

In discuss
operation for a
operation for a period of time, so

during the transition from the one currency system to the two currency system have faded out.

We shall, for the sake of simplicity, assume that there is only one bank, which we shall call the Bank; but we shall distinguish between the Bank and the Central Bank.

~~insert here~~

Insert here about role of Bank +

We shall assume that every person ~~and~~ ^{or} every business corporation has three accounts with the Bank:

1. A red dollar account on which interest is paid at some current (variable) interest rate ~~as explained later in detail~~. This interest is paid on the nominal value of the red dollar holdings (in contradistinction to the market value of these holdings).

2. A green dollar checking account on which no interest is paid.

3. A green dollar debit account on which interest is charged at some current (variable) interest rate.

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Insert 11

We postulate that all wages and salaries are paid in green dollars at equal time intervals, i.e. on the ~~last~~ ^{second} day of the basic period of the system. If this basic period is set to be one week, these payments will be made on the ~~first~~ ^{second} day of the week, and if the basic period is set ~~for~~ ^{to be} one month, these payments will be made on the ~~first~~ ^{second} day of every month. We shall for the present leave it undetermined, just what time interval should be adopted as the basic period and we shall simply call the basic ~~day of~~ ^{period} the "month", so that we shall speak of operations which take place on the first day of the "month" and the last day of the "month" when we actually mean the first day of the basic period and the last day of the basic period.

We further postulate ~~that every person~~ that all wages are paid and all purchases of goods are made in green dollars by transfer through check. We are thus disregarding for the time being the possibility that for the sake of convenience a certain limited amount of green dollars may be issued in the form of bank notes to the public. The discussion of this point is taken up later.

Insert 10

Whoever has a red dollar holding is entitled to obtain a loan in green dollars from the ~~bank~~ ^{changed to his debit account} in amounts up to the nominal value of his red dollar holding.

Only a fraction of the green dollar loans to which the red dollar depositors are ~~entitled~~ ^{thus} ~~will~~ ^{used} in fact be taken up by the red dollar depositors, and green dollar loans will be granted by the bank against securities other than red dollar deposits also, i.e., stocks, bonds, real estate, etc. The upper limit for green dollar loans which the bank may grant against ~~such~~ securities is determined by the nominal value of each such security in the following manner: at the market value of the security and at the current price of red dollars a certain amount of red dollars corresponds to the each such security, ~~and~~ ^{which is defined as the nominal value} the upper limit of the loan which may be

introduce concept of interest rate

value as the nominal value

Payments made ↑
 of the month into a checking account will appear
 on the account on the ~~last day~~ month end (with one exception to be stated later)
~~will not be available~~ Checks cannot be drawn on the last day of the month and therefore
 payments made after the second day of the month on a checking account will become available
 to the payee only on the first day of the following month.)

An exception are payments received from the sales of red dollars or other securities
 which will be credited to the checking account ^{immediately when} ~~on the same day~~ on which they are received.

Whoever has a red dollar holding is entitled to a green dollar loan from the Bank
 which is charged to his debit account in amounts up to the nominal value of his red dollar
 holding.

Only a fraction of the green dollar loans to which the red dollar depositors are
 thus entitled need in fact be taken up by them and green dollar loans on debit accounts
 will be granted by the Bank against securities other than red dollar deposits also. i.e.
 stocks, bonds, real estate, etc. The upper limit for green dollar loans which the Bank
 may grant on a debit account against securities is determined by the nominal value of
 each such security, where the "nominal value" is defined as the nominal value of the security
 a number of red dollars which
 has the same market value as the security involved.

Such green dollar loans may be taken up on a debit account at any time and may be
 repaid at any time but whenever a loan of this type is taken up a service charge will be
 made against the account. This service charge ^{is} a sort of initiation fee which is
 charged each time when a debit account is increased and its value is postulated to be

$$\Delta \text{ [scribble]} = \frac{p}{N} d'$$

where N is a number of basic periods per annum, p in the standard interest rate per annum
 charged on debit accounts, and ^{d' is the increment in debit} d' is a suitably chosen constant. [We shall later see
 that if d' were made very high, the total debit which business would take up at
 the interest rate of $p = p_0$ would be very large.]

Red dollars can be freely bought and sold against green dollars, via the Bank, on the
 open market except that there is a service charge of the sale of red dollars (as well as of
 stocks, bonds, ~~and~~ ^{and other capital assets} real estate) against green dollars. There is no service charge on the
 sale of stocks, bonds, real estate and other capital assets against red dollars. The
 service charge Γ is postulated to have a value of

$$\Gamma = \frac{p}{N} c'$$

where c' is the ~~market~~ ^{market} value of the red dollars ~~and~~ ^{(or other capital assets) sold and of}
~~is a constant~~ ^{is a constant for which}

The amount of red dollars deposited in any one red dollar account is not limited in
 any way. There is no limitation placed on the green dollar amounts held during the month
 on any one checking account ^{either} ~~however~~ but on the last day of the month, in the absence of
 instructions to the contrary the Bank will remove from any checking account the amount
 by which the account exceeds the corresponding ^{debit} account and for this excess green dollar
 amount the Bank will buy on the open market red dollars which it will credit to the

corresponding red dollar account. These red dollar purchases which the Bank undertakes automatically on behalf of its clients at the end of the month we shall call overflow purchases.

~~if so instructed the Bank will in lieu of making an overflow purchase will merely charge the service charge δ on the overflow amount~~

If so instructed the Bank will refrain from converting the overflow (in part or in whole) into red dollars and leave the overflow (in part or in whole) on the checking account, but ^{the Bank} will then make a service charge ^{0.9%} on that ~~part~~ part of the overflow which ~~is~~ ^{it} does) not converted into red dollars. Because of the provision $f = 0.9%$ it is cheaper to pay the service charge ^{the debit} than ad hoc to increase ^{the debit} by the amount the unconverted overflow (and pay the service charge) and to reduce the debit by the same amount after the first of the month, a transaction which ^{will} avoid the overflow purchase ~~or else the corresponding service charge~~ ^{would}

The overflow purchase could also be avoided by an ~~ad hoc~~ ad hoc increase in the debit by the amount of the "overflow" ^{at the end of the month} (and subsequent reduction of the debit by the same amount at the beginning of the next month. ~~However~~ This however would entail a service charge δ since we set $f = \delta$.

