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First Version

MARKET ECONOMY FREE FROM TRADE CYCLES

September 16, 1946

~~There can be little doubt~~ L. Szilard

~~that a free~~ ~~unembargoed~~ ~~single~~ ~~currency~~

The market economy under the present monetary system is characterized by alternating booms and depressions. ~~It~~ <sup>and that</sup> is not possible to eliminate these fluctuations by controlling the interest rate, a method of control which has its <sup>drawback</sup> limitation in the fact that the interest rate cannot be made smaller than zero. While <sup>such</sup> a market economy, [under the conventional monetary system] is obviously instable, it is not easy to disentangle all of the factors which enter into the causation of booms and depressions. ~~However,~~

such an analysis of the market economy is not necessary in order to see that under <sup>a</sup> ~~a~~ <sup>pure</sup> ~~slightly~~ <sup>currency</sup> ~~different~~ monetary system it ~~is~~ <sup>would be</sup> possible to have a stable market economy which would be free from the oscillations which ~~make~~ <sup>are</sup> called the trade cycles.

We shall attempt to describe <sup>such</sup> a monetary system which ~~leads~~ <sup>leads to</sup> a stable market economy in the present paper. We arrive at it through the thought that money in the conventional system fulfills <sup>at least</sup> two different functions. It is used for purchasing goods from current production and it is used to establish a claim on future production. As long as the same currency is used for both of these functions the market economy under laissez faire suffers not from being too free but from not being free enough. Another degree of freedom is introduced if two different currencies serve these two different functions and if the exchange rate between the two currencies is permitted to remain free -- that is, if it is determined by the market.

~~that price and wage rigidities play a certain role in the phenomenon appears very likely but it may not~~



dollar holdings. Depositors of red dollars are entitled to interest paid in accordance with the prevailing interest rate on the nominal value of their red dollar deposit (slightly less than the interest <sup>rate</sup> charged by the banks on loans <sup>the difference representing a service charge to the bank</sup>)

The green dollars obtained on loan (against red dollar holdings or other securities) will be kept on checking accounts on which no interest is paid. ~~The total amount of these demand accounts is then at all times equal to the total amount of loans which have been taken up.~~ We are disregarding here, in order to simplify matters, the fact that a certain amount of banknotes may actually be used in daily transactions and deal with the system as if all payments in green dollars were made by checks drawn on demand accounts. *insert here*

*insert here*

~~Let us assume that wages are paid each month at the first of the month and that on the 31st of the month the bank draws a balance of every account. Whenever a person's checking account shows on the 31st of the month a green dollar deposit in excess to his indebtedness to the bank, the bank, acting on his behalf, will buy red dollars for the excess on the open market and credit his red dollar holdings with the proceeds of this transaction.~~

*on the checking account of his client will credit the excess amount in the account the first days of the following month will*

~~Under conditions of full employment, the total amount of loans taken up will correspond to the total nominal amount of red dollars which are held by depositors. Allowances must of course be made for seasonal fluctuations. Apart from such fluctuations however, whenever the amount of loans taken up falls below its "standard" value, the central bank will disburse the unutilized excess amount by purchasing red dollars on the open market. The red dollars thus acquired will be currently distributed~~

*and will buy on the first days of the following month for this amount*

~~red dollars for~~

*for this excess red dollars*

*red dollars which it will credit to his client's red dollar account of his client*

among the population free for instance by means of a national lottery, the "prizes" of which may have a market value of perhaps a few thousand dollars, a piece.

Having thus described the spielregeln of the system, we may now ask how a market economy utilizing this system would react under various conditions. It is clear that no green dollar inflation can occur in the system since it is always possible, by sufficiently raising the interest rate to keep the total amount of the loans to less than the nominal value of the total amount of the red dollar holdings (which just corresponds to the money requirements of the economy at the standard price level and under conditions of full-employment).

