

Professor Robert R. Blain, Ph.D. of Southern Illinois University, Dept of Sociology and Social Work, Edwardsville Illinois [62026] produced a small booklet of 22 pages 5.5 inch X 8 inch center folded and stapled.

The original title "Making Money a More Accurate Measure of Value" had the word **value** crossed out and replaced with the word **price** on the copy he sent to me. He has a small website setting out some of his philosophy at:

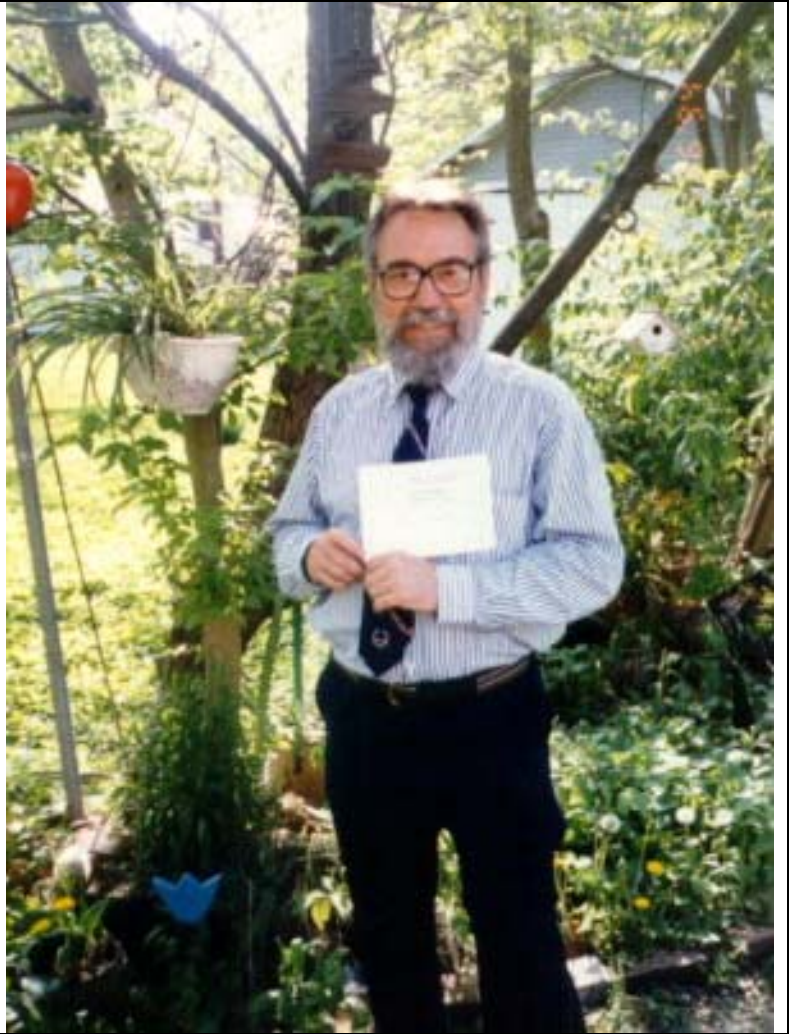
<http://www.siu.edu/~rblain/index.htm>

I have made some very small changes to his writing.

If I were to title it, I might call it "Using Hours as a Value to Make Money a More Accurate Measure of Price."

Read the Document, and send me your feedback; thank you.

<mailto:jcarvingblock@yahoo.com>



Making Money a More Accurate Measure of Price [Value?]

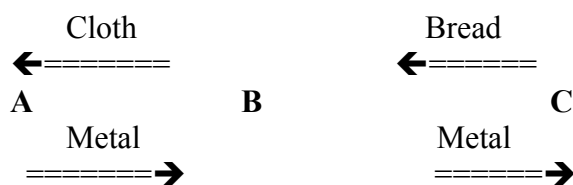
Money is a human invention that has gradually evolved to overcome the serious limitations of barter exchange. Barter, the direct exchange of one commodity for another commodity, is subject to four limitations.

- 1) There must be a **coincidence of surpluses and wants** for the two would be exchange partners. Each must have a surplus of what the other wants, and each must want the surplus that the other has.
- 2) Both commodities must be ready **at the same time**. Wheat that is not yet ready for harvest cannot be exchanged for a coat that is ready now.
- 3) Both commodities must be present **in the same place**. Two articles ready at the same time but separated by miles of distance cannot be exchanged by barter.
- 4) Both commodities must be **of equivalent value**. Exchange is unlikely where one article costs a great deal to produce and the other costs little or nothing.

Some people today, sensing that there is something seriously wrong with the kind of money we use, advocate returning to a barter system. Understanding the severe limitations of barter would lead them quickly to recognize that barter is not the answer. Finding out what is defective about money leads to the answer. Very few commodities can be exchanged by means of barter. Any inventory of the variety of goods and services that we exchange in a typical day will clearly show that most goods and services would be impossible to exchange if barter were the only available method.

The evolution of money consisted of a series of steps that overcame to some degree the limitations of barter. Perhaps the earliest invention was the use of a **third commodity** to mediate the exchange of two other commodities. This gave rise to what Rupert Ederer (1964) calls favorite commodity systems. In a favorite commodity system some commodity that is in wide demand because it is of general usefulness is used as a medium of exchange. Metal was often such a commodity. Metal, particularly to people with only stone or wooden implements, was highly valued. Metal made superior tools. Almost everyone would be willing to accept metal in an exchange, even when they themselves might not have a use for it, because they were confident that they could find someone else who would be will to accept it.

Thus, it happened that two people with commodities to exchange could use a third commodity to make what would otherwise have been an impossible exchange. Person A has metal, and person B has cloth. Person A wants cloth, but person B does not want metal. They cannot barter. But, as a resource that is widely desired, metal can serve as a medium of exchange. Person A can offer metal to B for the cloth, and B can take the metal to use as a medium of exchange with a third party who has the bread that B wants.



