the Bureau of Standards at Washington, and which one can view only through telescopes from across the room, in order that the heat of one's body may not affect the length. To such a degree have we stabilized the yard, to such exactitude have we reduced it, that one can now safely contract for goods, measured in terms of yards, with the contract running over an indefinite period, with certainty so far as the measure is concerned that one will receive just what one has contracted for.

But not so our dollar. Our dollar which enters into nearly every contract into which enters the yard, the bushel, the watt, or any other unit of commercial measurement, is still allowed to masquerade as a unit of value when really being a unit of weight of one specific commodity. I could outline to you in a way which would appeal most compellingly to your sense of outraged justice, what are the economic and social consequences of the fluctuations in the unit of measurement of value. I could point out how, in a period when the dollar is decreasing in purchasing power or, in other words, when prices are rising, extravagance is encouraged, unearned profits are realized by the owners of real goods and equities, people with fixed incomes, such as bondholders, owners of savings accounts, lessors, judges, school teachers, etc., are reduced in circumstances and frequently subjected to want. I could show how this is invariably a time of strikes for increased wages and a time of decreased efficiency and economic waste.

On the other hand when prices are falling or when the dollar is rising in its purchasing power, business depression, unemployment, bank and commercial failures, soup-kitchens and "Homestead" strikes are the order of the day. It is usually after a long period of declining prices that great political and social upheavals occur, when "Free Silver" campaigns and "Greenback" movements develop. But with these, perhaps after all the larger aspects of the subject, we are not today so much concerned as we are with the technical difficulties created.

The object of a pension fund, the calculation of which is a part of the task of the actuary, is to provide for the pensioner the means whereby he may be able to support life with some degree of comfort after his earning years are over. Let us suppose that the pension fund is calculated in 1896 and that the pensioner comes into the enjoyment of the fund in May, 1920. We find that the dollar has shrunk in that period from a level of 100 to a level of 26, that is to say, every dollar of that pension fund as originally calculated, has shrunk to a purchasing power of 26 cents. What becomes of all of the fine precision and the mathematical accuracy of the actuary under such conditions?

It is a part of the task of the actuary to safe-guard, by his calculations, the safety of the investment of the institution with which he is connected. It is for him to know something as to the relative proportions existing between the outstanding obligations of a corporation and the value of the property pledged as security for its bonds. Supposing these bonds were issued in 1865 and matured in 1896. During that short time we find that the dollar has increased in purchasing power by 190%, that is to say, a dollar in 1865 would have a purchasing power in 1896 of $2.90. Every $1000 bond, therefore, would be equivalent in 1896 to 2,900 (1865) dollars. If the equity in 1865 was 50% it would be totally obliterated and absorbed by the increased value of the outstanding bonds, and the bondholders would be obliged to take over the property.

And what of the owners of life insurance policies? Is there not a tremendous injustice in taking dollars from people, in purchase of future benefits, when the value of those benefits will have shrunk before they are realized, as would have been the case if a policy had been taken out in 1896, and the benefits realized in 1920? There would have been in that period a shrinkage in the purchasing power of the dollars represented, of 74%, that is to say, that the dollar in the contract would have had a purchasing power of only 26 cents.

What is the reason for these fluctuations in the purchasing power of the dollar? We are sometimes inclined to look upon money as being something mysterious, as beyond the possibility of understanding. This is a mistake. There is nothing more mysterious about the purchasing power of money than there is about the purchasing power of cotton or wheat. We know that the value of cotton depends upon the relationship between the demand for, and the supply of the article. It is exactly the same with money. If too much money is put into circulation, in proportion to the volume of business being done, money becomes less valuable, and prices, in terms of money, tend to rise. On the other hand, if there is too little money in circulation, in proportion to the volume of business being done, then money becomes more valuable and prices, in terms of money, tend to fall. Now fluctuations in the relationship between the supply of money and the demand therefor, may occur either by an increase in the volume of money or of its efficiency, or by a decrease in the relative volume of business being done; and increases in the volume or efficiency of money may occur through an increase in the volume of gold, or the effectiveness of the volume of gold already in existence, or through the introduction of substitutes for gold, such as the use of bank checks and bank credits. And the same condition may be brought about by keeping the volume of money constant, by decreasing the demand therefor, or the volume of business being done.