But what happens, if for some reason or other, in anticipation of a fall, in the general price level of consumers goods, (in green dollars) dealers should be induced to hold back with purchases and if they begin selling from stock without replenishing their stock. If dealers take in more green money than they disburse they may begin to have more money on the individual demand accounts than corresponds to the individual loans which have been granted to them and in that case the bank will begin to purchase on their behalf red dollars. Alternatively they may begin to repay loans in which case the unloaned excess amount will be immediately used by the central bank to purchase red dollars on the open market, which it will distribute among the population. The consequence of any expectation of even a slight fall in the prices of consumers goods, as expressed in green dollars, will therefore lead to a rapid rise in the price of red dollars.

Let us assume now that a fraction of the population which is responsible for a substantial part of the total consumption of the community has

*no*  
*impossible* *the total of the money account is held by the amount of green dollars in the system*

*and thereby reduce the amount of their demand account transferred*  
*by the bank* *green dollar certificates no longer needed for 100% coverage*  
*must not be used to currency hoard*

*Sh...*

appreciable holdings of red dollars. A <sup>marked</sup> sharp rise in the price of red dollars will mean that the savings of ~~these~~ people have considerably increased in purchasing power and under these circumstances <sup>people</sup> ~~may~~ will decide to dispose of part of their red dollar holdings and buy goods which in terms of red dollars now appear exceedingly cheap and which they may not have been able to afford to buy prior to this rise in the value of their deposits. Others who wish to speculate, may in the same circumstances prefer to borrow green dollars on their red dollar deposit and then purchase consumers goods with these borrowed dollars on the assumption that the price of red dollars will increase still further. <sup>continued on</sup> Still others receiving red dollars through the national lottery will be inclined to spend part of these windfalls rather than to save all of it. These mechanisms will tend to stabilize the situation inasmuch as it may prevent any decrease in the general price level of consumers' goods from becoming too steep so that <sup>replace</sup> dealers can continue their normal transactions and make a profit even though temporarily the price level may manifest a slightly falling tendency and the profit margin may thereby be slightly reduced.

It is a peculiarity of this monetary system that the central bank can go on utilizing unused loans for the purchase of red dollars and distribute these red dollars free by means of a national lottery among the population without creating an inflationary situation. The difference between this monetary system, which is based on two currencies, and the ordinary monetary system, in which we have only one currency, can be best illustrated by considering what would happen in the latter if the central bank kept on distributing money among the population whenever it wishes to combat a deflationary situation. Though in the long run this would clearly lead to

a steady increase in deposits, as long as the population did not change its behavior pattern, i.e., if, year after year, the population would continue to make excessive savings and the central bank would continue to distribute among the population the "unused" excess amount, nothing untoward would happen. But the situation would be an unstable one and could be upset in either of two ways. Consumers, anticipating rising prices, might suddenly begin to make excessive purchases of consumers' goods. This kind of action in itself might lead to an enormous rise of prices and inflation, although it is not a very likely course of events. More likely would be a tendency of the depositors to shift from bank deposit to other types of investment. This would lead to excessive activities in the production of capital goods, draw off labor from the production of consumers' goods, produce a scarcity of the latter, and an inflation (which could not necessarily be checked by raising the interest rate) would follow.

In our two currency system no green money inflation can occur, ~~since the amount of the loans can be controlled by the interest rate~~. Any attempt on the part of the public to overconsume by selling red dollars from their deposit would merely lead to a fall in the red dollar price without appreciably increasing the <sup>green dollar</sup> prices of consumers' goods and therefore without making any wage adjustments necessary.

We have now to discuss one more point which has so far not been touched upon. [ In an expanding economy, whether the expansion is due to the increase in population or to the increase in the standard of living made possible by technological progress, or to both factors, there is <sup>needed for</sup> a steady increase in the money circulation <sup>in order to maintain level</sup> which corresponds at stable prices to full-employment. A certain amount of red money should therefore be sold on the

*Point*

*Point*

*about  
labor  
market  
money  
price*

open market during the course of every year by the central bank and the amount of its nominal value is determined by the required increase in the circulation of green money. The <sup>green dollars</sup> proceeds from these sales have to be returned to the economy by the central bank and this can be achieved either by reducing taxes, or by distributing the proceeds free <sup>among the population</sup> by means of <sup>in one</sup> national lottery, the prices of which <sup>may be</sup> set at a few thousand dollars <sup>or more</sup> a piece, or if desired, by a combination of both methods. *the end*

