

# **THE PROBLEMS OF GLOBAL ECONOMIC RECESSION, CASH CRUNCH AND HYPERINFLATION CAN BE RESOLVED THROUGH EXCLUSIVE IMPLEMENTATION OF E-CURRENCY SYSTEM**

## **Introduction:**

The recent crisis occurring in the United States economy with its global fallout has led me to present my views in this paper which is a sequel to my earlier article titled “NEED FOR ELECTRONIC-CURRENCY SYSTEM”, published in ‘The Global Strategy Forum of World Future Society, U.S.A. This paper is an application and operationalization of my ideas on electronic currency system as a substitute to the traditional cash currency system which is facing obsolescence creating an exchange void leading to the unseen problems showing their head here and there every now and then.

To a large extent, the present crisis is an outcome of the ‘technological lag’ created due to the stress and strains between the required exchange mechanisms and the exigencies arising in the economic system. In my view, looking to the dynamism of the economy the currency system as an effective exchange mechanism should also undergo a drastic transformation. Replacement of traditional currency system by the electronic currency system has become a dire necessity of the day which could help immensely in easing out this crisis to a very great extent. The present paper is an exercise in this direction focused in particular to the problems of economic recession, cash crunch and hyper-inflation<sup>1</sup>.

Unlike the traditional paper currency system where either the money is held by the bank as a deposited amount or possessed by the individual concerned who enjoys its liquidity exclusively which makes the money available exclusively either to the bank or to the individual concerned.

The strength of the *e-currency system* lies in the fact that the money is possessed by the bank and simultaneously available to the individual also as liquidity for use i.e., *duality in pocket*.

The Global economy of the world today is subjected to a perpetual crisis of inflation, black money generation and its shadow transactions, leading to menacing poverty and outwitting economic crimes. Peoples, nations and societies trying hard to come out of such pathological economic situations but, despite all efforts till now there are no significant signs of remedy. The fact is that more the efforts in terms of traditional measure are put in, more the stranglehold of this cobweb grows. In the recent past, we have seen how the countries like Germany, Russia, India and many other countries have experienced the sting of such a crisis in their economies and in order to remedy it tried to inject many a changes like change in their currencies either in terms of devaluing or altering it in totality. Very recently, the case of economic crisis in United States of America and its fall out globally is a well known history. The case of hyperinflation in Zimbabwe is another example where in order to compensate for the ultra devaluation of their currency, the Zimbabwe Government had no alternative but **to introduce \$25000 million currency note** to facilitate the market transactions with in their economy. In my opinion, such a perpetuating disease of inflation and handling of it with the help of traditional tool of currency i.e., fiat paper currency system has rendered itself completely out of gear and become obsolete. In this post modern cyber age of our history the time has come to bring in a revolutionary change in our institutional mechanisms of economic transactional systems, i.e., a paradigm shift by replacing the amorphous traditional fiat paper currency system to bank centric electronic currency system which could consolidate the transactional mechanisms into a more focused and centralized one. Introducing the transactions through plastic currencies like credit card/ debit

card etc is no viable substitute for the paper currency system for instead of coping up with the traditional hazards they produce new difficulties like cloning of credit cards, copying their numbers and other related cyber crimes creating distrust among the people.

I have devised a new currency system<sup>2</sup> called “*e-currency system*”, whose prototype and software is in the process of getting patented. This *e-currency* system can ease out this difficult situation for it has a holistic approach carrying diversified and centralized transactions in the same ambit and one focus. The entire money is operated through the bank on one hand and simultaneously the liquidity is available to the individuals, thus giving it the form of one composite unitary system.

In fact instead of looking at “inflation” as problematic the *e-currency* system is vigorous enough to view it positively as a part of the economic process capable of accelerating economic growth and prosperity immensely.

The present paper highlights and illustrates as to how the proposed *e-currency* system can cope with the problem of global economic recession, cash crunch and inflation and its fallout in society effectively.

I have tried to explain and illustrate through the balance sheets of the different sectors of the economy individually and consolidated with the help of constructed equations. The balance sheet method is preferred, for with its help every movement in the economy at different stages can easily be watched and explained.

It may be reiterated here again that the major difference between the traditional paper currency system and the e currency system lies in the fact that while the traditional paper currency system forms a very loosely structured transactional system where different parts have many discontinuities so as to render it beyond effective controls. *The e-currency system* enables the economy put in a highly structured and closed system where a perfect transactional cycle is operative without leaving any space for any leakage or discontinuity in the transactional processes.

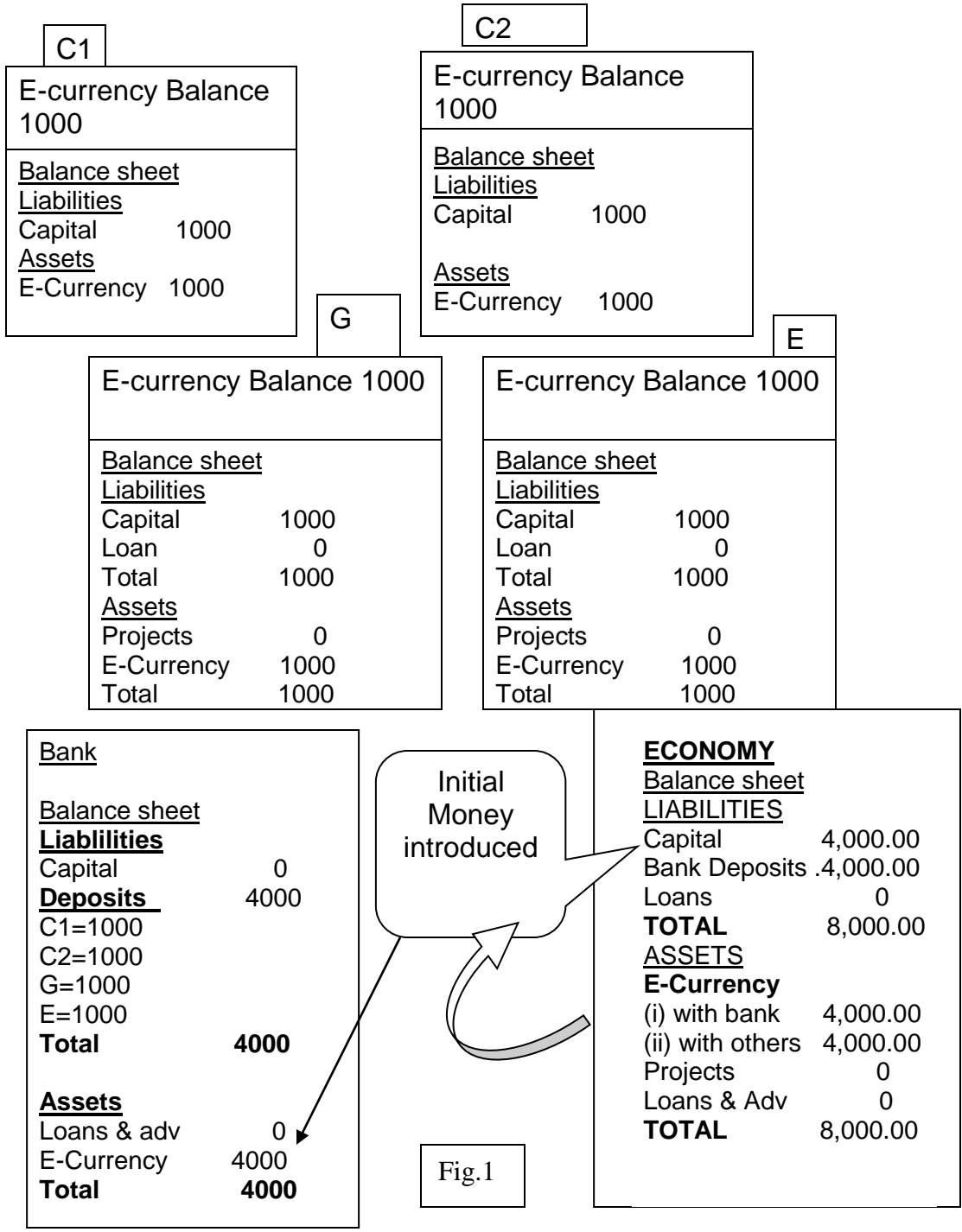
In the First Phase, I have tried to explain with the help of Fig. 1 to Fig. 15, how exclusive implementation of *e-currency* can create (i) duality in pocket i.e., money being simultaneously held by Bank as well as other sectors of the economy, (ii) income cycle with the potency of infinite rotation, (iii) the initial *e-currency* introduced remaining constant and intact all the time, (iv) solution to the problem of cash-crunch, economic recession, hyper-inflation and other socio-economic crimes, (v) Real wealth creation, (vi) employment opportunities, (vii) Income cycle remaining unaffected even without usury and taxes, (viii) System created money, (ix) bank doing only book entries keeping parallel records of all the transactions. Fig. 16 and 17 explains how '*e-currency system*' is effective in the case of international trade deficits as compared to paper currency system. In the Second Phase, I have tried to explain, through mathematical equations, how, in *e-currency system*, there is no adverse inflationary effect with intrinsic value of money being equivalent to its face value. In the Third Phase, I have tried to substantiate my claims regarding advantages of *e-currency system* with the help of accounting Balance Sheets of different sectors of the economy.

### **First phase:**

Let us imagine an economy, where there is exclusive *e-currency system* with only two citizens (C1 and C2), one Government (G), one entrepreneur (E) and one Bank. To start with, each of the constituents of the economy is holding 1000 units of *e-currency* totaling to 4000 units all deposited with the bank. Fig. 1 to Fig. 17 are showing the respective balance sheets of C1, C2, G, E, Bank and their consolidated position in the Economy Balance Sheet. Initially, there are no projects and loans. The explanations are mentioned in the figures themselves.

From these figures, we can see that with the help of *duality in pocket* in “*e-currency system*”, in four rotation of income cycle, real wealth, consisting of public and private projects, are created from 0 to 16200 creating new employment opportunities tending to 100% employment. *E-currency* in circulation in the economy is increased from 4000 to 14350, still there is no monetary inflation as this 14350 is at the same time deposited with the bank, making the intrinsic value of money at par with the face value. Hence no devaluation. Per capita income of the citizens (C1, C2 and E) is increased from 1000 to 4350 (Sum total of capital of C1, C2 and E divided by three i.e.,  $13050/3$ ) increasing the standard of living and purchasing power of the citizens. National Income is increased from 4000 to 19500. Bank started giving loans from the initial deposits of 4000. The bank loans are increased from 0 to 12600, still the amount available with bank for further financing is 4000 (the initial introduced amount remaining constant all the time) that means bank can give finance at easy rates to the entrepreneurs for meeting the new demands of the various projects as the purchasing power of the people is increased. That means no fear of cash crunch. As every movement of monetary transactions are recorded in the bank’s

computer. The problem of terrorism can easily be solved because the root cause of terrorism is unidentified flow of funds. If suppose some people default in paying their loans back to the bank, still there will not be any cash crunch for bank, as the initial amount at the time of introducing the *e-currency system*, the 4000 in the given example, will always be available with the bank for further financing for infinite number of times. That means banks will not become insolvent because of non-performing assets. Of course banks are supposed to take utmost care while granting loans for reaping the maximum profits.