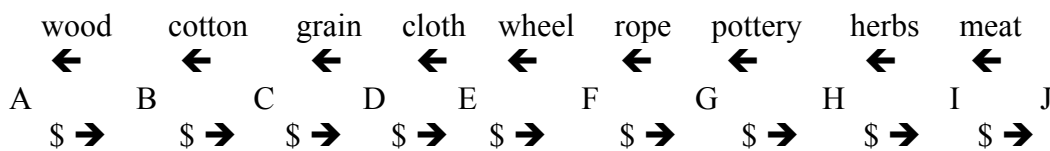
Many resources have been used as commodity media of exchange: cattle, blankets, shells, dogs’ teeth, gold, silver, copper, and many others. Eventually, certain commodities came to be preferred over others. These preferences related to other conditions that limited barter. Commodities that were nonperishable were preferred to perishable ones. Durable commodities could serve as “stores of value” and as such could be used to overcome the time limitation of barter. If person B accepted a metal that did not rust, B could hold on to the metal until B found someone at a later time with whom to hake an exchange. Iron, although a metal, was not a popular favorite commodity because it rusted. Iron was not a good “store of value”; it was subject to value loss due to rusting. A good medium must hold its value over time.

Commodities that were easy to transport also tended to be preferred over commodities that were difficult to transport. Cattle, for example, are relatively durable, but they are difficult to move from place to place. Metals like copper, gold, and silver are easier to transport than cattle. It was the greater durability and portability, as well as the great usefulness, of metals like gold, silver, and copper that accounts for their emergence as popular favorite commodity media of exchange.

In favorite commodity systems, the objects that served as media of exchange worked effectively because they were **useful** in themselves. People wanted gold, silver, or copper because they could make useful things with them. When one person gave up, say, a loaf of bread for gold, he or she obtained a real, actual, and useful something in return. There was never a period during which a person gave up a useful object and received nothing useful in return.

Metals like gold, silver, and copper were also preferred because of the ability to “make change” with these metals. The fourth limitation of barter was establishing equivalence of value for the articles being exchanged. Two persons were unlikely to exchange articles that were widely different in value. In such cases, gold, silver, or copper could be cut into smaller pieces or collected into larger amounts, thus making it possible to adjust the terms of an exchange so that objects of differing value could be exchanged.

Coinage was the next step in the evolution of money. Initially, metals were handled in raw form. This required that metals be weighed as part of each transaction. The careful trader would also require that the metal be tested for purity. Such weighing and assaying made exchange slow and risky. Coinage was the practice of shaping metal into standard forms and weights and stamping the coins with markings identifying their source. Once metal was coined, exchange could be done by simply adding or subtracting coins to adjust for value differences.



Thus, exchange came to consist of goods and services moving in one direction while coins, facilitating exchange at each step, moved in the opposite direction. Coins had become “currency,” passing throughout the system as on a large circuit, a circuit as large as the society within which the coins were accepted as media of exchange. The range of acceptability depended primarily upon the authority, reputation, and power of the issuing or minting agency. The Greek city-state of Lydia is believed to have been the first government to assume an exclusive monopoly on the minting of coins. Until quite recently, minting raw metals into coins tended to be the major monetary role to which governments limited themselves.

Gold, silver, and copper had their own limitations. For one, they were limited in supply. The amount of currency that could be produced was always limited to the supply of the precious metals. However, the need for currency depended upon the volume of goods and services that people wanted to exchange. The supply of gold or silver was often quite different from that need. Hence, as long as coins were the medium of exchange, monetary confusion in the forms of coin shortages and coin surpluses was always likely.

Another problem with metal as a medium of exchange was determining the metal’s **value**. While metal was useful, it was impossible to establish with any precision what it was worth. Only the persons directly involved in obtaining a particular ounce of gold, for example, actually knew how much work was necessary to obtain that ounce. Once put into circulation as a coin, since handlers of the coin knew nothing of mining gold, such an ounce of gold could only excite subjective ideas of value in the minds of exchange partners. Gold, in other words, was imprecise or inaccurate as a measure of value. It was of undeterminable value to exchange partners, and it could not serve as an accurate monetary unit.

Another problem with the metal media of exchange was security. There were great risks in transporting gold, silver, or copper from place to place. These dangers increased as trade was conducted over greater and greater distances and as transactions became larger and larger. Again, human inventiveness intervened, and paper receipts came into use.

Paper receipts were used in one form by goldsmiths. Goldsmiths usually had facilities for storing gold securely. Merchants could protect gold coin from theft by placing it under the safekeeping of a goldsmith.

The goldsmith gave the depositor a paper receipt for the gold, stating the promise that the bearer of the note could claim the gold on demand. In this way, and others, paper money came into use. The paper receipts were understood as standing for or representing the gold held on deposit.

Money began the latest step in its evolution when paper money was put into circulation for which there was no gold on deposit. This step developed because of the convenience of paper receipts. Because merchants found handling such receipts much more convenient than handling the gold itself, merchants tended to trade receipts, the gold remaining unclaimed in goldsmiths' safes for long periods of time. Enterprising goldsmiths then decided to make loans of some of the gold. The loans were also often made in the form of paper receipts instead of in actual gold metal. When such loans were made, it meant that the total amount of gold represented by the face value of all receipts in circulation was more than the total amount of gold on deposit. This excess of the total amount of gold stated on receipts over the total amount of gold on deposit created the potential for monetary collapse. If all holders of paper receipts attempted to withdraw their gold on the same day, they would discover a shortage of gold. This would lead them to conclude that their receipts were "worthless," having no gold to back them up.