In the conventional monetary system there is no mechanism to insure that the amount that people try to save should not exceed the amount that can be usefully invested. In the system proposed here this is automatically assured. If too many people try to save <sup>but</sup> large amounts they will have to pay a high price for the red dollars which they purchase. Thereby they will induce others to consume more and help to bring up the total consumption to its predestined level. Paying a high price for red dollars ~~however~~ <sup>never</sup> does not mean <sup>that</sup> those who purchase those red dollars ~~necessarily~~ incur a loss. Again, if the community persists in its "savings" habits, nothing untoward will happen, but rather the price of red dollars will steadily increase in the course of the years. <sup>insert</sup> <sup>Jan 27</sup> ~~but~~ if for one reason or another, a large number of people suddenly decide that they want to increase their consumption rather than to "save" the price of red dollars will fall on the market, thereby discouraging an increase in the consumption on the part of those who want to consume at the cost of their savings.

Clearly, no monetary system can make it possible for an economy to "consume" the "savings" of many years in one single year. But while in our system attempts to do so would depreciate the red dollar holdings of the savers, this would not lead to a too pronounced rise in prices of

consumers' goods and would therefore leave the relations of wages and prices stable. No new wage demands would therefore arise as a result of such aberrations. This may be compared with the conventional system where a "run" on the bank will either lead to bankruptcy or if the demand of the depositors is satisfied and if they use the money for purchases of consumers' goods, it will lead to a rise in prices which in turn would lead to a demand for a rise in wages.

If green dollars are also issued in the form of bank notes, as for sake of convenience they ought to be, there is theoretically the possibility of hoarding bank notes. In a smoothly functioning economy there would be not much incentive for such hoarding. But in order to stop any such tendency it might be required by law that bank notes in excess of, say, \$100 per person, be deposited on a bank account before the 31st of each month. If one wishes one could even go a step further and remove all legal protection from any "illegal" hoards of banknotes. Finally, there should be insistence on having a fool-proof system, one might limit the validity of individual banknotes to one calendar month (or maybe one calendar year). Then of course we could be quite sure that all banknotes would be paid in on a bank account before the 31st of each month, the day of "accounting." It is very unlikely though that such a drastic measure would be required in the absence of any overwhelming incentives for such hoarding.

#### GENERAL REMARKS TO THE TWO CURRENCY SYSTEM

A market economy in a capitalistic setting will best function if there is an incentive to investment by expectation of profit and if it is profitable to invest then we may expect that those who wish to borrow money for production purposes will be prepared to pay interest at a certain appreciable



rate. In the system proposed in this paper there is an equitable allocation of loans by means of allowing the interest rate to be determined by the market with the total volume of available loans being fixed by the nominal value of the total amount of red dollars in the system. If too many want to borrow too much, those willing to pay the higher interest rate will have preference, as it should be.

While ~~a~~ man who acquires green money, either by earning it or by selling some of his assets, acquires the right to consume from current production. ~~If~~ a man wants to "save" ~~he~~ can either buy goods and store them or acquire a share in an enterprise, for instance by buying stocks, or he might acquire by buying red dollars the right to lend money to others at the current interest rate. The equitable allocation of the right to lend money to others is accomplished by permitting the price of red dollars to be determined by the market.

The only function of the Government in this system consists in determining the rate at which additional amounts of red dollars are issued. Clearly, how much should be invested in toto in accordance with desirable and possible expansion of the economy is a decision which the community must make in the light of the increase of population and the advances of technology which make a rise in the standard of living possible. There is no reason why the Government should enter the economic picture in any other way, or why the budget of the Government should not be balanced at any time. Only inasmuch as the Government may embark on commercial or industrial enterprises, would the Government, like any other entrepreneur be justified in borrowing money at the prevailing rates.

Notes

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*horr.*

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The market economy under the present monetary system is characterized by alternating booms and depressions. It is not possible to eliminate these fluctuations by controlling the interest rate, a method of control which has its limitation in the fact that the interest rate cannot be made smaller than zero. While a market economy, under the conventional monetary system, is obviously instable, it is not easy to disentangle all of the factors which enter into the causation of booms and depressions. However, such an analysis of the market economy is not necessary in order to see that under a slightly different monetary system, it is possible to have a stable market economy which would be free from the oscillations which make up the trade cycles.