C1	C2	G	E
EC. Balance 500	EC. Balance 1500	EC. Balance 1000	EC. Balance 1000
<u>Balance sheet</u>	<u>Balance sheet</u>	<u>Balance sheet</u>	<u>Balance sheet</u>
<u>Liabilities</u>	<u>Liabilities</u>	<u>Liabilities</u>	<u>Liabilities</u>
Capital 500	Capital 1500	Capital 1000	Capital 1000
		Loan 0	Loan 0
		Total 1000	Total 1000
<u>Assets</u>	<u>Assets</u>	<u>Assets</u>	<u>Assets</u>
E-Currency 500	E-Currency 1500	Projects 0	Projects 0
		ECurrency 1000	ECurrency 1000
		Total 1000	Total 1000

Since the money at any point of time is both with the bank & the citizens/ Govt., therefore there can never be any liquidity crunch. In the given example, money is, simultaneously, both with the holder of ECM (Electronic Currency Machine) [ C1= 500, C2= 1500, G= 1000 & E= 1000] and with the Bank = 4000. Therefore, the holders can use their owned amount, mentioned in their ECMs, any time. Since the money, the cash, is in the form of electronic blips, there is no need to go to bank for withdrawal of cash as in the present days' paper currency system. In the example we have illustrated that C1 has transferred 500 e-currency to C2 by just pressing buttons of his ECM. Bank has just done the necessary book entries by updating the C1 and C2 accounts with the transaction amount. Now, since, nobody will ever approach bank for withdrawal of funds because the entire money holding with full liquidity will always be with the holder of ECM, therefore bank can easily use all the 'e-currency in hand' for debt-financing without worrying for any kind of reserve ratios. This parallel money holding with 100% liquidity and ownership is called "Dual-Pocket" with bank as well as with other sectors of the economy.

<u>Bank</u>	
<u>Balance sheet</u>	
<u>Liabilities</u>	
Capital	0
<u>Deposits</u>	4000
C1=500	
C2=1500	
G=1000	
E=1000	
Total	4000
<u>Assets</u>	
Loans & adv	0
E-Currency	4000
Total	4000

Fig. 2

<u>ECONOMY</u>	
<u>Balance sheet</u>	
<u>LIABILITIES</u>	
Capital	4,000.00
Bank Deposits	4,000.00
Loans	0
<b>TOTAL</b>	<b>8,000.00</b>
<u>ASSETS</u>	
<b>E-Currency</b>	
(i) with bank	4,000.00
(ii) with others	4,000.00
Projects	0
Loans & Adv	0
<b>TOTAL</b>	<b>8,000.00</b>



C1	C2	G	E
Balance 500	Balance 1500	Balance 3000	Balance 1000
<u>Balance sheet</u> <u>Liabilities</u> Capital 500  <u>Assets</u> E-Currency 500	<u>Balance sheet</u> <u>Liabilities</u> Capital 1500  <u>Assets</u> E-Currency 1500	<u>Balance sheet</u> <u>Liabilities</u> Capital 1000 Loan 2000 Total 3000  <u>Assets</u> Projects 0 ECurrency 3000 Total 3000	<u>Balance sheet</u> <u>Liabilities</u> Capital 1000 Loan 0 Total 1000  <u>Assets</u> Projects 0 ECurrency 1000 Total 1000

Because of 'dual-pocket' nature of 'e-currency', the initial money, 4000 in the illustration will remain constant with bank, no matter how many times bank give this 4000 as advance, still the e-currency in hand with bank will always be 4000. That means infinite rotation of "Income Cycle".

<u>Bank</u>	
<u>Balance sheet</u>	
<u>Liabilities</u>	
Capital	0
<u>Deposits</u>	6000
C1=500	
C2=1500	
G=3000	
E=1000	
Total	6000
<u>Assets</u>	
Loans & adv	2000
E-Currency	4000
Total	6000

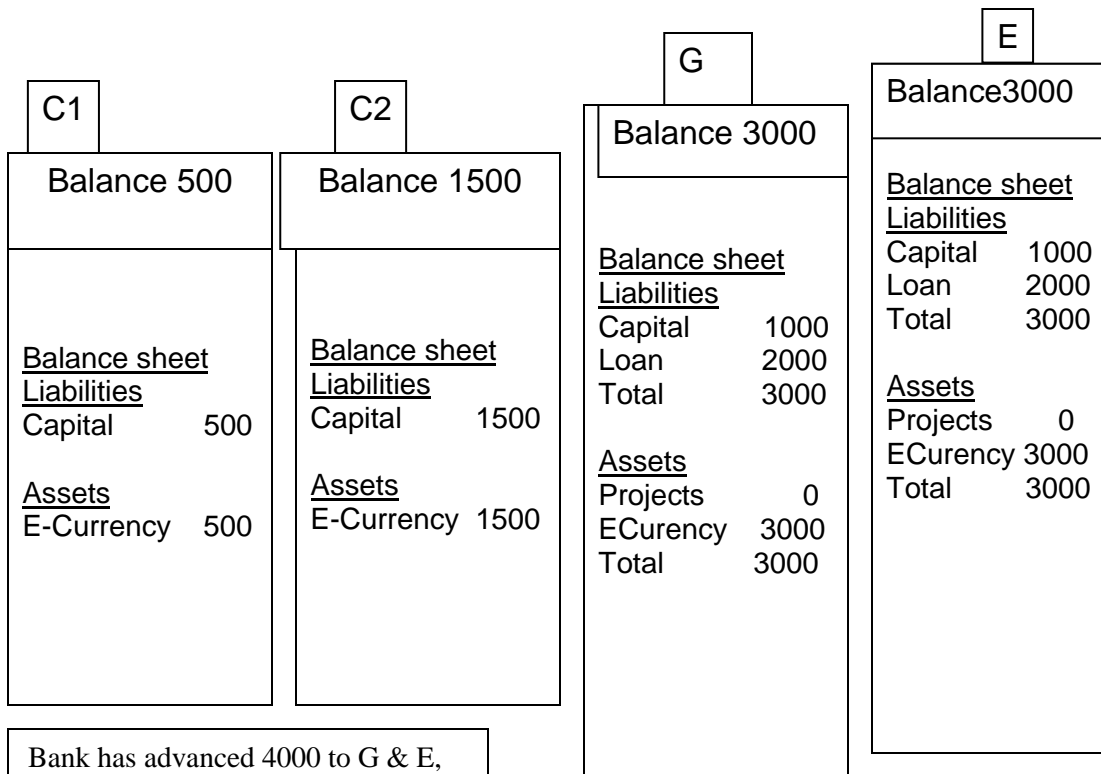
Loan  
2000 to  
G

Debt-financing  
technique gets  
initiated here

E-currency in  
hand with bank  
after the loan  
of 2000 is still  
4000 the initial  
money  
introduced as  
e-currency.

<b><u>ECONOMY</u></b>	
<u>Balance sheet</u>	
<u>LIABILITIES</u>	
Capital	4,000.00
Bank Deposits	6,000.00
Loans	2,000.00
<b>TOTAL</b>	<b>12,000.00</b>
<u>ASSETS</u>	
<b>E-Currency</b>	
(i) with bank	4,000.00
(ii) with others	6,000.00
Projects	0
Loans & Adv	2000.00
<b>TOTAL</b>	<b>12,000.00</b>

Fig. 3



Bank has advanced 4000 to G & E, but still, the net e-currency holding with the bank is 4000, ready for further financing. There is no inflationary pressure as the money in circulation is equal to the money as deposits with bank.

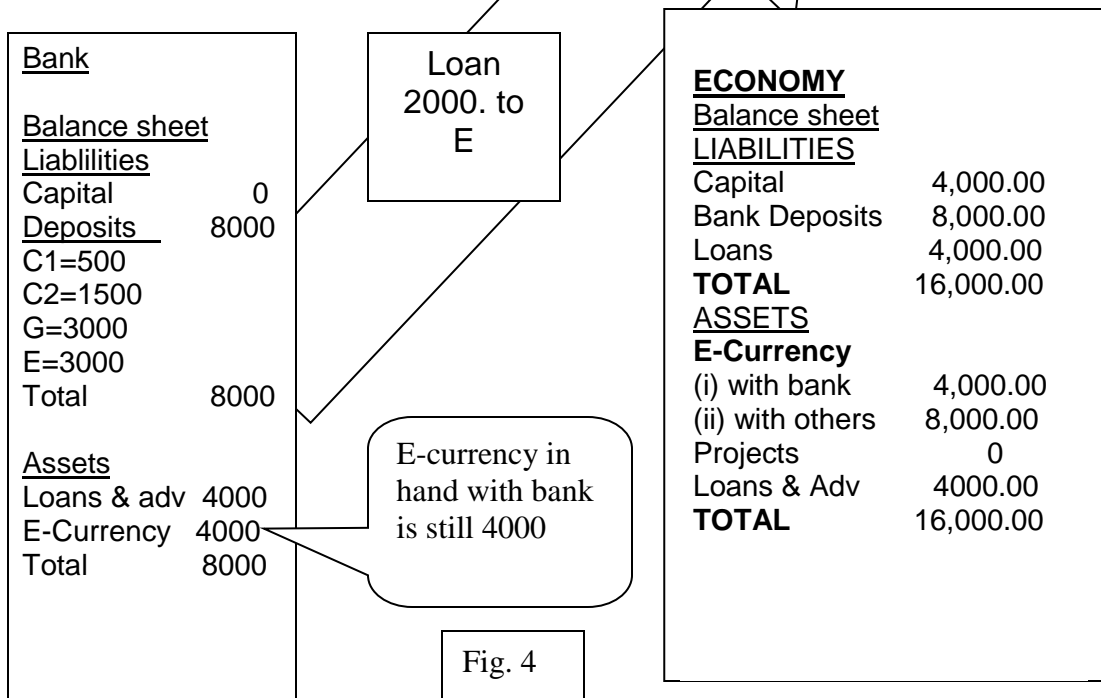
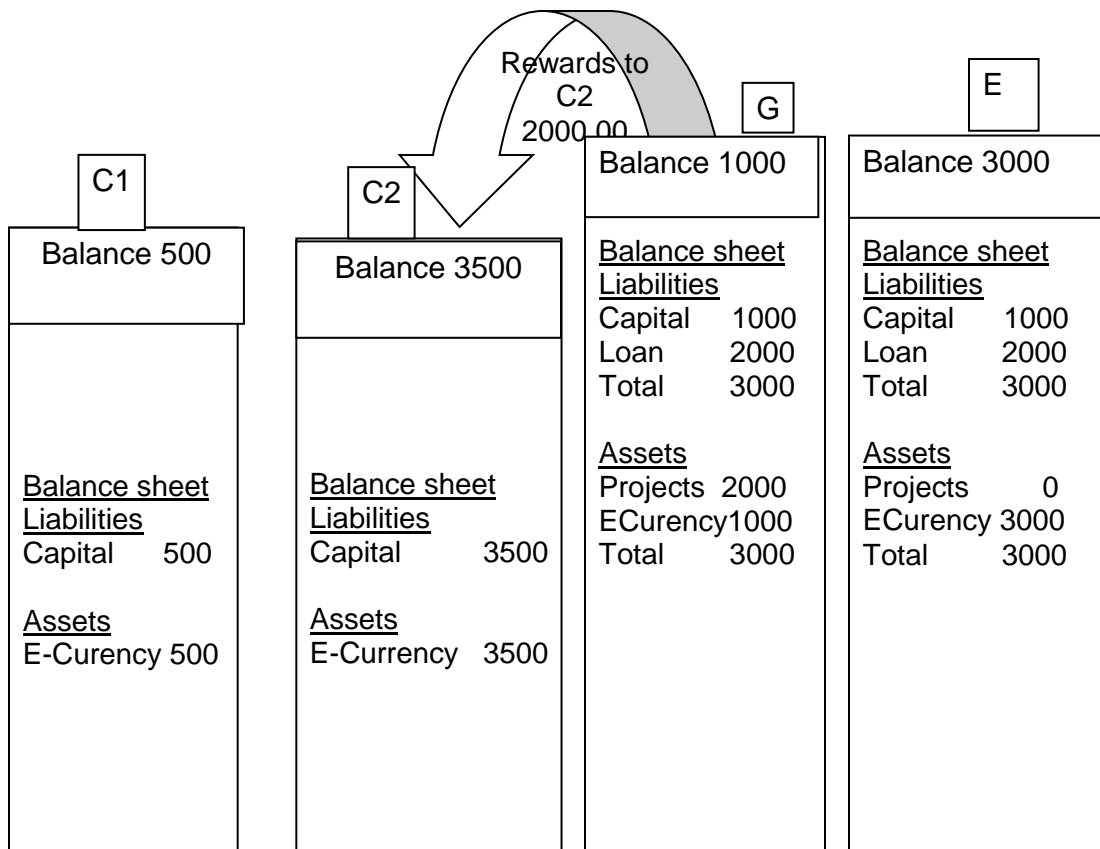


Fig. 4



1. Thus the first income cycle is created. (from C1, C2, G, E, to Bank to G & E to C1 & C2 and to Bank.
2. Income Cycle rotation has resulted in the creation of system money.
3. Real Wealth is created in the form of various projects due to debt-financing
4. Govt. paying remuneration to C2 without affecting liquidity position of economy.