The most recent step in the evolution of money has been to paper money with no gold backing whatsoever. Today we have purely paper money. We no longer use commodities as media of exchange, and we no longer back our currency with precious metals. We are on a money system that is purely paper, purely a writing system. This paper money system is currently working poorly. Paper money is chronically subject to inflation, a problem that is worldwide and persistent. It is, therefore, the task of modern people to take money the next step in its evolution to paper money that is non inflationary, to money that holds its value over long periods of time and that accurately represents economic value.

The evolution of money thus far has overcome the limitations of barter to some degree. There need no longer be a coincidence of surpluses and wants between potential exchange partners. If person A has money, A need only find person B who has what A wants. Person B can then take the money to another person C to buy what B wants.

The space limitation of barter has been overcome completely. Money in paper form can be transported with relative ease. Computers and telegraphs make it possible to handle money transactions electronically, further overcoming space limitations.

The time limitation has been overcome only to the degree that money maintains a stable value. Inflation is a measure of the degree to which this limitation of barter has not been overcome. The severity of this problem is demonstrated by the fact that a dollar deposited in a U.S. bank in 1940 would have had only 23 cents purchasing power by 1977. Inflation makes money a poor store of value. The evolution of money has not yet progressed to the stage where money is a secure store of value.

Economists maintain that a central function of money in any economic system is to serve as a measure of value. Measuring value is central to overcoming the fourth limitation of barter, namely, establishing the equivalence of value between the articles being exchanged. This problem is the most serious remaining problem with money in its modern form. Persistent inflation is the inevitable result. Until money is made an **accurate** measure of value, money will never serve as a secure store of value from year to year, and certainly not from decade to decade. Nor will money serve well as a unit in terms of which to make family, corporate, or national budgetary decisions. Under conditions of inflation, the price structure is too unstable to be the basis for making long term plans, whether the plans involve production decisions for corporations; national priority projects; or family plans for such major investments as home purchases, college for the children, or retirement.

Money is universally recognized to be the most important and inescapable allocative mechanism in any modern society. It is through money that economic resources are allocated among various uses. Whether or not one has money determines whether or not a person will live or die, whether or not that person will obtain medical care in times of need, whether or not he or she will have a decent place to live, and whether or not that individual will be educated. Money is the lifeline to each and every person in a modern money economy. If money works poorly, it threatens the well being and existence of the people in that society.

Measurement is a specific, precisely defined technical process well known to contemporary scientists and engineers. Most modern occupations, as well as most people in their everyday lives, use measurement as a matter of routine. All modern construction and manufacturing are done successfully because we have invented accurate measures of temperature, length, speed, volume, time, sound, and many other quantities. Our measuring instruments are exquisitely precise and accurate, including micrometers, speedometers, barometers, thermometers, and many others.

Money is the great exception in this otherwise magnificent array of accurate measurement instruments. The central mechanism through which money performs its function of measurement, according to economists, is the market mechanism of supply and demand, a mechanism characterized by Paul Samuelson as a vast system of “trail and error” (Samuelson, 1976:64).

A central criterion of a good measure in every context is **reliability**. A reliable measure is one that produces the same result whenever the measuring instrument is applied. If, for example, we use a common yardstick to measure the length of a box, the yardstick is reliable if we obtain the same result each time. If, however, the yardstick shows the box to measure 3 feet in length one time and 2 feet, 10 inches another time, we take the yardstick to be unreliable. If several people measure the same box with the same instrument and obtain the same result, then we take the measure to be reliable. If one person, using the reliable measure, obtains a different result, we then conclude that the person is unreliable. In either case, we judge reliability according to whether or not we obtain the same result upon repeated applications of the measuring instrument.

The accurate measurement of a box produces a single result. The accurate measurement of economic value should produce a single price. A single bushel of wheat is one and only one bushel. It is not one bushel one moment and three bushels another moment. Yet supply and demand pricing requires us to accept the ideas that the price of the same bushel of wheat varies from time to time.

Inflation is evidence of measurement errors associated with the kind of moneys presently in use. The word “inflation” is used to describe price increases that are greater than increases in real value. The word itself suggests balloons filled with air rather than substance. “Inflated” prices are prices that have become greater only through the introduction of more “air.” Economists then find it necessary to use various mathematical techniques to “correct” for inflation. These devices are intended to “deflate” prices down to where they might more accurately reflect changes in real factors in the economy. Inflation is often measured by adding together the prices of a given basket of market items for a given year and using this number as the base line. The same set of items is then used in another year, their prices that year added together and compared to the price total of the base year. Any increase in price is attributed to inflation - a rise in price without a corresponding increase in goods or services. Government statistics show that from 1940 to 1977 the purchasing power of \$1 dropped to about 23 cents (*The Statistical Abstract of the United States, 1977:470*). Therefore, we must conclude that inflation wiped out 77% of the value of the 1940 dollar by 1977 – an enormous amount of error that we try to correct for by applying consumer price index deflators. In an economy that used a money that was an accurate measure of value, such corrections would be unnecessary.

Other evidence of measurement error associated with the kind of money in use today is provided by Paul Samuelson. Anticipating criticisms of the market mechanism, Samuelson explains in his famous introductory textbook that “John D. Rockefeller’s dog may receive the milk that a child needs to avoid rickets” (Samuelson, 1976:46-47). He then cautions that, while this result may be bad “from ethical viewpoints,” it is not bad “from the standpoint of what the market mechanism is alone geared to accomplish. Functionally, auction markets are doing what they are designed to do - putting goods in the hands of those who can pay the most, who have the most money votes. Defenders and critics of the price mechanism should recognize this fact” (Samuelson, 1976:46-47).

The example of Rockefeller’s dog receiving the milk needed by a child was apparently not a frivolous example, for Samuelson has used it in several editions of his book. We may also assume that the child with rickets is but an example of what the market system sometimes does. Presumably, some unknown number of children are crippled by the market mechanism, and malnourished, and inadequately educated, and poorly housed, and poorly cared for in undetermined ways. The full implications of Samuelson’s example are shocking. And yet he offers it and disposes of it by assigning the entire matter to the domain of “ethical” judgments.