Similarly the overflow purchase could be reversed by selling ^{the red dollars bought} at the beginning of the following month the red dollars ~~brought in the~~ but this again would entail the same service charge $\delta = \delta$

Either of these evasions would be thus more expensive than buying the service charge $0.9%$

replacement 13

granted on the security is given by the nominal value of the corresponding red dollar amount.

Such green dollar loans on the red dollar deposits and other securities may be taken up at any time and may be repaid at any time, but a service charge amounting to perhaps three months interest (at the current interest rate on debit accounts) will be charged upon the granting of each new loan, i.e. an initiation fee, is charged each time a new credit is opened, which is proportionate both to the amount of the new loan and to the interest rate.

Red dollars can be freely bought and sold via the Bank on the open market, except that there is a service charge of perhaps one percent on the sale each red dollar sale. There is an equal service charge made also on the sale against green dollars of stocks, bonds, and other capital assets. But there is no service charge on the sale against red dollars of stocks, bonds, and other capital assets.

The amount of red dollars deposited in any one red dollar account is not limited in any way. There is no limitation placed on the green dollar amount held during the month on any one checking account. But on the last day of the month the Bank will remove from any checking account the amount by which the account exceeds his indebtedness to the Bank as shown by a corresponding debit account. The Bank will buy red dollars on the open market and will credit the red dollars so acquired to the corresponding red dollar account of the individual. These red dollar purchases which the Bank undertakes on behalf of its clients at the end of the month we shall call overflow purchases.

These overflow purchases are an essential feature of the two currency system; they make it possible to maintain the consistency of the circulation of green dollars in this system.

The service charges mentioned above must be set low enough so as not to hinder a single transaction that might be required in pursuance of legitimate trade. But at the same time it must be high enough to suppress the periodic recurrence of transactions is unnecessary from the point of view of legitimate trade and undesirable from the point of view of a satisfactory operation of the two currency system. The role of these service charges may be likened to that which friction plays in a mechanical system in dampening out oscillations. Because of these service charges the monetary situation of the two currency system will remain closely linked with the economic situation and it is this close linkage which makes it possible to secure the stability of the economic situation by means of ultimately automatically operating monetary mechanisms.

As we shall presently see the overflow purchases together with the service charges mentioned above will insure that the total of the debit accounts maintained by business will at any time be equal to the working capital (betriebskapital) which at that time is needed

Handwritten notes:
- *against* (written above 'red dollar deposits')
- *against* (written above 'other securities')
- *for i.e.* (written at top right)
- *lead on a debit account* (written above 'may be repaid')
- *to some fraction* (written above 'perhaps')
- *of the standard annual interest rate p.o.* (written above 'three months interest')
- *against green dollars* (written above 'Red dollars can be freely bought')
- *The amount of the service charge is given by 1/100 p.a. (1%)* (written above 'perhaps one percent')
- *either, or* (written above 'But on the last day')
- *in the absence of instructions by the working* (written above 'the Bank will remove')
- *For this excess green dollar amount* (written above 'The Bank will buy')
- *on the service charges made in lieu of them* (written above 'essential feature')
- *automatically constant* (written above 'maintain the consistency')
- *restrictions in the currency* (written above 'circulation of green dollars')
- *must have immediate results of red dollars bought in overflow purchases* (written above 'mentioned above')
- *4 and 17* (written above 'must be set low enough')
- *legitimate* (written above 'legitimate trade')
- *the must be set* (written above 'must be high enough')
- *recurrence of transactions* (written above 'periodic recurrence of transactions')
- *is unnecessary* (written above 'is unnecessary from the point of view')
- *undesirable* (written above 'undesirable from the point of view')
- *likened* (written above 'may be likened')
- *oscillations* (written above 'dampening out oscillations')
- *prev* (written above 'economic situation')
- *that because of the service charges* (written above 'together with the service charges')

by business for carrying on in the currently prevailing trade situation in the most economic fashion. We shall see that ~~more clearly~~ ^{clearer} by considering in detail in what manner a business will operate in face of the Spielregeln of the two currency system.

How Does A Business Operate

If a man wants to start a business, he must have certain amount of capital at his disposal, and let us assume that he has ~~it~~ ^{in capital of his own} in the form of red dollar holdings. At some time (preferably when the market price of red dollars is high i.e. when wages and prices of goods are low in terms of red dollars) he will sell ~~as much of~~ ^{part of} his red dollar holdings ~~as he needs~~ in order to purchase the goods and ~~pay~~ ^{pay} for the labor necessary for establishing a factory or if he is a dealer in consumers goods, he will spend a certain amount of red dollars in order to ~~purchase~~ ^{acquire} the necessary ~~amount~~ ^{part} of stock of goods. In addition to this initial expenditure he needs a certain amount of "cash" on hand to serve as his "working capital." This "cash" he ~~will~~ ^{may} obtain ~~by~~ ^{for whole or in part} borrowing green dollars against his remaining red dollar holdings and a ~~corresponding~~ ^{an equal} amount will then appear on his debit account, on which interest is charged at the current variable interest rate.

These initial expenditures the corporation may meet from its own funds (for instance by selling gradually part of its red dollar holding) and perhaps also in part from funds ~~borrowed~~ for the purpose. Such borrowed funds should take the form of long term loans on which a fixed interest rate is paid, such as for instance bonds which may be placed with the public etc.

When operating in this manner a business man is in reality operating with his own ~~capital~~ ^{capital} money. It should be noted that while interest is charged on his debit account at the same time interest is paid on the nominal value of his red dollar deposit. Because the two interest rates are (at least in normal times ^{Reps = RSD}) equal, the business man will in ~~per~~ fact not pay any interest. ~~He will receive interest as long as a nominal value of his red dollar account exceeds his debit.~~ In the limiting case when his debit becomes equal to his red dollar holding he will, in normal times, neither pay nor receive any interest.