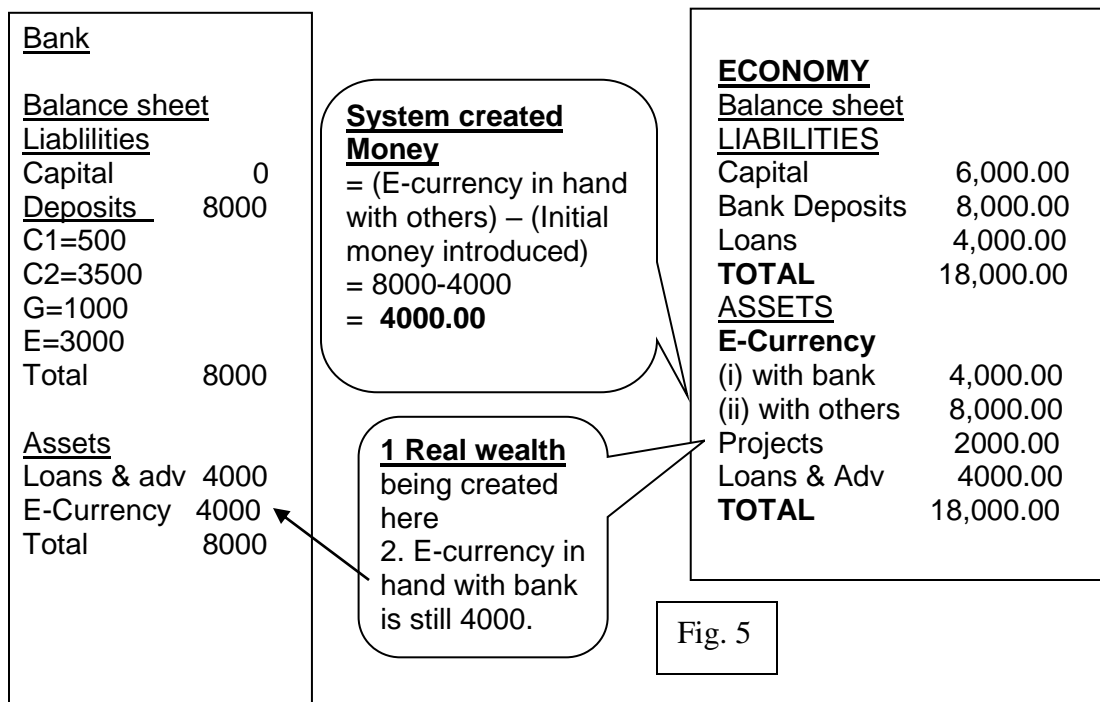
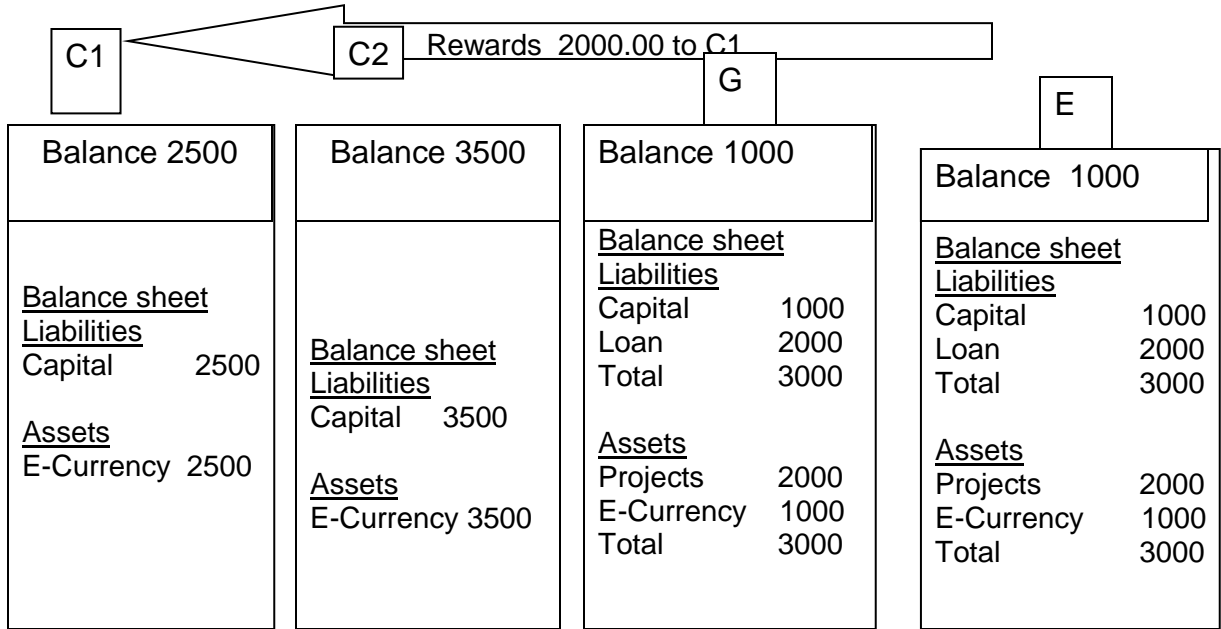
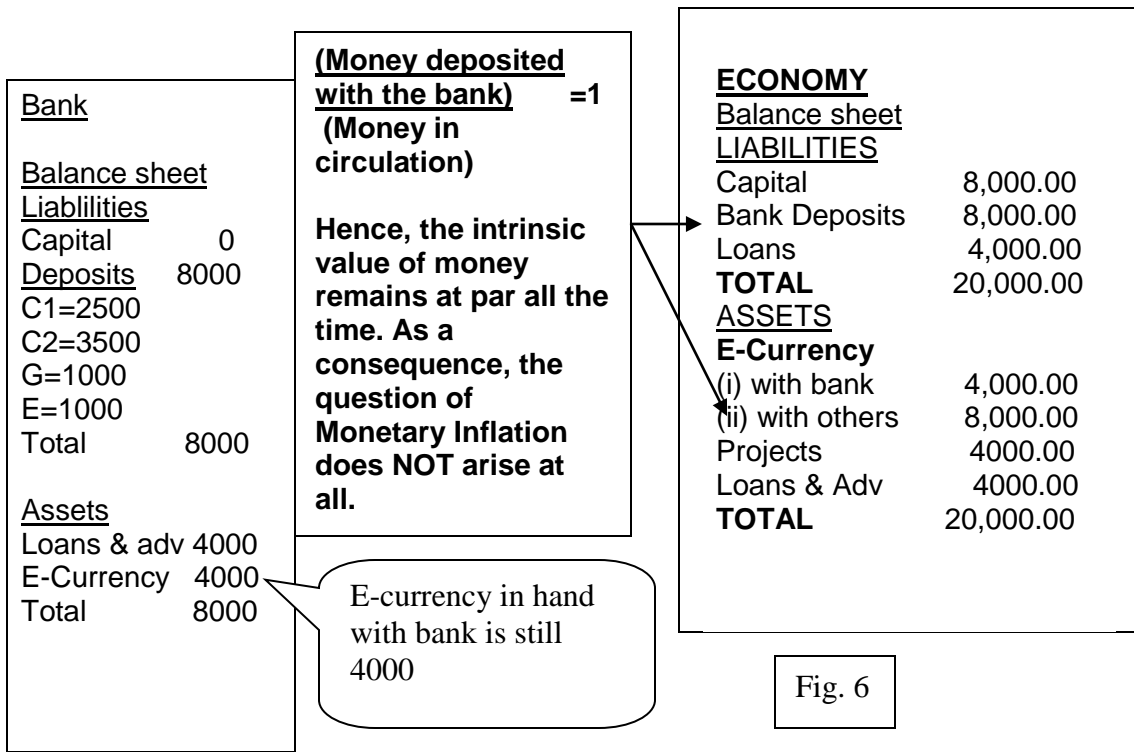


Fig. 5



Money in circulation and with bank are same hence intrinsic value is at par that means no monetary inflation.  
 No liquidity problem. E-currency holding with bank is still 4000 ready for further rotation.  
 Real wealth in the form of new projects are increased to 4000.



C1	C2	G	E
Balance 2500	Balance 3500	Balance 2500	Balance 3500
<u>Balance sheet</u>	<u>Balance sheet</u>	<u>Balance sheet</u>	<u>Balance sheet</u>
<u>Liabilities</u>	<u>Liabilities</u>	<u>Liabilities</u>	<u>Liabilities</u>
Capital 2500	Capital 3500	Capital 1000	Capital 1000
		Loan 3500	Loan 4500
		Total 4500	Total 5500
<u>Assets</u>	<u>Assets</u>	<u>Assets</u>	<u>Assets</u>
E-Currency 2500	E-Currency 3500	Projects 2000	Projects 2000
		ECurrency 2500	ECurrency 3500
		Total 4500	Total 5500

Second income cycle rotation has increased system money. E-currency holding of bank is still intact at 4000 ready for further financing. Till now, bank has advanced 8000 from the initial money of 4000. The magic is that 4000 is still intact.

Loan 1500.00

Loan 2500.00

<u>Bank</u>	
<u>Balance sheet</u>	
<u>Liabilities</u>	
Capital	0
<u>Deposits</u>	12000
C1=2500	
C2=3500	
G=2500	
E=3500	
Total	12000
<u>Assets</u>	
Loans & adv	8000
E-Currency	4000
Total	12000

**System created Money**

= (E-currency in hand with others)  
- (Initial money introduced)

= (12000-4000)  
= **8000.00**

E-currency in hand with bank is still 4000

**ECONOMY**

Balance sheet

LIABILITIES

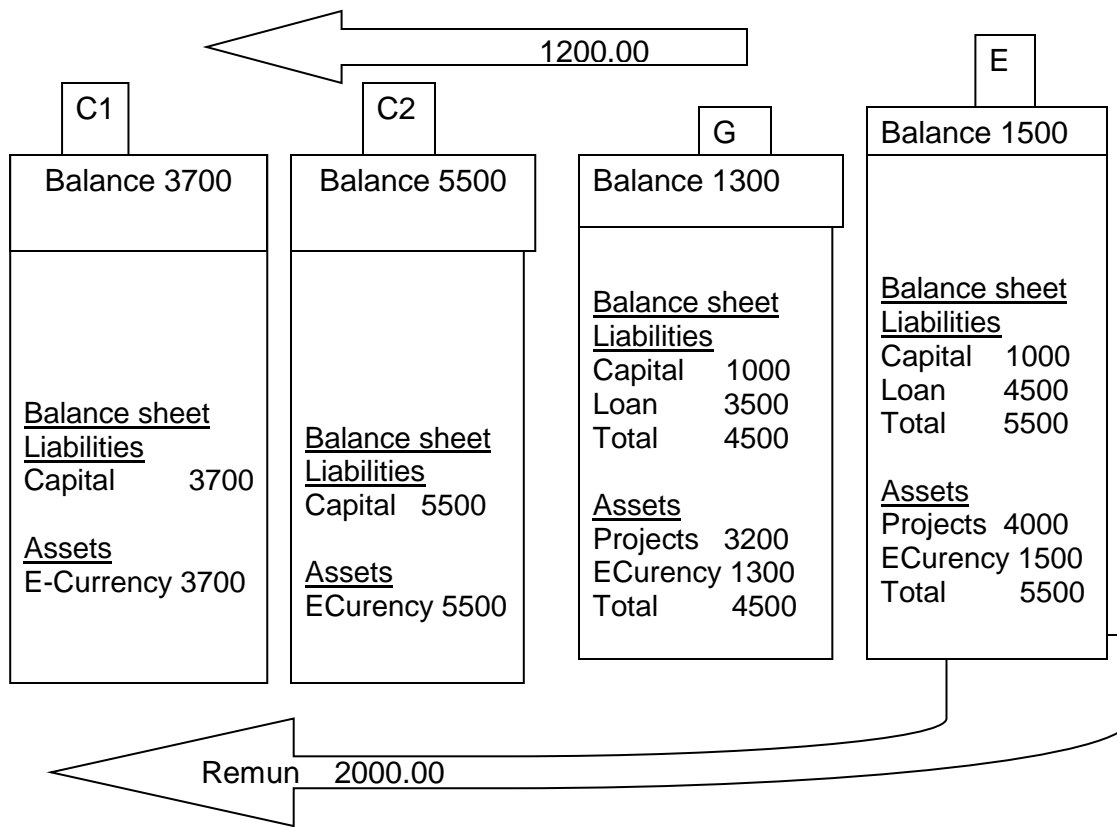
Capital 8,000.00  
Bank Deposits 12,000.00  
Loans 8,000.00  
**TOTAL** 28,000.00