We shall attempt to describe such a monetary system which leads to a stable market economy in the present paper. We arrive at it through the thought that money in the conventional system fulfills two different functions. It is used for purchasing goods from current production and it is used to establish a claim on future production. As long as the same currency is used for both of these functions the market economy under laissez faire suffers not from being too free but from not being free enough. Another degree of freedom is introduced if two different currencies serve these two different functions and if the exchange rate between the two currencies is permitted to remain free — that is, if it is determined by the market.

These two currencies we shall simply call, red dollars and green dollars. Red dollars are not issued in the form of bank notes but are kept in the bank. Any person who has a certain amount of savings in red dollars to his credit in the bank is entitled to a loan in green dollars of an amount equal to but no more than the nominal value of his red dollar holdings.

All wages and salaries are paid in green dollars and all purchases of goods take place in green dollars.

In order to get the proper perspective, it is suggested to assume the following for the sake of argument, that salaries and prices of consumers goods are rather constant in terms of green dollars (except for the slow rise in salaries which corresponds to the gradual increase in the standard of living that can be expected to accompany technological progress under conditions of full-employment). This assumption may be verified later after the system is fully described.

Let us now describe this monetary system as it would function under stationary conditions -- that is, after it had been established for a while so that we may neglect factors which may play a role merely during a transitional period. We assume that the system has been adjusted in such a manner that we have full-employment and it may then be verified that this condition will be maintained.

The total amount of red dollars on deposit is so chosen that its nominal value should correspond to the total amount of money required under a stationary condition of full-employment. Green dollars may be borrowed from the bank at the prevalent interest rate against various kinds of securities which serve as collateral, as well as against red

dollar holdings. Depositors of red dollars are entitled to interest paid in accordance with the prevailing interest rate on the nominal value of their red dollar deposit (slightly less than the interest charged by the banks on loans).

The green dollars obtained on loan (against red dollar holdings or other securities) will be kept on checking accounts on which no interest is paid. The total amount of these demand accounts is then at all times equal to the total amount of loans which have been taken up. We are disregarding here, in order to simplify matters, the fact that a certain amount of banknotes may actually be used in daily transactions and deal with the system as if all payments in green dollars were made by checks drawn on demand accounts.

Let us assume that wages are paid each month at the first of the month and that on the 31st of the month the bank draws a balance of every account. Whenever a person's checking account shows on the 31st of the month a green dollar deposit in excess to his indebtedness to the bank, the bank, acting on his behalf, will buy red dollars for the excess on the open market and credit his red dollar holdings with the proceeds of this transaction.

Under conditions of full-employment, the total amount of loans taken up will correspond to the total nominal amount of red dollars which are held by depositors. Allowances must of course be made for seasonal fluctuations. Apart from such fluctuations however, whenever the amount of loans taken up falls below its "standard" value, the central bank will disburse the unutilized excess amount by purchasing red dollars on the open market. The red dollars thus acquired will be currently distributed

among the population free for instance by means of a national lottery, the "prizes" of which may have a market value of perhaps a few thousand dollars, a piece.

Having thus described the spielregeln of the system, we may now ask how a market economy utilizing this system would react under various conditions. It is clear that no green dollar inflation can occur in the system since it is always possible, by sufficiently raising the interest rate to keep the total amount of the loans to less than the nominal value of the total amount of the red dollar holdings (which just corresponds to the money requirements of the economy at the standard price level and under conditions of full-employment).