As to the meaning of the possession of red dollars ~~I might be said in general that such possession represents the privilege of obtaining working capital free of interest (under normal conditions) or else the right of lending working capital to others at the current variable interest rate, such loans at variable interest rate ^{even though} are not given directly though but merely through the intermediary of the Bank.~~ ^{here}

A business man in this system is induced to keep a ~~sufficiently~~ ^{substantial} amount of green dollars on his checking account ~~and also to keep a sufficiently large debit account, in order to avoid the burden of paying service charges again and again in the course of the normal fluctuations in the operation of his business. If he kept a too low amount in his checking account and were to increase his debit from time to time whenever he had to make a large payment in green dollars, and were again to decrease his debit from time to time whenever he received large payments, he ~~will be~~ ^{would} be burdened by the initiation fee which is ~~charged on debit accounts~~ ^{charged on debit accounts}~~

*made in order to retain his work
he would have frequently to
the reverse bank*

charged each time he increases his debit. On the other hand if he kept a large sum on his checking account, but only a small sum on his debit account, he will be frequently caught by the overflow purchases of red dollars which the Bank would make on his behalf at the end of the month if his checking account exceeds his debit account. ~~And when ^{of course} at reconverting the red dollars ^{at the} the beginning of the following month in order to replenish his checking account, but he thus will be frequently ^{burdened} with the service charge accompanying the overflow purchases.~~ And finally if he kept an unnecessarily large amount on his checking account and in order to avoid overflow purchases, kept a correspondingly high debit, he would be burdened by the interest which is charged on debit accounts and which as we shall see later never falls below a certain minimum interest rate *100.*

A business will therefore tend to maintain both a checking account and a debit account just as high as is necessary ^{in order to be able} to meet current expenditures and at the same time to avoid excessive payments in service charges, ^{or interest payments.} ~~and the~~ business will respond to a change in the trade situation that necessitates an increase or permits a decrease of its working capital by increasing or decreasing its debit. Consequently the total ^{of} the debit accounts ^{will be} a measure of the working capital which the current ~~economic conditions~~ ^{business} situation demands and changes in this total will faithfully reflect changes in the ~~economic~~ ^{business} situation. *P* If an individual business makes large profits which it does not invest i.e. if it takes in more green money than it spends, its checking account will begin to overflow and the business will increase its capital in the form of an increasing red dollar holding. ~~If too many individual businesses try to save too much in this particular form,~~

Any profits which a business makes which remain unspent and undistributed will, ^{thus} if they are left to accumulate, after a while ~~the~~ automatically transform by means of overflow purchases into red dollar holdings. Later on if the business wishes to invest or to distribute ~~its profit~~ these accumulated profits, it can ~~of course~~ at any time sell these red dollar holdings. ^{their} The value ^{of these red dollar holdings,} as expressed in green dollars, ^{may have} ~~may of course~~ in the meantime ^{personally} have risen or fallen.

It should be noted that the price of ^{the} red dollars ^{with} should hardly ever fall appreciably below its nominal value because ~~of the right of the holder~~ ^{has the right} to borrow up to the nominal value, green dollars ^{on a debit account} against red dollars ^{at the current interest rate.} The price of red dollars ~~might~~ might on the other hand be appreciably above par, and if red dollars stand high, a business which accumulates profits in the form of red dollars increases its potential working capital (which is determined by the increase of the nominal value of its red dollar holding) at a ~~lower~~ rate which is lower than that at which the business corporation accumulates profits (which are determined by the market value of its red dollar holdings)

Insert 16 page: from page 3

expand

shift

Relationships between

Money Volume

Debit Volume

Red Dollar Volume

~~Relationships between~~

We shall assume for the sake of this presentation that both green and red dollars are printed in the form of certificates which may be kept both in the Bank or in the Central Bank but which are not released to the public. The Bank is obligated to keep one hundred percent coverage in red dollar certificates for red dollar accounts and one hundred percent coverage in green dollar certificates for green dollar checking accounts.

We shall designate the amounts carried on an individual checking account, debit account, and red dollar account ^{with} c, d, and r respectively. Similarly we shall designate the sum total of all such accounts with C, D, and R respectively. The total C we shall call "the money volume", the total D we shall call "the debit volume" and the total R (nominal value!) "the red dollar volume." As we shall see later automatic operations of the Central Bank will keep the money volume constant whereas the debit volume and the red dollar volume will fluctuate.

←
Shift to page 1

but merely through the intermediary of the Bank.

We shall assume for the sake of this presentation that both green and red dollars are printed in the form of certificates which may be kept both in the Bank or in the Central Bank but which are not released to the public. The Bank is obligated to keep one hundred percent coverage in red dollar certificates for red dollar accounts and one hundred percent coverage in green dollar certificates for green dollar checking accounts.

In the course of a normal operation of the two currency system we pick out a moment when there is a high level of employment ~~and~~ when the system is from a point of view of these fluctuations in a middle position. We postulate that in this middle or standard condition the red dollar volume $R = R_0$ is equal to the debit volume $D = D_0$ and that the Central Bank holds only a small amount of red dollars R^* where $R^* = \beta R_0$ where $\beta < 1$. We further postulate that in this standard condition the money volume $C = C_0$ corresponds to the total amount of green dollars in this system and that the Central Bank holds no green dollars.

According to the above the total number of red dollar certificates in the system is $R_0 + R^*$. The total number of green dollar certificates in this system is G_0 . In the standard condition we have $D = D_0 = R = R_0$, $D_0 = R_0$, $C = G_0$. We shall write $R_0 = \alpha G_0$ and subsequently we shall assume pour fixé les idées that $\alpha > 1$.