ASSETS

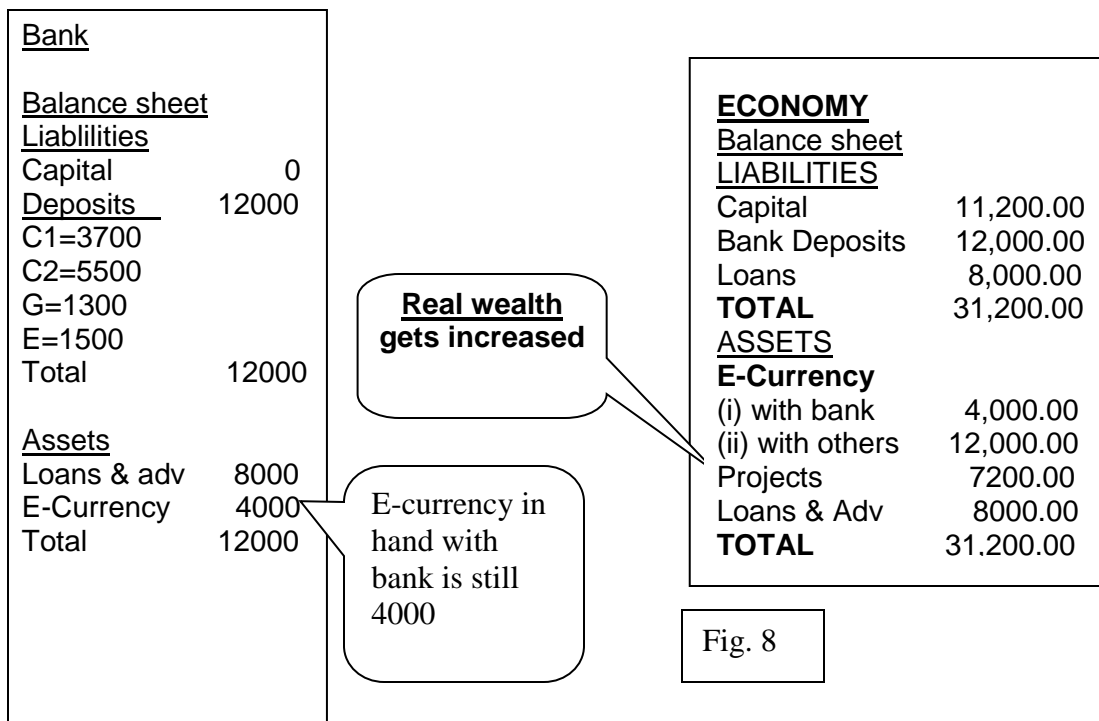
**E-Currency**

(i) with bank 4,000.00  
(ii) with others 12,000.00  
Projects 4000.00  
Loans & Adv 8000.00  
**TOTAL** 28,000.00

Fig. 7



Thus the second income cycle is created. No cash crunch as ample cash is available. Real wealth is increased. No inflation as intrinsic value is at par.



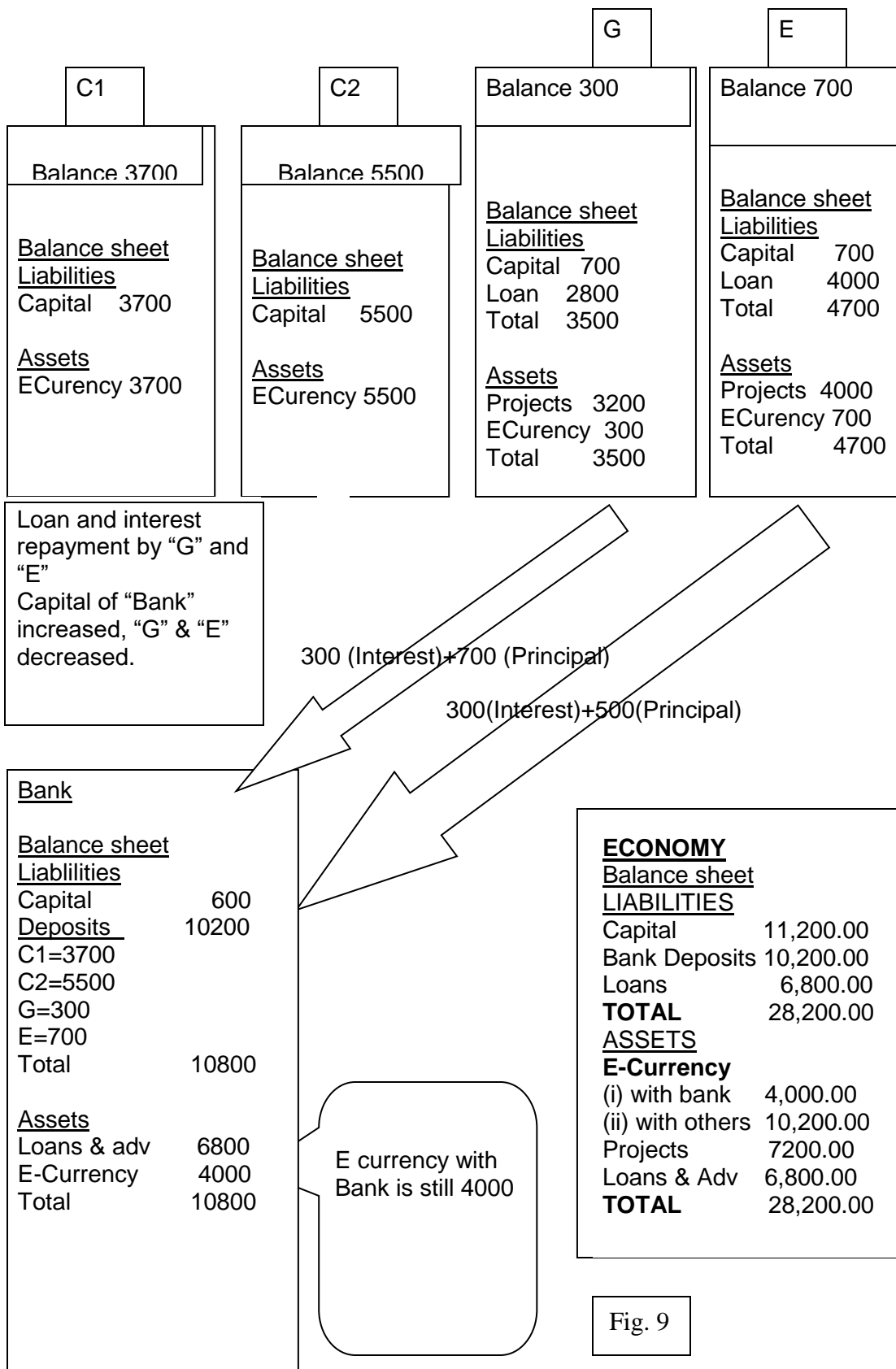
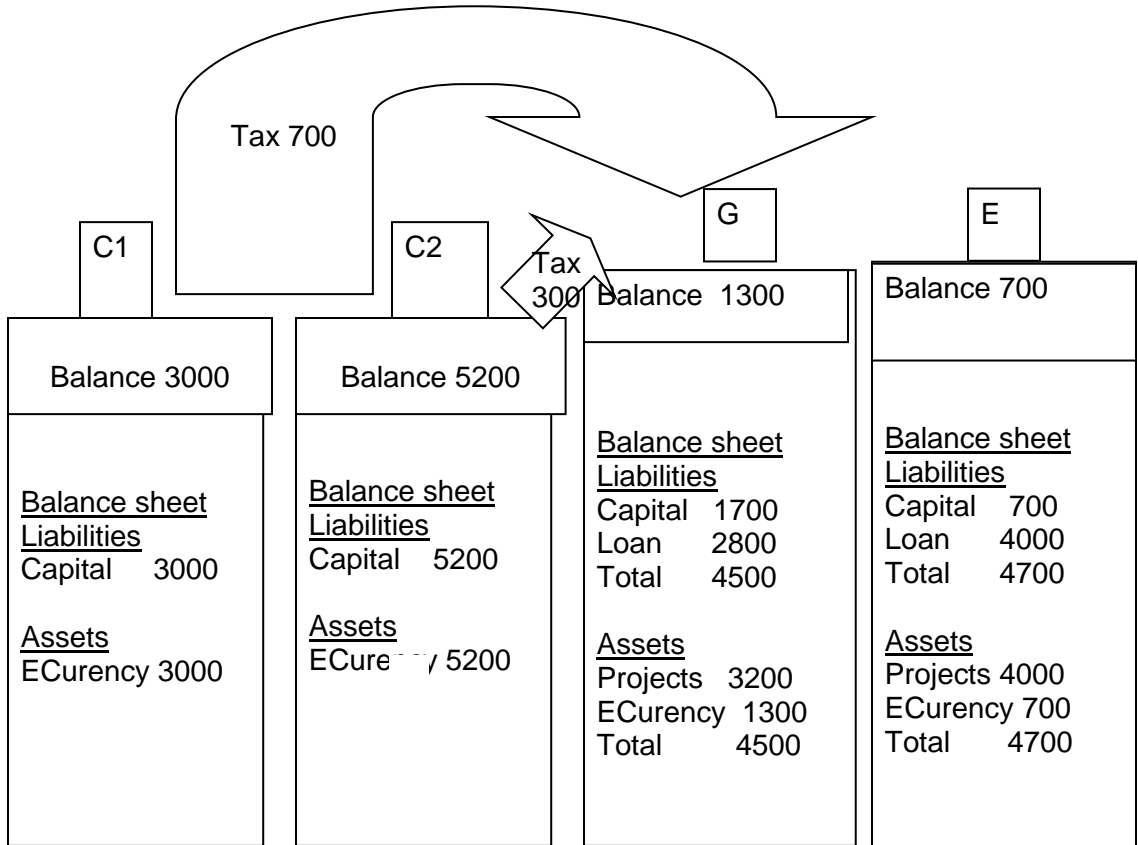


Fig. 9



- 1) C1 and C2 paying taxes to "G".
- 2) Capital & e-currency holding of "Bank" increased while C1 and C2 decreased.
- 3) "Bank" has just passed book entries therefore no fear of cash crunch..