Let us put aside all discussion of the so-called quantity theory of money, mostly quibbling over terms, and let us admit that money fluctuates in its value or its purchasing power according to the law of demand and supply. Let us admit, also, that we cannot influence the demand for money because to do so means that we would have to influence all of those who are engaged in commercial pursuits, and this is obviously impossible. But the supply of money is capable of regulation in various ways and by various means, and this is sufficient to enable us to gain our ends.

One ingenious scheme, proposed by Professor Lehfeldt of South Africa, is that the gold mines of the world should be purchased by an international commission and operated in the common good. When gold becomes scarce these mines would be worked until such time as the supply of gold was adequate to the demands therefor. On the other hand when gold became too abundant, certain mines would be shut down, so that the volume of gold in circulation would again become commensurate with the demand therefor. Another scheme proposed many years ago is known as the "Compensated Dollar Plan" and comprehends changing the weight of gold in the dollar, as the value of that gold varies, so that the purchasing power of the dollar would remain constant.

John Maynard Keynes, the distinguished author of "The Economic Consequences of the Peace," and now Editor of the *London Economist*, has proposed in a book called "Monetary Reform," that gold be done away with entirely as the basis of all money; that the money be issued by the government or by a designated agent of the government; and that its purchasing power be controlled by limiting its volume. Keynes was anticipated in this proposal, by a lawyer of Chicago, Mr. Carl Stroner, whose book, "Monetary Reconstruction," goes into details. But as usually is the case, while the theorists are talking about what should be done, the practical men of business come along and do it. So we are now coming to realize that conscious stabilization of the purchasing power of the dollar, through the scientific management of the volume of money in circulation, has been an actual fact in this country for a period of some four years. The stabilization to which I refer is that which is being practised by the Federal Reserve System.

Let me say at the outset in discussing this matter, that this stabilization has not been wholly conscious. It has not been wholly scientific or perfect. It has been more or less fortuitous; and that it has been surreptitious is attested by the fact that some of the high officials of the Federal Reserve System even deny that there is any power in the Federal Reserve System to influence the general level of prices or that there has ever been any attempt to do so. However, it is an incontestable fact that the rediscount rates of the Federal Reserve banks have to a greater or less extent been dictated by the feeling that the stabilization of business conditions required that it should be raised or lowered, as the case may be.

It is obvious that, if the rediscount rate is raised, borrowing will to that extent be discouraged. Not only will the actual price of the credit be increased and discouragement be placed upon borrowing thereby, but raising of the rediscount rate is taken as a danger signal by the business world. It is regarded as a hint that borrowing should be curtailed. Business men, therefore, adopt policies of retrenchment with the result that the actual volume of bank credit in circulation is decreased. Similarly, when the rate of rediscount is lowered, not only is borrowing encouraged by the greater profit to be derived from such procedure, but this also is taken as a sign by the business world that business is expected to speed up, and many business men rush to profit by the improvement which this prophecy indicates by extending their borrowing operations.

But perhaps, aside from its moral influence, the most effective means possessed by the Federal Reserve System for controlling the volume of bank credit in use and, thereby, the general level of commodity prices, is the power given in the Federal Reserve Act to the Federal Reserve banks to buy and sell securities in the open market. The securities dealt in are short term United States securities and commercial acceptances and the method of operation is as follows: If it is determined that the business world needs a little stimulating, if price levels are decreasing and business is becoming slack in certain directions, as indicated by the statistical studies made on behalf of the Federal Reserve System, and it is determined that an increase in the volume of the credit in use would be desirable; then the committee having charge of this matter, which committee consists of the Governors of the five principal Federal Reserve banks, determines that the banks, acting jointly, shall purchase a certain quantity, say $25,000,000 or $50,000,000 worth of government securities. The amount thus to be taken is allocated among the banks of the Federal Reserve System, and the Federal Reserve Bank of New York acts as the agent for all of the banks in the system in effecting these purchases.

As offers of securities are constantly being made to the Federal Reserve Bank of New York, it is easy for it to say to some of these would-be sellers of securities, "We will take so much of such and such a security, which you offer us to-day"; and the result is that in a very short time, the increase in the volume of security holdings of the Federal Reserve Bank becomes apparent, and a corresponding amount of bank credit has been forced into the market, and business has been stimulated accordingly, with a resulting increase in the general price level, and a decrease in the purchasing power of the dollar.