What is it then that we are expected to accept? Are we to believe that in a healthy and properly functioning economy children will be crippled for lack of milk, while dogs are indulged with it? Children are our most precious responsibility. They are the future of the human race. Should not the first standard of good economics be its impact upon them? Perhaps adults deserve to be starved and crippled by the market mechanism, but is the world of economics so perverse as to accept such consequences upon children without questioning the mechanism that allows them? If economics requires acceptance of such a mechanism, it deserves to be rejected without hesitation. No society can ever allow an economic idea to prevail that justifies the crippling of its children. Our children’s health and well being are not for auction.

The conditions identified thus far constitute symptoms of the underlying problem. The conception that prices are determined by supply and demand has been made necessary by another as yet unidentified cause. Inflation is symptomatic of the same problem. The example of the child with rickets is also symptomatic of the problem. Let us now address ourselves to the cause of the problem as opposed to its symptomatic effects.

THE PROBLEM

Any measurement device, in order to work accurately, which is the purpose of any measure, must meet three conditions.

- 1) It must use numbers.
- 2) It must use an appropriate **known quantity** or unit.
- 3) The known quantity must be standardized.

The root cause of the inaccuracy of money as a measure of value is that it fails to meet conditions 2 and 3. While money systems use numbers, the numbers are associated with no known quantity. In the absence of a known quantity, the money unit cannot be standardized.

Consider the case of measuring length with the common yardstick. First of all, the yardstick is marked off in numbers. The particular numbers used have a long and fascinating history, one that goes back hundreds of years to Hindu Arabic symbols and to yet earlier ones. Over the centuries these symbols were modified and improved until decimal systems emerged. Today, children in grade school count with ease because

they have a suitable number system. Any measurement system must have available a suitable number system. This condition is an obvious necessity.

All money systems in use in the world today use numbers. Whether we consider the American dollar, the Dutch guilder, the Italian lira, the Portuguese escudos, or the Spanish pesetas, the money system is numerical. Moneys in use today meet this first requirement of any measurement system. However, this is the only one of the three necessary conditions that they meet.

The second necessary condition of any measurement system is that it must use an appropriate known quantity or unit. Before we can measure in yards, we must specify a particular length as a “yard.” We must say that the distance from such and such a point to such and such another point is the measuring unit. The Romans used the **cubit** as a yard. A cubit was the distance from the tip of the nose to the tip of the middle finger with arm outstretched. The **uncia**, the equivalent of our inch, was the width of the thumb. Once identified, this distance becomes the known quantity. All subsequent measurement is then a matter of taking multiples or fractions of the known quantity. Measurement becomes a relatively easy operation once the known quantity is selected.

Measuring weight requires the same selection. An object with weight must be chosen as the known quantity or unit of measure. The particular weight of the object does not matter. The critical condition is that it be an actual weight. This weight can then be given a name, call it “pound.” Once chosen, the “pound” becomes the known quantity in terms of which the weight of other objects may be measured.

In the past, the numbers on some moneys have represented the weight of precious metals. In such cases, the numbers represented a known quantity. However, metal was an inappropriate or **invalid** known quantity. Its use was analogous to using a measure of weight to measure height. While at times the two may be correlated, at other times they are not correlated. The weight of gold is the weight of a metal. Why should we expect the weight of a metal to accurately correspond with economic value? At times the weight of gold may correlate with economic value, but at other times it may not. Such a coincidental relationship only confused the issue. The coincidental nature of the relation between the weight of gold and economic value helps to explain why the gold standard was surrounded with such controversy. When selecting a known quantity for use as a monetary unit, therefore, care must be taken to select a quantity that is economically relevant and valid throughout the economic system.

The third requirement that must be met if a measuring system is to be accurate is that the known quantity be standardized. Standardization is necessary in order that measurement in different parts of the system may yield compatible results. If components manufactured in one part of a society are to be assembled with components manufactured in another part, then everyone in that system must use the same measuring unit. We are told by Robert Heilbroner that in 1550 around Baden Germany there were 112 different measures of length, 92 different square measures, 65 dry measures, 163 different measures for cereals and 123 for liquids, 63 special measures for liquor, and 80 different pound weights (Heilbroner, 1953:10). Cooperation among people in this area must have been difficult indeed. The solution to the problem is to select **one** of the known quantities as the standard.

The need for standardization is recognized in every modern industrial society. Every such society has some agency to maintain standards of weights and measures. The physical standards for the U.S. yard, pound, and gallon are carefully preserved at the National Bureau of Standards in Washington DC

The precision of such standards is suggested by the standard for “yard.” The physical standard for “yard,” defined in 1854, is as follows: “the distance between two lines crossing two gold studs set in a certain bar of platinum kept in London, the measurement being made when the temperature is 62 degrees Fahrenheit and the barometric pressure is 30 inches” (Funk and Wagnalls, 1950:13,060).

Perhaps the closest we have come to a standard unit for money is the gold standard. As long as the United States guaranteed to buy gold at \$35 an ounce, money could have been said to have had a standard. As noted above, however, the weight of gold was not consistently related to economic values, and so the gold standard was doomed to failure from the very beginning. The gold standard confused the issue.

When people seek a solution for inflation, they sometimes suggest use of wage and price **controls**. From the present standpoint, they would be more correct to propose wage and price **standards**, and such is indeed sometimes done. However, what is understood by a **standard** is a stated rate of increase in wages, prices, or profits. Such a “standard” is clearly not the kind required by measurement. **What is needed, as a standard of measurement is a known quantity that is uniformly applicable throughout society.** Specifying that wages should increase by no more than 7% is to specify a known **number** - namely 7%. A known number is not a known quantity. A known quantity is some amount that has a physical existence that is independent of numbers; just as the weight of the object we call a “pound” is independent of the number “1.” By choosing a different scale, we could make the same weight 3 pounds if we wished to so designate it.