We shall see later that this standard condition is not maintained at all times because when some green dollar loans carried on debit accounts are repaid by the public to the Bank and the Bank returns to the Central Bank the corresponding green dollar certificates, the Central Bank will purchase red dollars on the openmarket against these green dollar certificates and thereby increase its red dollar reserve above the standard value of R^* . The total D of the debit accounts, the debit volume, will then fall below its standard value D_0 and the red dollar volume will also fall below the standard value R_0 . However we shall see further below under which the Central Bank operates, the system will oscillate around the standard condition and will from time to time return to it.

Operations of the Central Bank

If there is a trend toward trade shrinkage reflected by a decline in ~~the total~~ D of the debit accounts, the loan volume, by a certain value delta D there will also be an equal decline, delta C in the total C of the checking accounts (delta $C = \text{delta } D$). The Bank is then free to return to the Central Bank green dollar certificates in the amount delta C .

We postulate the rule that the Central Bank shall immediately purchase on the open market red dollars for this amount, delta C of green dollars. As a result of this purchase, the total of the checking accounts will rise by this same amount delta C , by which it had previously fallen, so that it will return to its previous volume. The money volume returns to its previous value within a day.

reserve of the C.B. is $R^* + R_0$

leave in

~~the right amount of interest~~

G_0

view

where $\beta < 1$

dollar reserve

C.B. holds no fresh dollars and the red dollar

the price of the dollar

think the rules under

within a day

rise

so that it will return to its previous volume

This activity of the Central Bank will continue as long as the loan volume keeps shrinking. During this period of time the Central Bank accumulates a fund of red dollars purchased at rising prices, while the total C of the checking accounts, ^{the money volume,} remains constant (except for the last days change which may have remained as yet uncompensated). During the same period the total D of the debit accounts, ^{the debit volume} falls from its original value $D = D_0$ to

~~to a value~~ $D < D_0$ "cash"

If subsequently the demand for ~~loans~~ ^{to the public} begins to rise the Central Bank will then sell red dollars from its previously accumulated fund, and it will do so at falling red dollar prices. The green dollars which the Central Bank so acquires will be loaned by the Central Bank to the Bank which will then be in the position of ~~granting the additional loans to~~ ^{providing the debit} ~~the public which are being requested.~~ ^{& the public} During this period of time in which the ~~loan vol-~~ ^{debits} ~~ume increases,~~ ^{revenue} the red dollar fund of the Central Bank diminishes, and ~~the total of the~~ ^{the money volume again} ~~checking accounts~~ ^{remains constant} (except for the last days change, which may however remain as yet uncompensated). This process comes to an end when the red dollar fund of

the Central Bank has fallen to R by which time the total D of the debit accounts has again risen to a value close to its ~~total~~ ^{standard} value $D_0 = R_0$. This total D of the debit accounts may not have returned however necessarily to exactly the original value $D = R_0$ it may be a trifle lower or a trifle higher, according to whether the Central Bank made a loss or a gain when it sold its red dollar holding. A minor adjustment which could be made annually and which as we shall see might for instance take the form of a partial refund of interest on debit accounts would take care of this point, and would bring D back to exactly its original value ($D = R_0$) and thus restore exactly the standard condition.

When the standard condition has been reached and if the demand for ~~loans~~ ^{increased debits} still persists the Central Bank will then ~~begin~~ ^{continue} to sell from its red dollar reserve which will ~~however~~ then begin to fall below the standard value R^* . When this takes place the Central Bank will begin to raise steeply the interest rate charged on debit accounts (in a manner that will be described later in detail) and by this device the ~~debit volume~~ ^{is} ~~can be kept~~ ^{in such a manner that it may} under control so that it will ~~never~~ ^{quite} reach the value $D = R_0 + R^*$

The Constancy of the Green Dollar Circulation

What we have so far said about the activity of the Central Bank guarantees that the money volume remains constant, but to what extent does it guarantee that the circulation of the green dollars remains constant?

Let us assume that due to some sudden and transitory ~~and~~ ^{there is a stretching of business} economic disturbance the debit volume suddenly begins to fall below its standard value and according ~~to~~ ^{to} the Central Bank begins to buy red dollars against green dollars. What will those who sell these red dollars to the Central Bank do with the green dollars they receive in exchange? Because of the ~~overflow~~ ^{injection at} purchases they will not use these green dollars just to increase their ~~holdings~~ ^{holdings} of green dollars i.e. they will ~~not~~

shrinkage of debt

green dollar holdings ~~since~~ (in a period in which there is a shrinkage of the debit volume ~~and they do not~~) it is not likely that they should need a larger amount of cash. They may use the green dollars which they acquire from the Central Bank either to diminish their debit account in order to save interest or to buy goods, for instance durable consumers goods, or they may use it to invest in which case a corresponding amount will be spent on ~~wages~~. In the first case their action results in a further reduction of the debit volume and accordingly a corresponding amount of green dollars ~~may~~ be sold by the Central Bank against further amounts of red dollars. In the second case there is an immediate increase in the money circulation in the full amount so spent. In the third case (since wage earners will spend a large fraction of their earnings on consumers goods) there ~~may~~ be an increase in the money circulation in almost the full amount so spent, but delayed by one month.

replace 12

We may say that ~~is so far as~~ the institution of the overflow purchases guarantees that ~~all~~ the green dollars which the Central Bank pumps into the economy (by means of red dollar purchases when as the result of the economic disturbance the debit volume begins to fall) a large fraction is spent for ~~the purchase of~~ ^{the purchase of} goods or for wage payments, then within a few months the money circulation returns to its standard value. ~~that the monetary deposit of one month is for a very long period corrected in the next month.~~ ^{that the monetary deposit of one month is for a very long period corrected in the next month.} The Issue of Free Certificates ~~is~~ ^{is} ~~corrected~~ ^{corrected} ~~in~~ ⁱⁿ ~~the~~ ^{the} ~~next~~ ^{next} ~~month.~~ ^{month.}