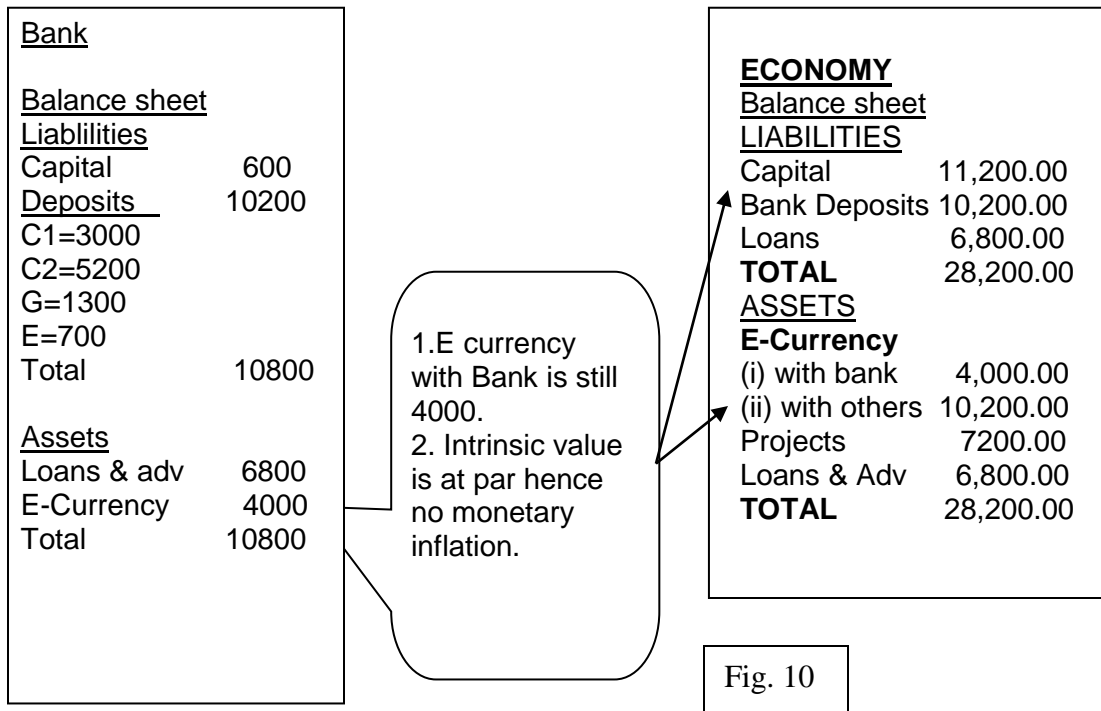


Fig. 10



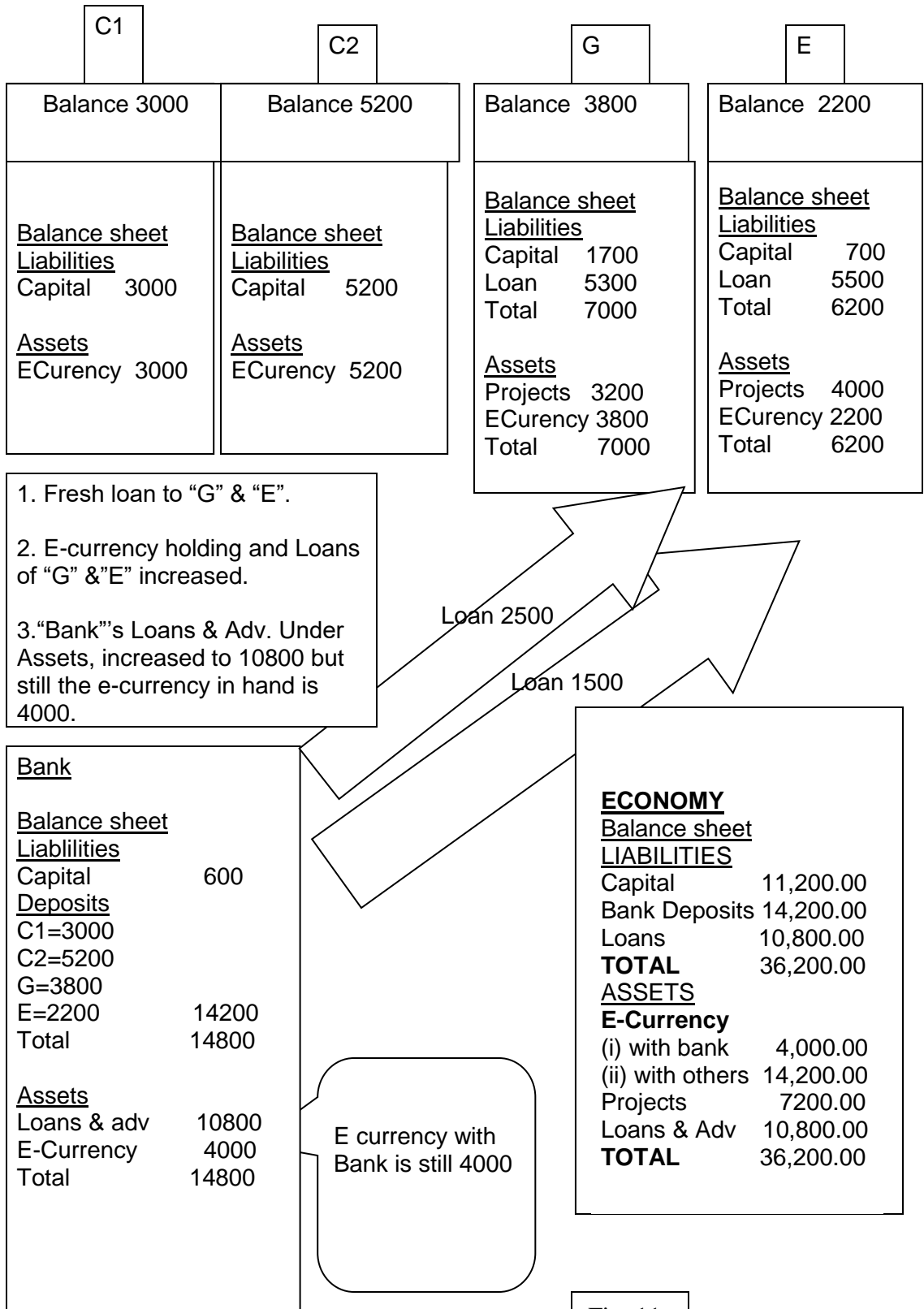
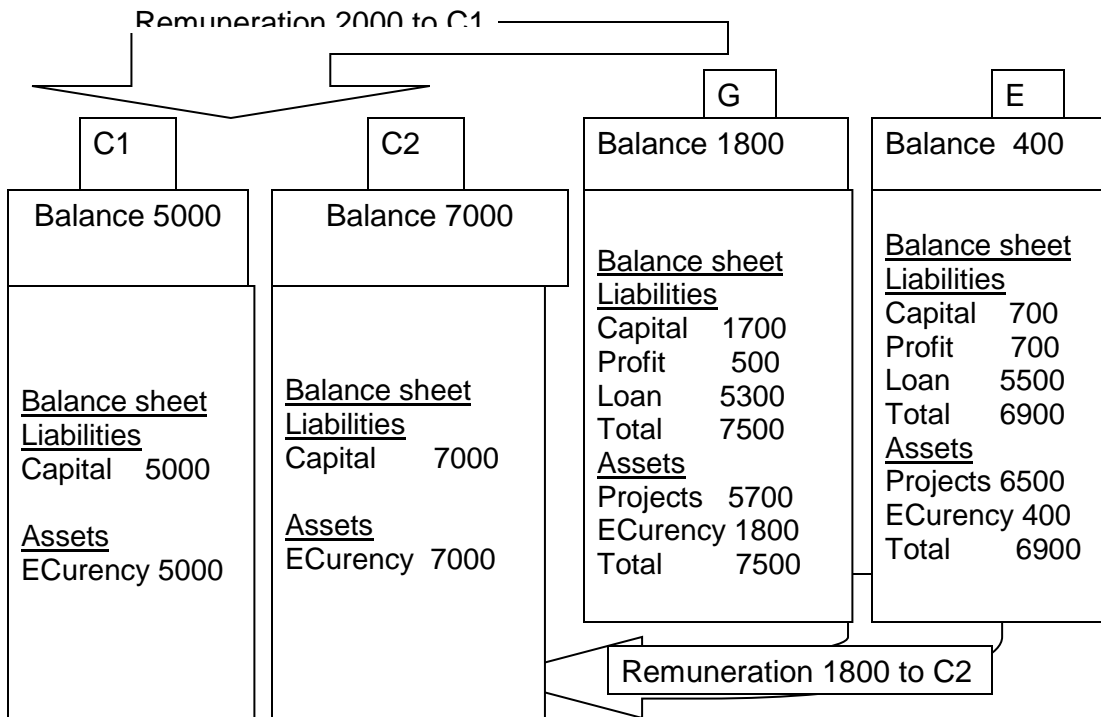


Fig. 11



1. Project Investment by "G" & "E" increasing the real wealth.
2. Rewards to C1 & C2 (may be salary increase/ new employment creation).
3. Profit to G & E.

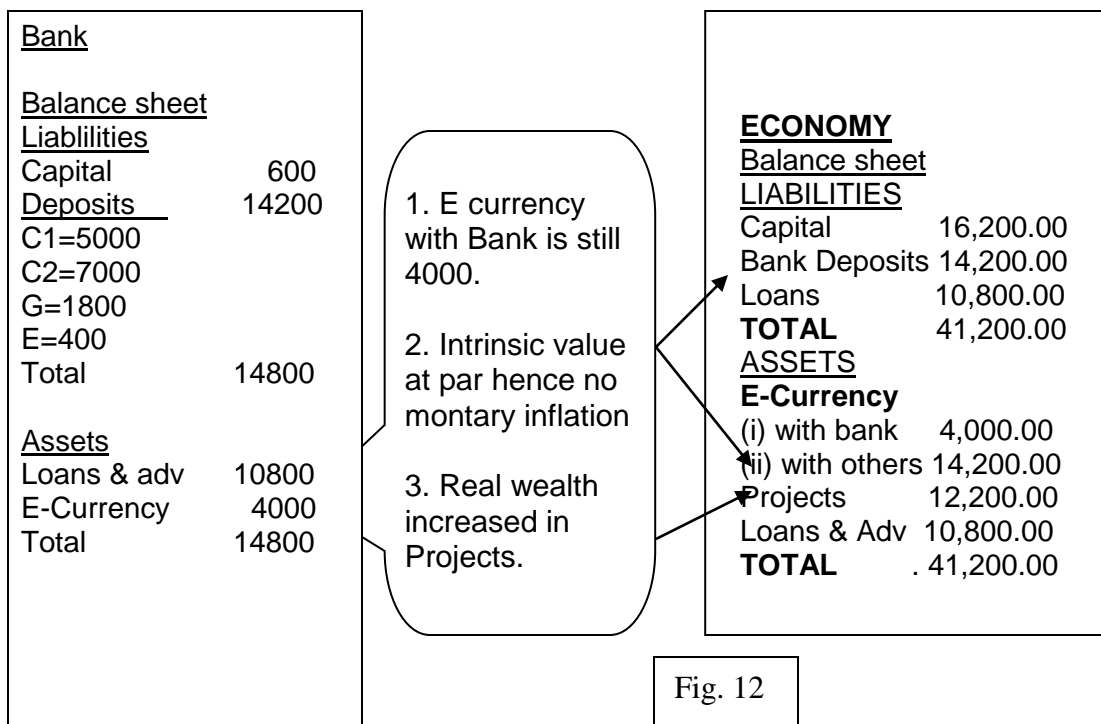
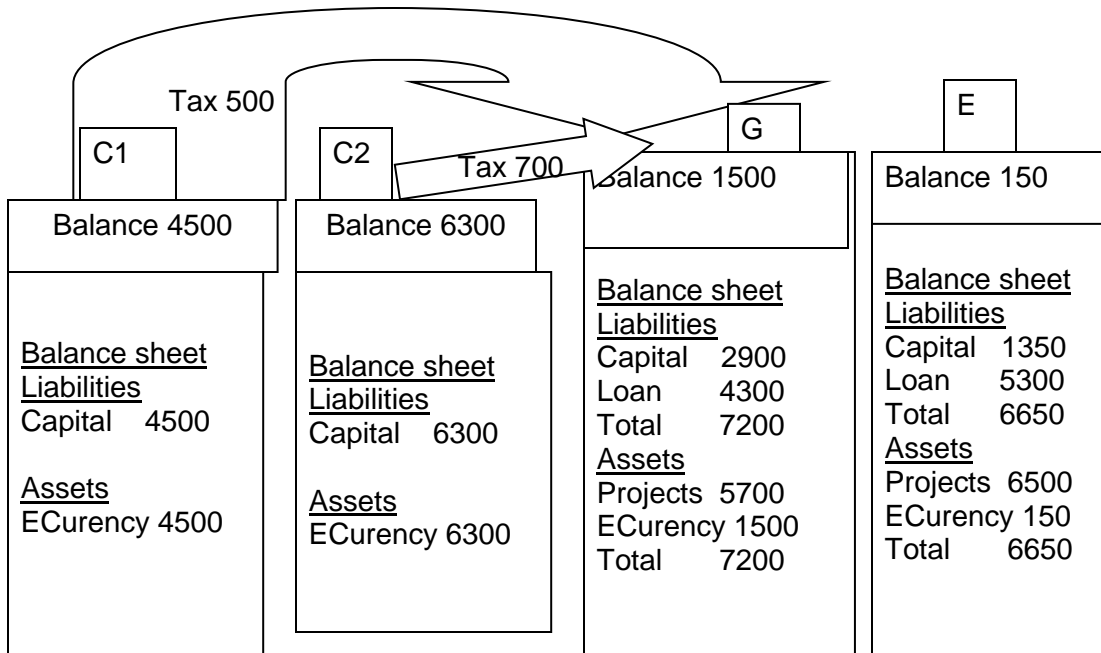


Fig. 12



1. "G" & "E" repaid Loan + Interest to "Bank".
2. C1, C2 paid tax to "G".
3. Profit to "G", "Bank".
4. Bank doing only book entries all the time.
5. No Monetary inflation.