The specific nature of the measurement problem with money should now be clear. Money, claimed to be the central mechanism for measuring value in an economy, fails to meet two of the essential requirements of any measuring system. While it consists of numbers, it does not have a known quantity associated with it. There is no objective entity to which the numbers refer. Money numbers are like words without referents, words without definitions. As such, money numbers tend to float about, introducing unidentifiable measurement errors. Consequently, rather than serving to regulate an economy in a rational, meaningful manner, money spreads measurement errors throughout the system like a virus. In its train it leaves social disruption, injustice, hardship, and poverty in some parts of the system and lavishes outrageous luxuries upon people in other parts. Inflation may be understood as a defensive tactic by which people attempt to provide themselves with more money as protection against what seems a thoroughly irrational system or one that rewards only cunning and self-seeking. All appeals to values of economic justice are drowned by the “realities” of the surrounding dog-eat-dog system.

Given no known quantity in terms of which to judge prices, prices become products of relative differences in power. The larger corporations can dictate prices because the lone consumer cannot marshal sufficient power to resist. The Federal Reserve Bank can raise interest rates to the point of strangulating the economy, and the borrower stands helpless against it. Ignorance has always been the ally of power. When a people are ignorant, they can be exploited at will. Knowledge and understanding have always been the foes of ignorance and arbitrary power. We can provide people with the knowledge for resisting prices based on power by providing them with a proper understanding of how money must have a known quantity as its unit if it is to measure value accurately.

The key issue of our time is finding a known quantity that can serve as the measuring unit for money, a unit that will make money a more accurate measure of value. No other issue of our generation matches this one in importance. If we solve this one problem, we can reasonably expect its solution to lead to many readjustments in our economic relationships so that economics can become a sensible and helpful science instead of the often senseless and dismal one that it appears to be today.

THE SOLUTION

Economics is the science of the **production** and **distribution** of scarce resources. It follows that the monetary unit must be relevant to the production and distribution of scarce resources. The social purpose of economics is to provide the knowledge by which we may most wisely and prudently use the limited resources of the earth to meet human needs and desires. Economics is the science of economizing. Waste

is the antithesis of economics. Certainly the waste of human talent and effort is uneconomical. An economy that destroys people, which includes children, is in this sense, not economizing.

The production of wealth is always and everywhere done by people. More wealth is produced when people have the competence, motivation, and resources to produce more. Whatever discourages productivity discourages the production of wealth, real wealth understood as food, clothing, housing, and so forth. Inflation, in this sense, is uneconomical. Inflation discourages productivity because it disrupts the relationship between production and consumption. Under conditions of rapid inflation, people who produce today for a given money income will lose the reward for their labor if they hold on to the money. When a person is given a money wage, although we have the verbal habit of saying that that person has been "paid," in actuality that person is not paid until he or she receives goods or services for the money. The money is nothing more than a paper receipt for the work performed. Real payment occurs when the money receipts are turned in in exchange for commodities. Inflation deprives the productive person of his or her earned reward. To compensate for this effect, the producer must constantly try to get his or her wages increased faster than the rate at which prices are rising. The result is the familiar wage price spiral, and inflation worsens. The process is highly demoralizing and uneconomical.

We may conclude, then, as the first premise from which to arrive at the appropriate monetary unit, that the unit must be a unit that measures productivity.

We can make the next step in our quest for the appropriate monetary unit by imagining how productivity might be measured in a very simple economy. Let us assume an economy in which only one commodity is produced - potatoes. Let us further assume that land conditions throughout the economy are exactly identical - equally fertile, equally accessible, equally workable.

In such an economy it would be appropriate to pay people according to how much they produced. If a person produced ten pecks of potatoes, it would be appropriate to pay him or her ten pecks of potatoes. If a person produced 100 pecks of potatoes, it would be appropriate to pay that person 100 pecks of potatoes. Such a system of payment would encourage production since people would be assured payment exactly equal to how much they produced. By producing more, they could become rich - in potatoes. This quantity could be precisely defined and standardized for the entire economy. People would then have the right to withdraw potatoes from the system in exactly the amounts that they contributed potatoes to the system through their work and skill.

A modern economy differs from the above situation in involving an almost endless variety and number of different occupations. There are tens of thousands of different kinds of work done in the typical complex industrial system. These different types of work are done under as many different conditions and circumstances. Consequently, there is no single commodity in terms of which the value of all other commodities can be measured. Economists, sensing the problem, have conceptualized money as a commodity in the hope that in so doing they would have the common measure of value. As we have seen, money cannot perform its function accurately at present because it lacks a known quantity to serve as the measurement unit.

Analytically, the problem of measuring productivity in an economy of many different occupations and working circumstances is the problem of finding a common, universal factor that all occupations share. Our task is analogous to the grade school task of finding a common denominator by which we may add and subtract oranges, peaches, apples, and grapefruit. We must identify the **one** thing that all occupations, exercised under every possible condition, share in common. Additionally, the universal condition selected must be relevant to productivity. We need not expect this unit to correspond with existing prices of various factors of production since existing prices are based upon an inaccurate

money. This common unit, however, should enable us to identify where measurement errors are present in existing prices.

Neither should we expect people to immediately give their assent to this unit. We are all inclined to believe that the existing system, whatever it is and no matter how well or badly it functions, is the preferable one.

The appropriate and universal quantity by which productivity can be measured for all occupations under every conceivable circumstance is TIME. Indeed, time is the **only** universal quantity available to serve as the monetary unit. Its adoption can transform the quality of economic relations worldwide from relations of uncertainty and irrationality to those of universal predictability and justice.