The economy grows, be it because there is a rise in population at constant per capita productivity or be it because, owing to technological progress, there is a rise in the per capita productivity at constant population. If the economy grows and the green dollar price of goods ~~ought~~ ^{are} to be maintained constant over long periods of time, during which there may be an appreciable growth of the economy, then it is necessary to increase the money ~~value~~ ^{volume} and the red dollar volume in step with the growing economy. This may be accomplished by printing annually additional red dollar certificates in ~~some~~ ^{some} amount

corresponding to the new standard $D' = R_0 + R_i$

which will increase the total amount of red dollars in proportion to the expansion of the economy during this particular year. Similarly green dollar certificates will be printed in the amount ~~$\frac{R_i}{100}$~~ ^{$\frac{R_i}{100}$} where ~~$R_i = (\alpha + \frac{R_i}{100}) G_i$~~ ^{$R_i = (\alpha + \frac{R_i}{100}) G_i$}

The Central Bank will sell a certain fraction of the new green dollar certificates R_x on the free market (just enough to get in return an amount of $\frac{G_x - 1}{\alpha} R_i$ green dollars) and the rest of the newly printed red dollars the Central Bank will freely distribute among the population (for instance in equal amounts per capita). In this way the Central Bank will then have available ~~$\frac{R_i}{100} + \frac{G_x - 1}{\alpha} R_i = \frac{G_x - 1 + R_i}{\alpha} R_i$~~ ^{$\frac{R_i}{100} + \frac{G_x - 1}{\alpha} R_i = \frac{G_x - 1 + R_i}{\alpha} R_i$} of green dollars i.e. just as much as the nominal value of the ~~r~~ is needed to cover the ~~expected~~ increase in the money volume that will occur when the debit volume rises ~~as it should by cap R~~ ^{as it should by cap R}. The debit volume is permitted to rise by this amount ~~since~~ ^{and} the interest rate on debit accounts will now be raised by the Central Bank only when its red dollar holding falls below the new standard red dollar reserve ~~of $R^* + \frac{R_i}{100}$~~ ^{of $R^* + \frac{R_i}{100}$} .

The new standard condition is now defined by:
 $D' = R_0 + R_i$; $C'_0 = G_0 + G_i$; $R^*_1 = R^* + R_i$; $(R_i = \frac{1}{100} R)$
 We have again as before $R'_0 = R$

The Interest Rate

The various interest rates fixed by the Central Bank follow a strict rule and must be so adjusted that the Central Bank shall at any time take in as much interest as it pays out.

The interest rate charged by the Central Bank on debit accounts we shall call p and its value in the standard condition, p_0 , has to be chosen with due regard to the customary profit margin of the normal business operation of the economy i.e. the interest rate p_0 should be plenty low enough to permit the carrying on of business operations with funds borrowed on debit accounts. *Under conditions similar to those prevailing here in the U.S.* We might imagine for instance that the interest rate p_0 might be fixed at something like 3 percent. -

The interest rate p charged by the Central Bank on debit accounts will automatically increase if the red dollar reserve ^(R_{CB}) of the Central Bank falls below its standard value ^(R^*) and with vanishing red dollar reserve ~~the~~ interest p will approach infinity. We postulate In particular we postulate we may for instance postulate for $R_{CB} < R^*$

$$p = p_0 \frac{R^*}{R_{CB}}$$

According to this formula p approaches infinity for vanishing red dollar reserve and for the standard value of red dollar reserve we have $p = p_0$ -

If the red dollar reserve of the Central Bank is above its standard value we postulate that the interest ^(rate) charged on debit accounts be the same as in the case of the standard condition i.e. we postulate for $R_{CB} > R^*$

$$p = p_0$$

On red dollar deposit the Central Bank will pay interest at the rate q

In the standard condition when the red dollar reserve of the Central Bank is R ^{*} the Central Bank will pay interest at the rate q_0 for which we postulate

$$q_0 = p_0$$

Since in the standard condition we have $D = R$, the Central Bank will ^(thus) in the standard condition receive ^($p_0 D$) an interest from debit accounts in toto exactly as much as it will pay in interest on the red dollar accounts, $q_0 R$.

If the red dollar reserve of the Central Bank is below the standard value the Central Bank will pay interest on red dollar deposits at ~~the rate of~~ approximately the rate of

$$(for $R_{CB} < R^*$) $q \sim p = p_0 \frac{R^*}{R_{CB}}$$$

The exact rate will be slightly higher and will be ~~computed~~ determined by the consideration that the interest paid on the red dollar deposits by the Central Bank in toto ^(qR) should be equal to the interest received in toto ^(pD) from debit accounts ^(pD) when the red dollar

reserve of the Central Bank is below the standard value R^* we have $D > R$ ^(R_{CB}) If the red dollar reserve of the Central Bank rises above the standard value ^(R) in which case we have $D < R$ the interest q paid by the Central Bank on red dollar deposit is postulated to be

$$(for $R_{CB} < R^*$) $q = p_0 \left(1 - \frac{R_{CB} - R^*}{R^*} \right) = \dots$$$

According to this formula the interest rate starts out in the standard condition with $q = q_0$, falls off linearly with increasing red dollar reserve of the Central Bank and becomes zero when the red dollar reserve becomes twice as large as the standard value R^* .

For larger red dollar reserves we postulate that the interest rate ^{of} remains zero.

When the red dollar reserve of the Central Bank exceeds the standard value R^* the rate of interest on red dollar deposits is lower than the rate of interest charged on debit accounts and even though the debit volume is smaller than the red dollar volume the Central Bank will ~~still~~ take in more interest from debit accounts ^(to which we have to add the im. fees.) than it will have to pay on red dollar accounts.