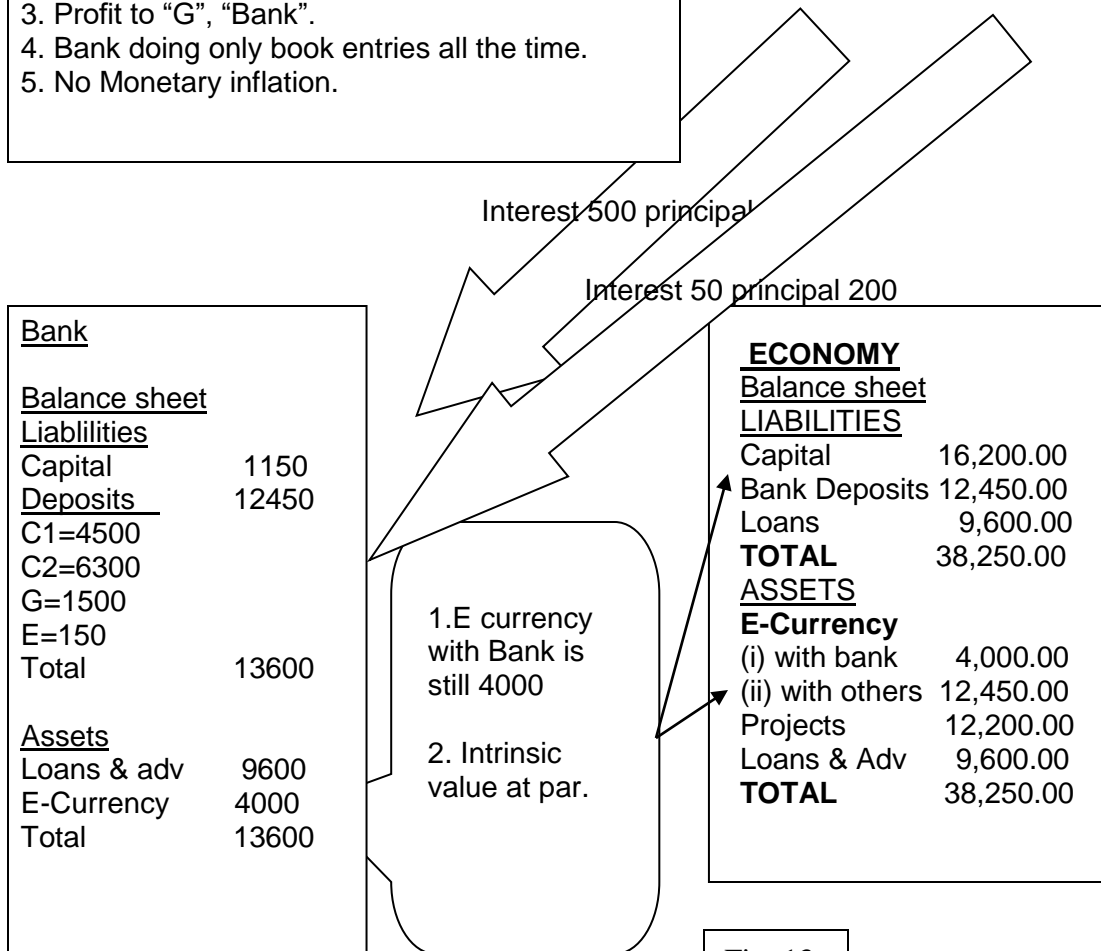
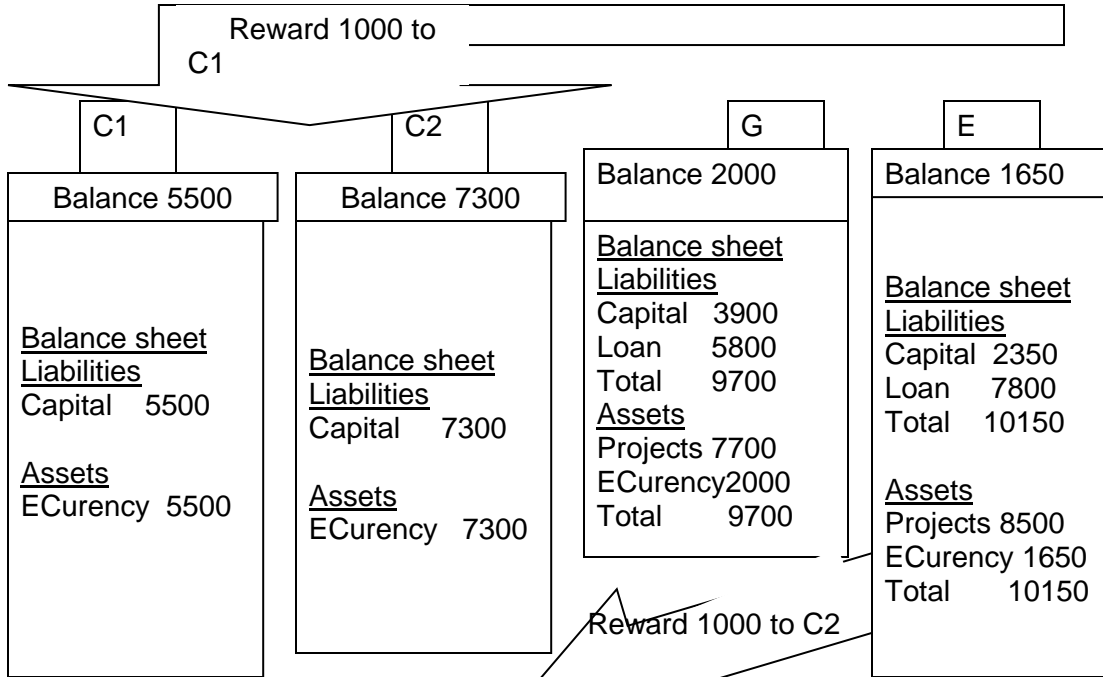


Fig. 13



1. New Loan to "G" & "E".
2. Reward to C1 & C2. may be increase in new employment opportunities.
3. Bank doing only book entries.

Loan 1500 to G

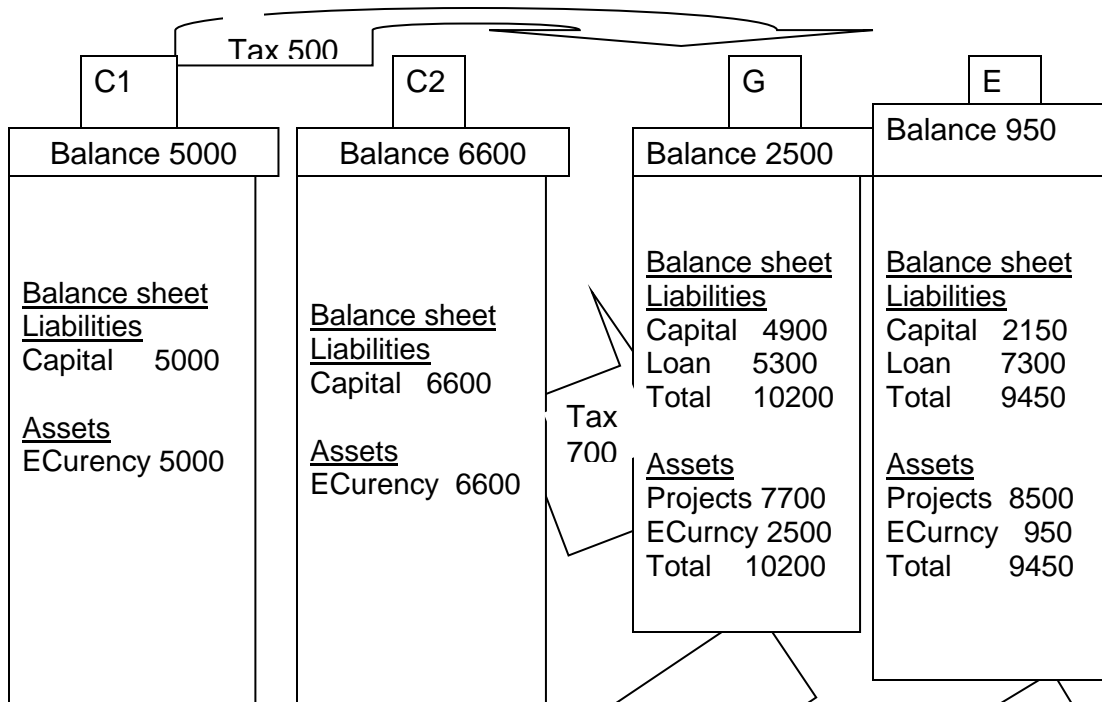
Loan 2500 to E

<u>Bank</u>	
<u>Balance sheet</u>	
<u>Liabilities</u>	
Capital	1150
<u>Deposits</u>	16450
C1=5500	
C2=7300	
G=2000	
E=1650	
Total	17600
<u>Assets</u>	
Loans & adv	13600
E-Currency	4000
Total	17600

1. E currency with Bank is still 4000
2. Intrinsic value at par.
3. Real wealth (Projects) increased

<u>ECONOMY</u>	
<u>Balance sheet</u>	
<u>LIABILITIES</u>	
Capital	20,200.00
Bank Deposits	16,450.00
Loans	13,600.00
<b>TOTAL</b>	<b>50,250.00</b>
<u>ASSETS</u>	
<u>E-Currency</u>	
(i) with bank	4,000.00
(ii) with others	16,450.00
Projects	16,200.00
Loans & Adv	13,600.00
<b>TOTAL</b>	<b>50,250.00</b>

Fig. 14



It is proved that e-currency system is equally effective whether there is tax, usury/ no tax, no usury. New employment, project are created. National/ per capita income increased.

Loan repayment 500  
interest 200

Loan repayment 500  
interest 200

<u>Bank</u>	
<u>Balance sheet</u>	
<u>Liabilities</u>	
Capital	1550
<u>Deposits</u>	15050
C1=5000	
C2=6600	
G=2500	
E=950	
Total	16600
<u>Assets</u>	
Loans & adv	12600
E-Currency	4000
Total	16600

- E currency with Bank is still 4000.
- Intrinsic value at par.
- Real wealth increased

<u>ECONOMY</u>	
<u>Balance sheet</u>	
<u>LIABILITIES</u>	
Capital	20,200.00
Bank Deposits	5,050.00
Loans	12,600.00
<b>TOTAL</b>	<b>47,850.00</b>
<u>ASSETS</u>	
<b>E-Currency</b>	
(i) with bank	4,000.00
(ii) with others	15,050.00
Projects	16,200.00
Loans & Adv	12,600.00
<b>TOTAL</b>	<b>47,850.00</b>

Fig. 15

## **Comparison of income cycle in e-currency system with paper currency in case of international trade**

### **I. E-currency:**

The Fig. 16 shows that in *e-currency system* the money available for income cycle rotation remains unaffected i.e., the basic amount of \$4000 introduced initially at the time of implementation of *e-currency system* remains the same though the volume of money at that particular year gets reduced by the net outflow of \$700 to foreign country due to the deficit in balance of payment. The outflow of \$700 to foreign country was from the money created by the income cycle (System created money) in the economy producing negligible effect on the economic growth. Inflation does not effect economic growth adversely as intrinsic value of the *e-currency* remains intact. As the CRR is 0 and all the money is available to the bank as well as to the citizens compositely (*duality in pocket*) and the money is in the form of electronic blips, no body is required to go to the bank for withdrawal of money out of the system. This empowers the banker to use that deposited money for *debt-financing* to the maximum. This helps creating wealth by rotating the income cycle based on the principle that more the expenditure higher will be the income cycle rotation and hence wealth generation. As compared to paper currency system where rotation of cycle is adversely affected as shown in fig. 17, in *e-currency system*, money available for the rotation remains intact without any loss because the payments made here are out of the money created through repeated cyclical processes of transactions.