Work is already universally organized on the basis of time. The workday is defined in terms of a certain number of **hours**. Wage rates are specified in terms of **hourly** rates of pay. Salaries are specified in **annual** terms. Interest is paid on the basis of the amount of **time** money is on deposit or in use. Corporations plan production and estimate labor requirements in **man-hours**. Many services are priced according to how much time is required on the average to perform the work. Time is also used to justify exceptions to the rule. For example, when people argue that a physician should be paid more for services than a truck driver, they usually cite the longer **time** that a physician spends in studying to become a physician. Higher pay for hazardous work is justified on the grounds that a worker is exposed to higher risk during a given **time** period. People's work careers are defined in terms of time. People are expected to begin work at a certain **age** and are expected to retire at a certain **age**. Time is used to compare prices. For example, we estimate the real cost of a car by calculation how many hours of work we must do to pay for it. Real prices from one time period to another are compared by calculating, for example, the number of hours of work needed to buy a car in 1950 with the number of hours needed to buy a car in 1978. Time is already universally used to organize work. **All that remains is to link time directly to money as its unit.**

We can make money a more accurate measure of value by using the HOUR as the basic monetary unit. Human judgment and negotiation can continue to be used in the application of this unit. People need not be paid exactly the same rates. The Hour would be the standard, the monetary yardstick. The fact that we all use yardsticks that are precisely the same length does not require that we all live in houses that are exactly the same size. The fact that we all have speedometers in our cars does not mean that we must always and everywhere drive at exactly the same speed. The use of a known and standardized unit of measure means that we can all communicate more accurately when judging and setting prices. Economic judgments can become more accurate judgments than the trial and error judgments that result from supply and demand auction systems.

Citing famous personages is an inadequate basis upon which to build a scientific proposition. But it is at least worth nothing that Benjamin Franklin in 1729; saw time as the proper measure of economic worth:

"By Labor may the Value of Silver be measured as well as other things. As suppose one man employed to raise corn, while another is digging and refining silver; at the year's end, or at any other period of time the complete produce of corn and that of silver are the natural price of each other; and if one be twenty bushels and the other twenty ounces, then an ounce of that silver is worth the labor of raising a bushel of that corn. Now if by the discovery of some nearer, more easy or plentiful mines, a man may get forty ounces of silver as easily as formerly he did twenty, and the same labor is still required to raise twenty bushels of corn, then two ounces of silver will be worth no more than the same labor of raising one bushel of corn, and that bushel of corn will be as cheap as two ounces as it was before at one; **caeteris paribus.** [*Other things being equal*] (Franklin, 1959:149)."

Although he does not explicitly mention time, Adam Smith, the reputed founder of classical economics, held a view compatible with Franklin's:

"At all times and places that is dear which it is difficult to come at, or which it costs much labor to acquire: and that cheap which is to be had easily, or with very little labor. Labor alone, therefore, never varying in its own value is alone the ultimate and real standard by which the value of all commodities can at all times and places be estimated and compared. It is their real price; money is their nominal price only (Smith, 1963:26)."

A contemporary who expresses a similar view is Marshall McLuhan:

"Like works and language, money is a storehouse of communally achieved work, skill, and experience.... Even today money is a language for translating the work of the farmer into the work of the barber, doctor, engineer, or plumber. As a vast social metaphor, bridge, or translator, money - like writing - speeds up exchange and tightens the bonds of interdependence in any community. It gives great spatial extension and control to political organization, just as writing does or the calendar. It is action at a distance, both in space and in time. In a highly literate....society, 'time is money' and money is the store of other people's time and effort (McLuhan, 1964:136)."

It goes without saying that the Hour is already precisely standardized. Everywhere in the world, time is precisely measured - guided by the rotations of the earth and its orbit around the sun. There is hardly any place on earth where people do not know what is meant by an hour. This is in marked contrast to the situation with dollar. No one knows what "dollar" refers to. The worth of a dollar is anybody's guess.

IMPLEMENTATION OF THE SOLUTION

There are three steps to fully implementing the solution to our present economic distress insofar as it is caused by the absence of a known quantity to serve as a meaningful monetary unit.

- 1) Existing dollar currency must be replaced by currency printed in units of Hours.**
- 2) All existing goods and services in the economy must be carefully researched to determine the actual labor time required to produce and distribute them.**
- 3) All existing prices must be readjusted so that they correspond to the scientifically established actual labor time required to produce and distribute them.**

Once these three steps have been implemented, our economy will have been put on an accurate standard of measurement, inflation will have been ended, and we will be able to turn our attention once again to the great historical task of reducing costs and prices by making production and distribution more efficient. With prices declining instead of rising, the cost of living will decline for everyone, and people will be able to turn their energies to the higher pursuits of human life unhampered by needless concerns about obtaining food, clothing, shelter, and medical care.

Step One: Existing dollar currency must be replaced by currency printed in units of Hours.

A money system based on the Hour would be a money system in which the numbers on currency stood for amounts of time. The basic unit would be the Hour. The Hour could be divided into 100 subunits of "cents," so that the system could be entirely decimal. Multiples of Hours would be represented by such denominations as 5 Hour bills, 10 Hour bills, 20 Hour bills, and so forth. In all cases the Hour would be the standard in terms of which productivity was measured.

Because Hour money would be a decimal money system, all the machinery presently used in handling transactions in dollars could be used for handling transactions in Hours. All existing cash registers,

computers, credit cards, and accounting machines could be used without modification. The process of changing to Hour money is analogous to the process of changing from customary units of measure like yards and gallons to metric units. However, changing to the metric system is very costly because all existing tools have to be replaced. Comparable expenses in changing to Hour money would be minimized because all accounting machinery could be used without modification.

The general procedure for replacing one currency with another is known and has been used by various societies. The procedure is to first print a new currency. Then a particular exchange ratio is specified, and the old currency is replaced by the new currency at that exchange ratio. Suppose the exchange ratio were set at 10 dollars to 1 Hour. Then every 10 dollars presently in circulation would be replaced by a new 1 Hour bill. Every price in the economy would be divided by 10 in order to make the new price an Hour price. Rents throughout the society would be divided by 10; home mortgages would be divided by 10 in order to make the new price an Hour price. Rents throughout the society would be divided by 10; home mortgages would be divided by 10; the price of automobiles would be divided by 10; wages and salaries would be divided by 10. Every existing price would be divided by 10. All U.S. dollars everywhere in the world would be replaced by this procedure.