These operations, on behalf of the Federal Reserve System, are facilitated today because of the super-abundance of gold lying in the vaults of the Federal Reserve banks. Ordinary banking procedure and sound banking practice dictates that the gold reserve ratio shall be about 40%, that is to say, that there shall be about 40% of the outstanding obligations in a gold reserve owned by the bank. As it happens, the gold reserve in the United States today, including that actually held by the Federal Reserve banks and that artificially circulated in the form of gold certificates, is around 80%. Therefore, there is a leeway of 40% in the gold reserve ratio, it is twice as large as need be and there is no fear that any procedure which might be adopted by the Federal Reserve Bank would be likely to bring the gold reserve ratio to the traditional danger point. Therefore, a new policy of central bank operation has been inaugurated in the United States. Heretofore, the practice has always been so to govern the outstanding loans that the minimum gold reserve ratio would not be in danger of violation. Now the policy is so to govern the volume of bank credit that the purchasing power of the dollar shall be fairly stable and business shall be kept on a fairly constant level.

It is admitted that the technique used in connection with this new policy has not been perfect and that there is not complete unanimity even among the authorities of the Federal Reserve System, as to what steps should be taken under given conditions to accomplish the desired results; witness the drop of prices during the current year. If a true stabilization policy were in effect, securities would long since have been purchased and credit volume stimulated thereby, so that the drop would not have continued so long nor gone so far. Business cannot stand a long continued drop in the value of inventories equal to ¾ of 1% a month. There is considerable doubt on the part of the responsible Federal Reserve authorities as to whether or not their procedure, in thus stabilizing business and stabilizing prices, would meet with general approval on the part of the people, if it were commonly known; but with all of this it is fair to say that a new policy has been adopted, that conscious management of the currency and credit volume for the purpose of accomplishing stabilization, is now being practised.

Every encouragement should be given to the Federal Reserve System in this connection. It is true that in times past great mistakes have been made. Thus, when prices were rising and a boom was rampant in this country, the powers of the Federal Reserve System were not used to stifle that boom in time. The boom was allowed to go to the point where the utmost delicacy of handling was required, and this was not forthcoming. The people at that time in the saddle, in the management of Federal Reserve affairs, were either indifferent or ignorant as to the results which would follow from drastic action. In May 1920, at a meeting of the Advisory Council of the Federal Reserve System, it was determined to raise the rate abruptly to 7%. The result was an immediate fear in the business world that the boom was going to be brought to an end. But instead of merely that happening, a tremendous crisis was precipitated, a decline in the price level followed which for severity and abruptness has not been equaled in the history of this country. Millions of men were thrown out of employment, over one million farmers lost their farms, owners of securities were subjected to tremendous losses, and general havoc was created.

Compare this condition with the period of stability which has followed the adoption of the new practice, and which has now continued for a period of some four years. We now find that business is on sound and steady foundations. Unemployment is negligible. Production has been kept up to a large volume, and has been met by steady consumption. We find that the American dollar has become the model for stability of all of the currencies of the world, and that New York has become, to all intents and purposes, the financial center of the world. We find on the whole a level of well being and a high standard of living such as has rarely been equaled in the history of this country.

It is not well perhaps to ascribe too much of this desirable state of affairs to the somewhat imperfect stabilization which has resulted from the acts of the Federal Reserve authorities; but it is not too much to say that the prosperity which has been vouchsafed to us through this measure of stabilization, should permit us to envisage the benefits that would result to society as a whole from the adoption, as part of our monetary philosophy, of the principle that the primary aim in connection with monetary practice should be to achieve stabilization in the purchasing power of the monetary unit. Let us adopt the slogan that no monetary system is sound which does not afford a stable general price level.

Not only is this of importance to actuaries but to every man, woman and child, to every owner of property of every description, to every investor, to every banker, to every borrower, to every producer, to every consumer. A stable dollar means justice and prosperity; an unstable dollar means injustice and adversity.

As indicating the interest, not only of actuaries, but of every American citizen in the problem of stabilization, I quote the words of Mr. Benjamin Strong, Governor of the Federal Reserve Bank of New York, from a letter written by him under date of March 3rd, 1923, and published in *Collier's Weekly*, in which he said, "Is not the fundamental condition of industrial and national tranquillity that of a reasonable stability of prices?"

More power to all the good right arms that are working toward this beneficent end!