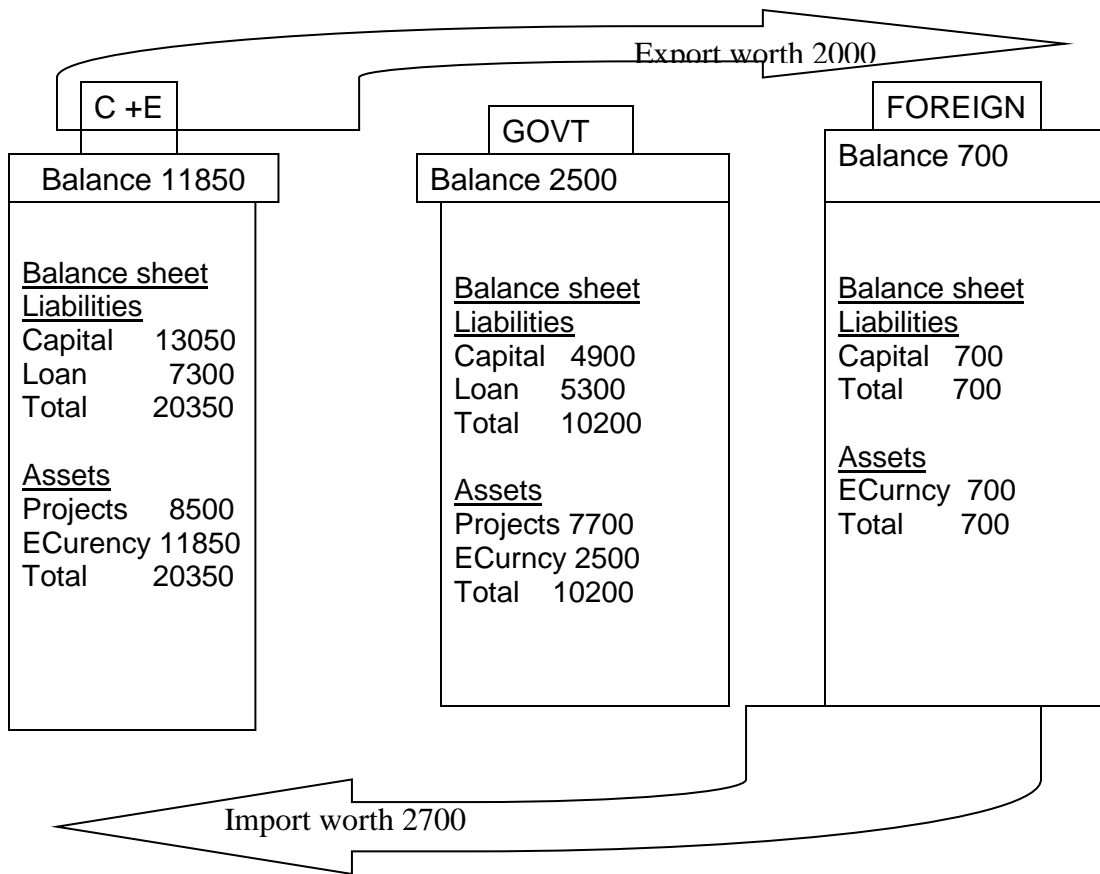
This is possible because the bank is not required to keep any reserve money i.e., the  $CRR=0$  and the initial money being constant is always available for the rotation in the income cycle *ad-infinitum*. It accrues from this that adverse balance of payment in international trade, in *e-currency system*, will have a very negligible negative effect on the economic growth, for, price inflation here will not compel to print additional currency as is required in the paper currency

system. Inflation in the system, thus, will have rather a healthier effect on the economy in terms of generating employment, rise in existing salary scales or better utilization of man power.

## **II. Paper Currency:**

The Fig. 17, shows that inflationary cycle in a traditional paper currency system where the exodus of money outside the system in the process inherently atrophies the volume of the basic currency which ultimately after the creation of fresh currency notes affects its value also adversely.

In paper currency system, as the money goes out of the system due to excess payment on account of adverse balance of payment to some foreign country the money available is affected in the given example by the net loss of \$700. That means out of the total amount of \$4000, after the loss incurred of \$700, the remaining amount of \$3300 is now available for circulation in the economy. In order to meet the demand for the lost money, now the government has to print the fresh currency note to the tune of \$700. This process in turn creates inflation atrophying the intrinsic value of the money.



We can see that international trade deficit has not affected the e-currency with bank, that means 4000 e-currency is still available for further rotation. No monetary inflation, no problems of cash crunch.. Economy is only nominally and temporarily affected.

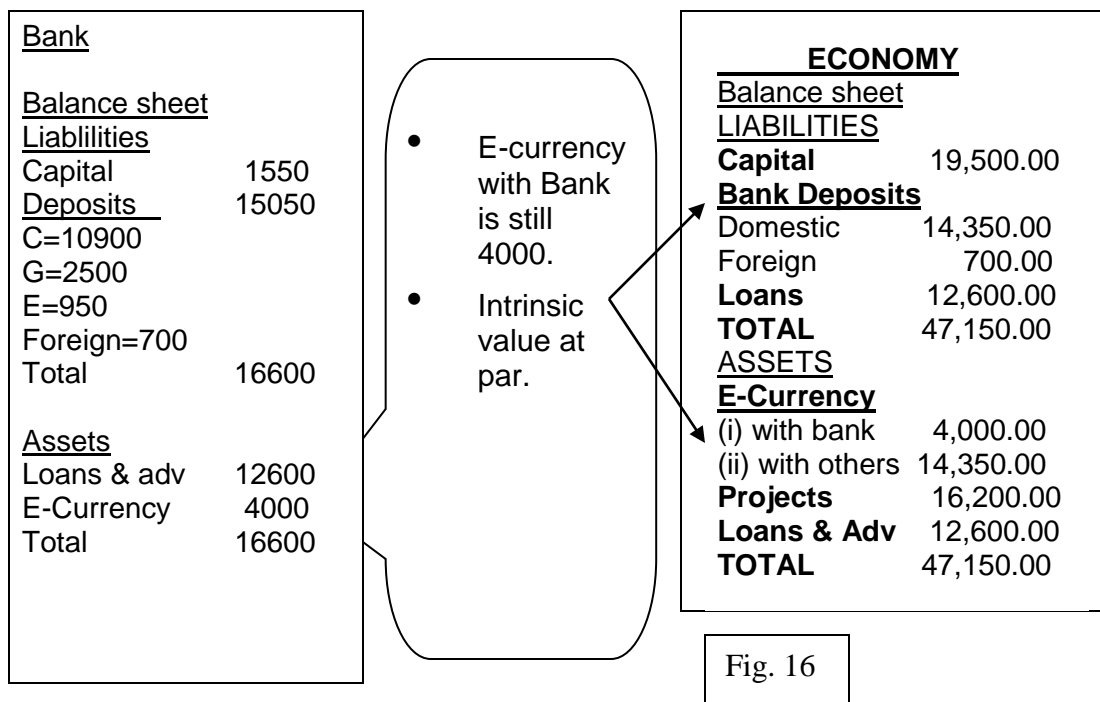
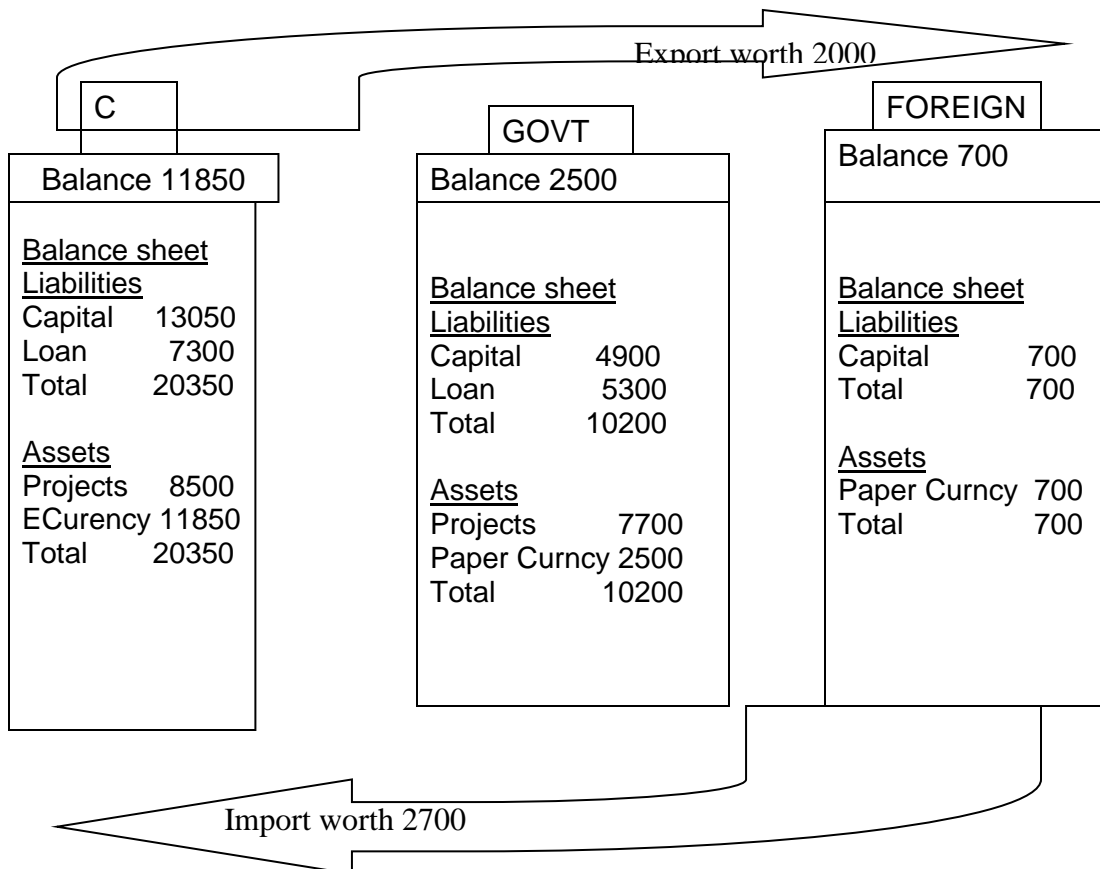


Fig. 16





We can see that international trade deficit has badly affected the deposits with bank, that means now only 3300 worth of paper currency are available for further rotation. Inflation, problems of cash crunch, unemployment, national income etc will prevail.. Economy is materially and badly affected, if the international trade deficit occurs regularly.

Bank		ECONOMY
<b>Balance sheet</b>		<b>Balance sheet</b>
<u>Liabilities</u>		<u>LIABILITIES</u>
Capital 1550		<b>Capital</b> 19,500.00
<u>Deposits</u> 14350		<b>Bank Deposits</b>
C=10900		Domestic 14,350.00
G=2500		<b>Loans</b> 12,600.00
E=950		<b>TOTAL</b> 46,450.00
Total 15900		<u>ASSETS</u>
<u>Assets</u>		<b>Paper Currency</b>
Loans & adv 12600		(i) with bank 3,300.00
Paper Currency 3300		(ii) with others 14,350.00
Total 15900		<b>Projects</b> 16,200.00
		<b>Loans &amp; Adv</b> 12,600.00
		<b>TOTAL</b> 46,450.00

- Paper currency with Bank is reduced to 3300.