The exchange of one currency for another currency at a fixed ratio has no effect whatsoever on the **relative** prices, wages, or profits that people receive. The exchange alters nothing in the economy except that a new currency replaces an old one. No prices are increased or decreased; no wages are increased or decreased. The process is strictly analogous to replacing our present method of measuring distance in miles by a system of measuring distance in meters. Nothing is changed. The distance from St. Louis to Boston remains the same as it was. All that is changed is the unit of measure by which people describe that distance.

If nothing is changed, why switch currencies? While people's relative positions do not change, the scale of measurement is changed from one that makes no sense, one that has no known quantity, to one that makes sense, to one that is based upon a known quantity. The process is analogous to the difference between standing in a darkened room and then turning on a light. The person's position in the room may be unchanged before and after the light is turned on. However, while the room is dark, the person cannot see where he or she is. As soon as the light is turned on, the person can see where he or she is. As long as we continue to use dollars as our currency, we all remain in the dark with respect to where we are economically. Changing to Hour money turns the light on. It changes no one's position - it only illuminates the situation so that we can see it more clearly. Turning the light on by introducing the Hour as the monetary unit is the first essential step to accurate prices.

Selecting the exchange ratio is the most important decision at this stage of the process. However, we can expect to find inaccuracies throughout the economy so that an exchange ratio that looks correct from one point of view may not look correct from another. The critical step is to replace existing dollars with Hours. Inaccuracies can be identified and corrected subsequently.

A reasonable basis for selecting the exchange ration is as follows. The Gross National Product for the United States for 1979 is expected to be about \$2,300 billion. The number of people employed is about 96 million. Assuming that each worker works 40 hours a week for 50 weeks, each worker is employed 2,000 hours annually. Therefore, 96 million persons work in one year a total of 1,920 billion hours. The Gross National Product of \$2,300 billion will be produced by 1,920 billion hours of labor, or, on the average, at the rate of \$11.91 per hour. Therefore, it would be reasonable to exchange dollar money for Hour money at the rate of \$11.91 = 1 Hour. To simplify the arithmetic, we shall use \$10 = 1 Hour.

Any exchange ration will not alter people's relative positions in the system. Consider the following sample of salaries in 1977:

U.S. President	\$200,000	→	20,000 Hours
U.S. Congressman	\$57,000	→	5,750 Hours
Ford Chairman of Board	\$992,000	→	99,200 Hours
Illinois Governor	\$50,000	→	5,000 Hours
Bus Driver	\$13,800	→	1,380 Hours

After the exchange the US President would still make four times as much as the Illinois Governor; the Chairman of Ford would still make 4.96 times as much as the President of the United States; The President 14.49 times as much as the bus driver, and so forth.

However, the adoption of the Hour as the basic monetary unit would give people a meaningful yardstick in terms of which to interpret these and other salary figures. If a person works 40 hours per week for 50 weeks, he or she works a total of 2,000 hours annually. Anyone working for 1 Hour of money for each hour of work would have an annual income of 2,000 Hours. If we choose an exchange ration that results in the salary of the US resident being expressed as 20,000 Hours, then people can immediately interpret that salary as equivalent to 10 years of income relative to the standard. If the salary of the Chairman of the Board of Ford is expressed as 99,200 Hours, then his salary can immediately be interpreted as equivalent to 46.9 years relative to the standard.

Step 2: All existing goods and services must be carefully researched to determine the actual amount of labor time required to produce and distribute them.

Because we have been operating with money that has no known quantity serving as its unit, there are pricing errors throughout the economy. Exchanging dollars for Hours would eliminate none of these errors. The adoption of a currency with units in Hours is only the first but essential step in the process of reforming our economy so that prices would be more accurate in the future than they are today. The second step is for citizens to create research groups throughout the country, groups composed of consumers, businessmen, government employees, any and every group, working in concert or independently, to carefully assess the average labor time required to produce particular goods and services. Neighborhood groups can work together to determine the labor time value of the property they rent or are buying. Unions and professional associations can research the activities of their members to determine labor time standards for them. Wholesalers and retailers can form groups to study the real costs of their products. Farmers' groups can research their costs and establish a fair and accurate labor time price for their products.

Hour money is preferable to dollar money because Hour money gives people a real, appropriate, and objective standard for making economic price judgments. Every price can be a measurement based on this standard. Hour money provides us with a meaningful standard, a meaningful yardstick. The application of that standard will remain a matter of judgment. This is particularly important to keep in mind with respect to wages. The **standard** of a just wage would be one Hour of money for one hour of work. We currently take for granted the principle of one person - one vote. We would be outraged if people claimed that they should have ten or fifteen votes instead of the standard one. Yet, in the economic realm we hold with

equal tenacity the principle that people can demand wages of any magnitude. The Chairman of Ford receives 46.9 times as much in wages as the person receiving \$10 per hour. Hour money would not require that the Chairman of Ford make the same wage as everyone else. However, it would require that any amount greater than the standard one Hour of money for one hour of work be justified on productivity grounds. The Chairman of Ford would be under pressure to justify 46.9 times greater per hour than the standard. The same would be true of all occupations and professions. Every person could earn whatever amount of money he or she wished to earn by working more. Unions could continue to operate as they do today; the difference would be that the monetary unit would be a real quantity instead of the meaningless dollar. Every argument currently used to justify higher or lower wages would continue to be a usable argument. The only difference, and a significant one, would be that everyone would be using a known quantity as their measure. The process would be analogous to making decisions about how large to construct houses. Although all parties use exactly the same yardstick, not all houses are exactly the same size. Size depends upon factors such as family size, life style, and purpose. Work, when it is performed under differing circumstances can be differentially compensated. Hour money would not prevent such differential payment; it would only help to make the associated decisions more accurate.