This difference will be ^{or we postulate,} currently paid out by the Central Bank in the form of an interest payment made to holders of ^{such} accounts for which $d > c$. The Central Bank will pay to holders of such accounts an interest ^{on} proportionate to the account difference ^{5d-c} as ~~shown~~ ~~recorded~~ shown by the record for the last day of each month at an appropriate interest rate s . This interest rate s is so chosen as ~~to wipe out completely the excess~~ of the Central Bank's income from the intake of interest on debit accounts over the interest payments ^{of the Central Bank} on the red dollar accounts, ^{and the service charges on}

Red dollar purchases (including uniform purchases and service charges ^{added in form of over flow payments})

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(In place of the formulae ~~as~~ given above we could consider as an alternative presentation the following and probably a better one

The following is:

for ~~all~~ $R_{CB} < R^*$

$$p = p_0 \left\{ 1 + \rho \left(\frac{R^*}{R_{CB}} - 1 \right) \right\}$$

where ρ is the price of red dollars (expressed in green dollars)

and $q \sim p$ (as before)

for $R_{CB} > R^*$

$$p = p_0$$

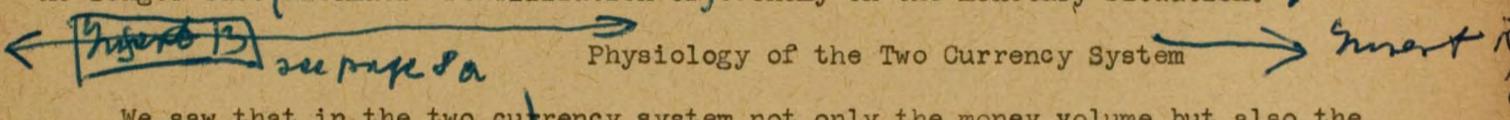
$$q = p_0 \left(1 - \rho \frac{R_{CB} - R^*}{R^*} \right)$$

The account difference

you

This device introduces at least potentially something like a negative interest rate into the system. Clearly ~~in the extreme case~~ for instance when the red dollar reserve of the Central Bank is ^{above 2R*} very large so that ~~practically~~ no interest is paid on the red dollar holdings we ^{must} have $d > p_0$. In that case a man who has a debit d and nothing on his checking account ($c = 0$) will receive a larger interest payment on his account difference $(d - c = d)$ than he will pay on his debit account. This amounts ^d to a negative interest rate. Such a situation will of course hold only if ~~the~~ ^{Res} ~~is~~ ^{is large} and ~~in practice~~ ^{need not occur}

It should be noted however that paying interest on the account difference works in the direction of stability because it encourages spending at a time when the debit volume is too small. It should also be noted that the interest charged on debit accounts has in this case still its standard value i.e. $p = p_0$ so that a man ^{who} increases his debit but ^{holds} the cash by leaving it on his checking account still carries a full burden of the interest rate p_0 on his ~~debit~~ ^{debit}. This is as it should be; for if ~~we~~ ^{we} permitted the interest charged on debit accounts to fall to zero with increasing red dollar reserve on the Central Bank (i.e. with shrinking debit volume) ^{them} we would destroy the close linkage between debit volume and general business activity and could no longer base ^{the} (automatic stabilization of) ^{the} economy on the monetary ~~situation~~ ^{factors}.



We saw that in the two currency system not only the money volume but also the money circulation is maintained constant ^(at least in the sense explained above) and in precisely what sense this is so. We still have to discuss how this constancy of the money circulation is related to the changes in the market price of red dollars. ^{We shall see later that} As a matter of fact the above give the rules for the interest rates fixed by the Central Bank have the main purpose to minimize the price fluctuations of red dollars which accompany the ^{are} fluctuations of the economy and which are forced on the market by the very condition of the constancy of the money circulation.

Inventory Cycles

Let us consider for example to begin with an economy which is not expanding. Let the population be stationary and let there be no technological advance that could lead to new investments. Let us ^{assume} the economy is in the standard condition. At a given instance part of the population spends less than it earns and saves for instance by buying red dollars and the rest of the population at this same instant spends ~~the~~ more than it earns, it dissaves by selling red dollars. The price of red dollars is we assume not changing at this time.

Let there be ^{now there is} no disturbance consisting in a change of attitude on the part of the dealers who, perhaps in a mistaken anticipation of falling green dollar prices begin to sell goods from ~~their~~ stock without replenishing their stock.

10 *Warrant on value of*

Let us consider now a given economy which operates under the two currency system in which we have full employment and a certain money volume G , and for which we have fixed the interest rate $p = p_0$ at a reasonable value for the standard condition in which we the red dollar reserve of the Central Bank is $R_{CB} = R^*$

Let us ask ourselves now how high do we have to set the value R_0 in order to have R_{CB} oscillate around a point very close to the standard value R^* Clearly the value

of $\frac{R_0}{G_0}$ for which this will be the case must depend on the value which we set for $\delta = \delta$

The higher we set δ the higher will be the debit volume that business would wish to carry at the interest rate of $p = p_0$. We shall therefore by setting δ high enough

always be able to make $R_0 > G_0$

On the other hand if δ were made very low, the debit volume that business would want to carry at the interest rate of $p = p_0$ would also be very low. ~~There is of course a~~

~~practical limit below which we may not fix~~ We cannot make δ too low however, for we must keep it high enough to ~~prevent~~ *dissuade* the hoarding of cash in times when the ~~green-dollar~~

price of red dollars is falling. ~~Subsequently we shall on occasions assume for the~~

purpose of ~~presentation~~ *his* that for some value of δ which is ~~higher than the~~ *still* the lowest permissible value we have $R_0 = G_0$

This special case is in some ways ~~simplest~~ *the* and for this reason certain parts of the following discussions will be based on it. ~~Otherwise no particular significance~~ *must* be attached

to this special case. ~~otherwise.~~ *otherwise.*

Separation of the Accounts

We separate all accounts into two classes \rightarrow business accounts and private *consumers* accounts.

We assume that no expenditure for purposes of consumption are ~~made~~ charged to business accounts. A private person who owns a business or a share in it will have his share of

the profits, whole or in part, transferred to his private account (distributed profit) and

~~may~~ then spend the distributed profit whole or in part for ~~purposes of consumption.~~ *the purchase of consumers goods.*

Physiology of the Two Currency System

We saw that in the two currency system not only the money volume but also the money circulation is maintained constant, (in the sense explained above) We still have to discuss how this constancy of the money circulation is related to the changes in the market price of red dollars, which in ~~sense and force~~ enforce the constancy of the money circulation.