But what happens, if for some reason or other, in anticipation of a fall, in the general price level of consumers goods, (in green dollars) dealers should be induced to hold back with purchases and if they go on selling from stock without replenishing their stock. If dealers take in more green money than they disburse they may begin to have more money on the individual demand accounts than corresponds to the individual loans which have been granted to them and in that case the banks will begin to purchase on their behalf red dollars. Alternatively they may begin to repay loans in which case the unloaned excess amount will be immediately used by the central bank to purchase red dollars on the open market, which it will distribute among the population. The consequence of any expectation of even a slight fall in the prices of consumers goods, as expressed in green dollars, will therefore lead to a rapid rise in the price of red dollars. Let us assume now that a fraction of the population which is responsible for a substantial part of the total consumption of the community has

appreciable holdings of red dollars. A sharp rise in the price of red dollars will mean that the savings of these people have considerably increased in purchasing power and under these circumstances many will decide to dispose of part of their red dollar holdings and buy goods which in terms of red dollars now appear exceedingly cheap and which they may not have been able to afford to buy prior to this rise in the value of their deposits. Others who wish to speculate, may in the same circumstances prefer to borrow green dollars on their red dollar deposit and then purchase consumers goods with these borrowed dollars on the assumption that the price of red dollars will increase still further. Still others receiving red dollars through the national lottery will be inclined to spend part of these windfalls rather than to save all of it. These mechanisms will tend to stabilize the situation inasmuch as <sup>they</sup> ~~it~~ may prevent any decrease in the general price level of consumers' goods from becoming too steep so that dealers can continue their normal transactions and make a profit even though temporarily the price level may manifest a slightly falling tendency and the profit margin may thereby be slightly reduced.

It is a peculiarity of this monetary system that the central bank can go on utilizing unused loans for the purchase of red dollars and distribute these red dollars free by means of a national lottery among the population without creating an inflationary situation. The difference between this monetary system, which is based on two currencies, and the ordinary monetary system, in which we have only one currency, can be best illustrated by considering what would happen in the latter if the central bank kept on distributing money among the population whenever it wishes to combat a deflationary situation. Though in the long run this would clearly lead to

a steady increase in deposits, as long as the population did not change its behavior pattern, i.e., if, year after year, the population would continue to make excessive savings and the central bank would continue to distribute among the population the "unused" excess amount, nothing untoward would happen. But the situation would be an unstable one and could be upset in either of two ways. Consumers, anticipating rising prices, might suddenly begin to make excessive purchases of consumers' goods. This kind of action in itself might lead to an enormous rise of prices and inflation, although it is not a very likely course of events. More likely would be a tendency of the depositors to shift from bank deposit to other types of investment. This would lead to excessive activities in the production of capital goods, draw off labor from the production of consumers' goods, produce a scarcity of the latter, and an inflation (which could not necessarily be checked by raising the interest rate) would follow.

In our two currency system no green money inflation can occur since the amount of the loans can be controlled by the interest rate. Any attempt on the part of the public to overconsume by selling red dollars from their deposit would merely lead to a fall in the red dollar price without appreciably increasing the prices of consumers' goods and therefore without making any wage adjustments necessary.

We have now to discuss one more point which has so far not been touched upon. In an expanding economy, whether the expansion is due to the increase in population or to the increase in the standard of living made possible by technological progress, or to both factors, there is a steady increase in the money circulation which corresponds at stable prices to full-employment. A certain amount of red money should therefore be sold on the

open market during the course of every year by the central bank and the amount of its nominal value is determined by the required increase in the circulation of green money. The proceeds from these sales have to be returned to the economy by the central bank and this can be achieved either by reducing taxes, or by distributing the proceeds free by means of a national lottery, the prizes of which may be set at a few thousand dollars a piece, or if desired, by a combination of both methods.

In the conventional monetary system there is no mechanism to insure that the amount that people try to save should not exceed the amount that can be usefully invested. In the system proposed here this is automatically assured. If too many people try to save large amounts they will have to pay a high price for the red dollars which they purchase. Thereby they will induce others to consume more and help to bring up the total consumption to its predestined level. Paying a high price for red dollars however does not mean that those who purchase those red dollars necessarily incur a loss. Again, if the community persists in its "savings" habits, nothing untoward will happen, but rather the price of red dollars will steadily increase in the course of the years. But if for one reason or another, a large number of people suddenly decide that they want to increase their consumption rather than to "save" the price of red dollars will fall on the market, thereby discouraging an increase in the consumption on the part of those who want to consume at the cost of their savings.

Clearly, no monetary system can make it possible for an economy to "consume" the "savings" of many years in one single year. But while in our system attempts to do so would depreciate the red dollar holdings of the savers, this would not lead to a too pronounced rise in prices of

*the green dollar*

X



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