Hour money would be money with a meaningful unit. How people decided to apply that unit would be a matter of their judgment and their reasons. Physicians can argue that they should be paid more than the standard wage on the grounds that they study many years studying to be doctors. They might argue that their skill at diagnosis and treatment enables them to deal relatively quickly with each patient. Such arguments could and probably would be made. Patients could make counter arguments, saying for example, that while the argument of the physician is valid; the price demanded by the doctor for a visit is still too high. In the end the price will be the result of some combination of the arguments of the physician and those of the patients. The contrast with how things are done at present is that both parties would be forming their arguments in terms of a known standard.

Higher wages could be justified for highly productive workers. Suppose a worker invents a new process that greatly accelerates production. Before the invention, he or she could produce 100 units of a commodity per hour. After the invention, he or she can produce 500 units of the commodity per hour. Such increased productivity could justify as much as a five hundred percent increase in the worker's wages. Alternatively, the worker's wages could be increased somewhat at the same time that the selling price of the commodity could be lowered somewhat, thus sharing the benefits of greater efficiency between worker and consumer.

Step 3: All existing prices must be adjusted so that they correspond to the scientifically established actual labor time required to produce and distribute them.

Once a particular price has been researched and the real cost of production established, people in their everyday economic dealings can exert influence to push prices toward the real cost. Stating that "prices must be adjusted" does not necessarily mean that government should intervene and force compliance. Our system is one in which personal economic freedom is a highly prized value. Hour money, by providing people with a known and meaningful measure of economic worth, can provide people with the informational and moral means for pressuring sellers to sell their goods and services at their actual cost instead of at some inflated figure. The market, in other words, can continue to be the major mechanism for setting prices. However, it would be a fundamentally improved market process because everyone participating in it would be equipped with a known, objective standard for making economic price judgments. Hour money would be an effective means for satisfying the Conservative desire for minimum government intervention in the economy by supplying each and every person with the means, in the form of a known and appropriate monetary unit, for making his or her own judgments of economic value accurately. Government intervention is so prevalent today precisely because dollar money produces price errors and misallocations that can only be rectified by such intervention. Give people the means to judge

the accuracy of prices on their own, and they will themselves exert the necessary pressures, by force of argument and by common understanding and the resulting unity of effort, to transform the price structure from one of chaos to one that much more closely reflects real costs and contributions and hence what people deserve as a matter of economic justice.

This last step would take place gradually. Some alterations might be made relatively quickly. Rents and interest rates, for example, could be systematically reduced in a matter of months, given sufficient effort by consumer, neighborhood, and political action groups. Prices of all commodities could be adjusted in like manner in a short time. Other massive inequalities might take considerably longer to adjust. For example, the vast family fortunes that have accumulated over generations and centuries would probably be adjusted only gradually through such mechanisms as income tax and inheritance laws. However, gradual changes here are not to be discounted. People have a right, including rich people, to be treated with consideration. The rich are to a considerable degree also victims of the inaccuracies of dollar money. By proceeding gradually in adjusting family fortunes, we increase the chances that the rich will both understand and cooperate with the adjustments that Hour money will show to be fair and necessary. An accurate monetary unit is intended to promote material well being for all persons, rich and poor alike, by bringing prices into line with actual costs.

The use of a known quantity as the monetary unit, in general, would make rational many of the processes that are today irrational and mystified. Most of current economic theory, while it would need some modification, would continue to be useful. But because money today contains no known quantity, economic ideas have taken on distorted forms. It is as if the economist were looking at the economy through a lens that is misshaped. Introducing Hours as the monetary unit is analogous to taking the distortion out of the lens so that the scene can be viewed more accurately.

The effect of Hour money upon inflation is especially noteworthy. The immediate effect of the change to Hour money would be an immediate end to inflation. This effect is likely because Hour money would let everyone know that wages, prices, and profits should reflect productivity. Raising a price would imply that more labor is now required to produce a commodity than previously. Such is very rarely the case. On the contrary, the general pattern in the past has been for the amount of labor required to produce something to go **down**, not up. The natural direction for prices, in other words, is downward. We have seen prices go continually upward because money has had no known quantity to hold prices to where they properly belong - namely, reflecting the real costs of production. People would be constrained from asking for wage, price, or profit increases by the understood need to justify those increases in real terms. Today, price increases are justified on little more than the assertion that "inflation" requires them.

With inflation ended, prices could move in the proper direction - downward. As this occurs, everyone's standard of living would tend to rise as the cost of living became lower and lower. The largest gains to the people of the country would come from lower prices. While people's wages and salaries might remain stable, price decreases would produce a net gain in their overall purchasing power. Further gains in purchasing power would come from being able to identify misallocation of moneys now present in the system. Taxes could be levied more rationally. The redistribution role of government could then be carried out more reasonably and thus more justly than at present. Economics could become a subject as simple and as understandable as the family budget. Economics could become as comprehensible a subject as any other area of human knowledge. Our children and our children's children and all subsequent generations would thank us for delivering the world from the measurement errors and consequent absurdities and injustices produced by contemporary moneys. And a great new era of human well-being would have been instituted.

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The ideas in this paper are derived from a more general theory that conceives of human societies as networks of information chains. Successful cooperation depends upon the accurate communication of information through such networks. In this framework, money can be recognized as a medium of communication comparable to spoken language, writing, and numbers. The entire theory is contained in the manuscript "Gather Together: A General Theory of Society and History" by Robert R. Blain, Professor of Sociology, Southern Illinois University at Edwardsville.

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End of Blain document. For my own take on the topic of value and other nature of money questions, write me at leviphilos@blackfoot.net or jcarvingblock@yahoo.com