Inventory Cycles

Let us consider for example to begin with an economy which is not expanding. Let the ~~pop~~ population be stationary and let there be no technologic_{al} advance that could lead to new investments. ~~Let us further assume the economy is~~ in the standard condition. At a given instance part of the population spends less than it ~~earns~~ ^{earns} and saves, for instance by buying red dollars, and the rest of the population at this same instant spends more than it earns, it dissaves by selling red dollars. The price of red dollars is we assume not changing at this time. ~~and the system is~~

Let there now be a disturbance consisting in a change of attitude on the part of the dealers who, perhaps in a mistaken anticipation of falling green dollar prices begin to sell goods from stock without replenishing their stock.

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circled and underlined text: "in the standard condition. At a given instance part of the population spends less than it earns and saves, for instance by buying red dollars, and the rest of the population at this same instant spends more than it earns, it dissaves by selling red dollars."

If this happens the dealers will begin to accumulate green dollars on which they receive no interest and for which they have no need in their business. They will therefore begin to use this unnecessary cash to reduce their debit on which they have to pay interest at the rate p_0 . ~~By such action the money volume will temporarily fall below its standard value C .~~ The excess green dollar certificates no longer needed by the Bank for 100 per cent coverage will then currently be transferred by the Bank to the Central Bank and the Central Bank will then currently purchase for the incoming green dollar certificates red dollars on the open market. ~~We thus enter on a period in which the red dollar reserve of the Central Bank rises and the price of red dollars rises.~~ At the same time while the interest rate on debit accounts remains the same, p_0 , the Central Bank will begin to pay interest ^{at a rate d which is} increasing with increasing red dollar reserve of the Central Bank on the individual account differences $d - c$.

Dealers who do not decrease their debit but ^{rather} allow green dollars to accumulate on their checking account will gradually begin to have more money in their individual checking account than ^{the amount} ~~the amount of the debit as shown by their individual debit~~ account and at the end of each month the Bank will purchase on their behalf red dollars in favor of their ^{corresponding} ~~individual~~ red dollar account. These overflow purchases together with the ~~ever red dollar purchases of the Central Bank~~ will contribute to the price increase of the red dollars during this period, ~~decreased buying on the part of the dealers.~~ ^{decreased by sale} A rise in the price of red dollars means that the savings of the customers have increased in purchasing power. A certain fraction of the red dollars purchased by the Central Bank during this period and a certain fraction of the red dollars bought by the dealers ~~are—on or on their behalf by the Bank) during this period is being sold by consumers who wish to buy goods which in terms of red dollars are now cheaper than they were before.~~ ^{use the proceeds to} (Other consumers who assume that the price of red dollars will increase still further and who wish to speculate might prefer to borrow green dollars on their red dollar deposits and then purchase durable consumers goods with these borrowed dollars.)

A shrinkage in the total of the checking account of the dealers which will accompany such a period has the automatic consequence of a rise in the total of the checking accounts of the consumers since ^{is always} the money volume remains constant throughout this period. ~~Since money does not circulate as fast~~ in the two currency system on the checking account of any dealer than in the checking account of the consumers but since there are dealers (durable consumers goods) on whose checking account money circulates at a slower rate ^{it follows that a slackening of trade such as we are here discussing, in which the debit volume and the total of the checking accounts of the dealers falls} ~~is not~~ accompanied by a slowing of the money circulation rather the money circulation remains constant or rises with falling debit volume.

We might say that a slowing of trade such as we are here discussing will be accompanied in the two currency system in a certain sense by a fall in prices; the

at increasing rates and by such operations maintain the money volume close to C
 d which is
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and the total of the checking account of the consumers rises
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 prices will fall in terms of red dollars and they will fall immediately but they need not fall in terms of green dollars. Dealers who continue to replenish the ir stock and sell to the public may continue to do so at ~~essentially~~ *unchanged* prices in green dollars and make their *usual* profit. This circumstance together with the inducement of the interest paid on the individual account difference $d - c$ *which* gives dealers an *advantage* who *induce -* diminish their cash *and resume their purchases as purchases are resumed the* trend of decreasing debit volume and increasing red dollar reserve of the Central Bank *will be reversed.*
(expand ~~debt~~ in debt) →
 Investment

We shall now assume that for instance owing to sudden improvements in technology, it would be profitable to invest *by* creating new production facilities. Before discussing the impact of investment on the two currency economy we must be clear about the fact that there is no law of nature known that establishes an automatic correlation between the willingness *to invest* of the public to invest and the *desire* willingness of the individualist who compose the public *to save* i.e. to spend less than they earn *in a corresponding degree.* Accordingly we shall deal separately with three prototypes of eventualities. a. the public is willing to invest and this willingness of the public is fully matched with *the desire* the willingness *of the individualist* to save. b. the public is willing to invest but *the individualist* *is* ~~are not correspondingly willing to~~ comparatively reluctant to save and c. the public is reluctant to invest, but *the individualist who compose the public are* eager to save.

a.) Let us again assume that we start out with the standard condition *as outlined* ~~postulated above~~ under *the* previous *chapter dealing with* inventory cycle, in which there was no over all saving and no investment. Let us assume that the average income of the consumer amounted to 100 *units* per month and that 100 unit s per month were spent for the purchase of consumer goods. Let us now compare this state of affairs with one that will pertain if out of the total income of the consumers 20 units are used every month for investment, [for instance for buying bonds of industrial corporations which are currently issued and the purchase price of which is currently used for new construction.] The income of the consumers will then amount to 120 units per month out of which 20 is saved and 100 (that is exactly as much as before) is used for purchasing consumers goods. Let us assume that total employment has not significantly risen and that there was a shift of employment from the consumers goods industry to the capital goods industry in the amount of 10 per cent. We assume that correspondingly the output of the consumers goods industry has dropped by 10 per cent. The average wage will then have risen *from* in the ratio of 100 to 120, the prices of consumers goods have risen from 100 to 100 *over* *90* *by the factor* *90* *11* and the real wage has risen in the ratio of 120 divided to 100, *11* *11.11*

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We compare a stationary situation in which there was no investment, (full employment, in which ^{all} profits were distributed and the total private income was used for the purchase of consumers goods (i.e. a situation in which ^{all} cash on private accounts was turned over once a month) with another stationary situation state which is as follows:

~~all profits are distributed~~, of the total income of private accounts 90 percent are spent on the purchase of consumers goods and 10 percent are spent on the purchase of red dollars (or industrial bonds or newly issued stocks) and this amount is currently invested i.e. spent for wages and the purchase of capital~~ist~~ goods. Employment in the consumers goods industry is 10 percent lower than before i.e. by the amount of employment which is now taken up by the capitalist goods industry. The output of the consumers goods industry has correspondingly fallen by 10 percent. The price of consumers goods remains unchanged, the price of red dollars remains unchanged, the red dollar reserve of the Central Bank remains at a ²⁰ standard value and accordingly the interest rate on debit accounts remains at its standard value of $p = p_0$.

The wage level has not changed nor have real wages ~~changed~~ ~~nor has the wage level changed~~.

The income, ^{money} credit volume and debit volume of the consumers goods industry has fallen by 10 percent i.e. by the same amount by which income, ^{money} credit volume and debit-volume of the capitalist goods industry has increased. ^{TP} The situation just described represents ^{an investment-}

in which the desire to invest ~~and the desire to save~~ is perfectly matched by the desire to save.

Under ^{otherwise} similar conditions, but with a smaller desire to save, we may have a ^{period} period of investment similar to the one described above with the only difference that the market price of red dollars is lower than during the previous pre-investment period so that the resulting suppression of dissaving compensates for the lesser desire to save.

b. Let us now consider a situation in which all income reaching private accounts is spent on consumers goods prior to the investment period and in which this remains so even during the investment period. We assume that there are investment opportunities and that some people whom we shall call investors ^{are in possession} dispose of red dollar holdings (or other capital assets) and are determined to invest by creating new production facilities. We assume that as they begin to sell red dollars to obtain the necessary cash, the red dollar price will fall to par and below par ^{in the absence of any willingness to save on the part of the consumers} Rather than ^{is} sell below par the investors will then use their red dollar holdings as security and take up more and more green dollar loans on debit accounts, which they can do up to the nominal value of their red dollar holdings. ^{during this period} While the investors

increase their debit, the red dollar reserve of the Central Bank will be below the standard value R and the interest rate will ^{have} rise to some value $p > p_0$. We may thus have during this investment period quasi-stationary state in which the debit of the investors constantly rises and the debit of the rest of the economy constantly shrinks (at the same rate). The amount spent for the purchase of consumers goods remains the same as it was prior to

might be lower, say $\frac{1}{10}$ percent, i.e. by the number of those employed during the investment period in the capital goods industry. According to the output of the consumers goods industry is reduced by $\frac{1}{10}$ percent the price level of consumers goods is increased by $\frac{1}{10}$ percent, the wage level is unchanged, but the real wages have dropped by $\frac{1}{10}$ percent. This process of investment, in the face of public reluctance to save, cannot go on indefinitely and the maximum amount that can thus be invested is given only slightly above $R_0 = D_0$ by a value of about $\frac{1}{10}$ because after the total original debit volume has been transferred to the investors the red dollar reserve of the Central Bank ^{will} must begin to approach zero and the interest rate accordingly will approach infinity. — Explain more.

c. We shall now consider what happens if the peoples eagerness to save is not matched by its willingness to invest. We may start out by assuming that there was a period in which willingness to ~~invest~~ ^{spend up} and willingness to ~~save~~ ^{invest} were perfectly matched and there is now suddenly a decrease in the ~~willingness~~ ^{spend} to invest. It is then possible that we shall again have a stationary stage in which the price of red dollars is higher and ~~the~~ the resulting encouragement to dissave will then again bring the willingness to ~~invest~~ ^{to spend} at ~~the~~ ^{level} in harmony with the willingness to ~~save~~ ^{invest}.

It is however also possible, for instance if there is no possibility of investment but great eagerness to save, that we shall have a non-stationary solution in which there is a continuous ^{with} increase in the price of red dollars. During such a period which ~~might~~ ^{could} be of ~~infinite~~ ^{unlimited} duration the green dollar circulation will be ~~maintained~~ ^{be just fast enough to} constant and the ~~our~~ increase in the red dollar price will encourage dissaving sufficiently to make the total saving of the economy ^{zero} (in the absence of any opportunity or willingness to invest) ~~to~~ ^{with} ~~the~~ ^{is just right}

P In such a situation there might be a danger of a deterioration in the distribution of red dollar holdings in the sense that the nominal value of the great majority of the red dollar holdings of the consumers might approach zero. of the great transfers

Such a deterioration in the distribution of red dollar holdings ^{could} might ~~however~~ be prevented by a ^{flat} capital gains tax imposed on all red dollar holdings, the proceeds of which would be distributed in the form of a per capita bonus. The tax would be zero unless there is a rise in the market price of red dollars. [The tax could be either proportional to the capital gain $\Delta p \cdot r$ or it could be equal to $\frac{\Delta p}{p} \cdot r \cdot (1 -)$

X It should be noted that the purpose of this tax is not to prevent a continuous increase in the price of red dollars but rather to permit such an increase without permitting a steady increase in the nominal value of the red dollar holdings in a sub group of the population.

its checking a
increase its capital in the form of an
individual businesses try to save too much in

of rise in red dollar prices and the price of other red dollar
assets such as stock of industrial corporations and real estate will presumably also
rise during such a period. If too many individual businesses try to save too much in
this form out of their profits, the book value of their assets will increase as fast or
faster as do their profits. But the working capital which they could obtain on the
debit account against these assets is determined by the nominal value of their red dollar
holding and will therefore increase slower than the market value of these holdings which
they represent their unspent green dollar savings.

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