Fig. 17

## **Second phase:**

The phenomenon of Inflation can also be explained through mathematical equation format, in the following manner:

- (i) when excess currency is issued, in traditional paper currency system, inflation occurs which could be presented through following equation:

$$PM - BM \geq 0$$

Where PM=Printed money; BM=Deposited Money in the bank (Money Base).

(The higher is the figure the greater is the inflation)

When the ratio between the printed money and deposited money is higher, inflation is bound to occur. This ratio is quite higher in all the countries. The intrinsic value of the money also gets reduced proportionately to the increase in the resultant figure in the above equation.

In the case of exclusive *e-currency system*, where no money is printed but the money is present in the form of electronic blips, this ratio is always equivalent to zero i.e.,

$$IM + SM - DM \cong 0$$

**Where IM=Issued Money (Printed); SM= System Created Money (through cyclical rotations) and DM= Deposited Money).**

**(That means no inflation).**

This is possible as all the money with the constituents of the economy (Government, Bank and Citizen) will always be kept deposited with the bank with no adverse effect on the available liquidity.

(ii) (a) In the paper currency system, inflation follows when there is increase in the commodity prices, which means that when there is increase in the demand for currency, the country will be obliged to print additional currency leading to inflation.

(b) In contrast in *e-currency system* the increase in the demand for further *e-currency* could be easily met by the *system created money* for the income cycle itself generates money through rotationary process. It is evident from this discussion that there is no loss in the value of currency taking place, and the ability of the bank to use the initial amount of currency any number of times for the purpose of loans in the form of *debt-financing* fairly exists there. This will accelerate private and public investment rapidly creating immense employment opportunities through new projects with ample potentiality for the new man power to be engaged. As the employment grows, there will be increase in the total purchasing power of the people which will increase the prices of the commodity as per the law of demand and supply though for a short period of time, creating a temporary inflation. The increase in demand will be met by the increase in supply through the introduction of new projects/industrial units etc. This could be made possible without any difficulty, for the banks with sufficient money, generated through rotatory income cycles, will be able to provide loans at a very competitive rate.

This process could be further explained with the help of an example: Say there are \$1,00,000 in the form of paper currency, in circulation in the Country. Previous year every Dollar was capable of buying 10 units of essential commodity. Now this year there is a recession and so the Government has printed 10,000 dollars in excess to give it to the poor for their welfare for

purchasing their necessities. The welfare Government though tried to help the poor monetarily to ease their stringency but eventually the prices further shot up due to the increase in the pressure of demand. It is usual scenario that mostly despite all attempts pooled by the government the inflation does not cease and prices keep on rising. Persons who are smart enough take the advantage of this inflationary process and those lag behind suffer, for the value of the currency declines and their purchasing power goes on deteriorating.

In the inflationary process generally people who are spendthrift consumers are most benefited from the market situation rather than the people who are inclined to save the money for the betterment of their future. This is so because the value of the saved money is subject to fast depletion. This could be shown through the following equation:

$$(a) \text{ Savings} * \frac{TCS}{(TCS + NIC)} = PVS$$

Where TCS= total currency at the time of savings; NIC= newly issued currency and PVS= Present value of the savings

If a person has saved \$100 previous year, after introduction of the newly printed Dollar in paper currency, his savings are now only

$$100 * \frac{100000}{(100000 + 10000)} = 100 * \frac{100000}{110000} = \$91$$

So he lost \$9 with none of his fault, because Government printed excess money which affected his holdings negatively.

In terms of formulation:

$$(b) DC = \frac{VC}{(VC + NIC)}$$

Where DC= Devaluation of currency; VC= Value of currency originally issued and NIC= Additional currency issued.

In the above example, it is

$$\frac{100000}{(100000 + 10000)} = \frac{1}{11} = 91\%$$

That means, the value of currency is now only 91% of the originally issued currency. In other word, \$1 is now worth \$0.91 only.

$$\textcircled{c} \text{ Inflationin\%} = \frac{NIC}{(TC + NIC)}$$

Where NIC= Additional Currency Issued; TC= Total Currency prior to the introduction of additional currency.

Hence, the currency, in the given example, is inflated by

$$\frac{10000}{(100000 + 10000)} = \frac{10000}{110000} = \frac{1}{11} = 9.09\%$$

While in *e-currency system*, Government will not be required to issue fresh currency; with the help of *debt-financing* it will be possible for the bank to manage the situation. Government will have sufficient amount of *e-currency* from the income cycle rotation to undertake new projects of development like desalinization of sea water, cultivation in arid areas, power generation, employment creation etc. which were earlier considered to be difficult due to paucity of funds. This is possible because all money belonging to individuals in *e-currency system* will always be available with the bank having equal liquidity for everyone just as cash in paper currency system. There are no chances of its side effects in the form of inflation due to higher rotation of income cycle, *as money base in the form of money deposited will always be equal to the money issued*

along with the system created money, with no adverse inflationary effects. Now as the employment is created the needy people will get salary in return of their hard work in place of charity money from the government, adding to the GNP. Increase in purchasing power will enable the people to buy sufficient quantity of commodities and articles as per their needs. Thus the economic entropy (disorderly forces) are geared to creativity and development enabling peace and happiness everywhere.

The above discussion can be represented in the following formulation:

$$IE = \frac{AC}{(TC + AC)}$$

Where IE=Inflation of currency (in *e-currency system*); AC== Value of Additional currency issued and TC= Original Currency at the time of implementation of e-currency system.

This is again put in the concrete terms from the above cited example as under:

$$\frac{0}{(100000 + 0)} = \frac{0}{100000} = 0$$

That means, Zero inflation.

Similarly, devaluation in case of *e-currency* can be shown by way of equation as under:

$$DEC = \frac{TC}{(TC + AC)}$$

where DEC= Devaluation on *E-currency*; TC=Value of currency originally issued and

AC=Additional currency issued.

$$\frac{100000}{100000 + 0} = \frac{100000}{100000} = 1$$

That means Value of *e-currency* is always at par with the original money introduced initially at the time of implementation of *e-currency system*.

In other words, intrinsic value of \$1 equals \$1. The currency here is inflated by 0%. This is possible because irrespective of the volume of issued *e-currency* there will not be any adverse effect of inflation as the entire money in the system always remains available with the bank with the liquidity as good as cash in paper currency system, without any chances of any kind of socio-economic disorderliness and chaos.

### **Third phase:**

Let us try to understand the impact of *e-currency system*, with increased number of players in the economy having greater complexity. This is an attempt, with the help of Balance Sheets of the different sectors of the economy, to explain that '*e-currency*' can easily cope up with the real complex economic world with the positive impact on the economy as earlier mentioned.

#### ESSENTIAL SECTORS OF THE ECONOMY:

1. Government/ Private Entrepreneurs
2. Bank
3. Citizens of the Country

In our example let us assume there are five citizens in the country, C1, C2, C3, C4 and C5. There is one Government G1, three entrepreneurs E1, E2 and E3 and two Banks B1 and B2.

Suppose Government switches over from paper currency system to complete *e-currency system*.

There were 100 Dollars net in circulation with the economy at the time of paper currency.

These 100 Dollars were owned by: Government \$2.50, Entrepreneurs \$10

Bank \$75 Citizens \$62.50 with bank and \$25 as unaccounted money.

Further detailed bifurcation is:

G1= \$2.50 with B2, E1= \$2.50 with B2, E2= \$5.00 with B2 and E3= \$2.50 with B2, B1= \$37.50, B2= \$37.50

C1= \$12.50 with B1 and \$2.50 unaccounted, C2= \$12.50 with B2 and \$10.00 as unaccounted, C3= \$12.50 with B1 and \$2.50 as unaccounted, C4= \$12.50 with B2 and \$5.00 as unaccounted and C5= \$12.50 with B2 and \$5.00 as unaccounted money.

With the introduction of *e-currency system* exclusively it will be obligatory on the part of the public to deposit all their money (whether accounted or unaccounted) with the bank which in turn will issue digitized money to the individuals as per their individual holdings in the form of *e-currency* in electronic currency machines for the purpose of their use.

On issuance of the *e-currency* their money belonging in the form of *e-currency* will be:

G1= \$2.50, E1= \$2.50, E2= \$5.00, E3=\$2.50, C1= \$15.00, C2= \$22.50, C3= \$15.00, C4= \$17.50 and C5 = \$17.50 all totaling to \$100.00 with B1= \$52.50 and with B2= \$47.50.

Now both the banks together have \$100.00 of *e-Dollar* i.e., total money issued in circulation as deposited money. In *e-currency* system bank will not be required to keep any money as reserve (CRR=0) which will not affect liquidity during transaction among citizens, government and entrepreneur Hence, banks are in a position to use this deposited money to the tune of 100% for the purpose of grants as loans to Government/Entrepreneurs/ Citizens. Suppose Bank, B1 has advanced \$22.50 to G1, \$10.00 to E1, \$10.00 to E2 and \$10.00 to E3 and Bank, B2 has advanced \$47.50 to G1.



The balance sheet of all the sectors of economy will be:

**GOVERNMENT, G1:**

Liabilities	Amount	Assets	Amount
Loan from		Cash at	
B1	22.50	B1	22.50
B2	47.50	B2	50.00
Capital	2.50		
Total	72.50	Total	72.50

**BANKS, B1 & B2**

Liabilities	B1 (Amount)	B2 (Amount)	Assets	B1 (Amount)	B2 (Amount)
Deposits			Loan granted to		
G1	22.50	50.00	G1	22.50	47.50
C1	15.00		E1	10.00	
C2	22.50		E2	10.00	
C3	15.00		E3	10.00	
E1	10.00	2.50	E-currency with bank	52.50	47.50
E2	10.00	5.00			
E3	10.00	2.50			
C4		17.50			
C5		17.50			
Total	105.00	95.00	Total	105.00	95.00

*E-currency* with B1 will be \$52.50 because when the loan is granted, it will be automatically deposited with that bank before it is used.

**Entrepreneurs: E1, E2 & E3**

Liabilities	E1 (Amount)	E2 (Amount)	E3 (Amount)	Assets	E1 (Amount)	E2 (Amount)	E3 (Amount)
Loan from B1	10.00	10.00	10.00	E - Currency with B1	10.00	10.00	10.00
Capital	2.50	5.00	2.50	E - currency with B2	2.50	5.00	2.50
Total	12.50	15.00	12.50	Total	12.50	15.00	12.50

**CITIZENS: C1, C2, C3, C4 & C5**

Liabilities	C1 (Amount)	C2 (Amount)	C3 (Amount)	C4 (Amount)	C5 (Amount)
Capital	15.00	22.50	15.00	17.50	17.50
Total	15.00	22.50	15.00	17.50	17.50
Assets	Amount	Amount	Amount	Amount	Amount
E-currency with B1	15.00	22.50	15.00		
E-currency with B2				17.50	17.50
Total	15.00	22.50	15.00	17.50	17.50

Table 1

II. Now let us suppose G1, E1, E2 and E3 utilized their loan by investing in their respective projects, and the citizens E1, E2, E3, C1, C2, C3, C4 and C5 were the workers in those projects in their different capacities viz., suppliers, contractors, employees etc. As the result the whole of the amount invested will be received by these citizens in the form of various rewards in return to their services. Total amount invested in the above example by G1 is \$72.50. Now suppose, E1 gets \$10.00 from G1, E2 gets \$12.50 from G1, E3 gets \$10.00 from G1, C1 gets \$15.00 from G1, C2 gets \$15.00 from G1 and C3 gets \$5.00 from G1, C4 gets \$2.50 from G1 and C5 gets \$2.50 from G1. Similarly, E1 gave \$10.00 to C1 and \$2.50 to C2, E2 gave \$12.50 to C2 and \$2.50 to C3, E3 gave \$2.50 to C4 and \$10.00 to C5. Their respective position in the form of balance sheet will be:

**GOVERNMENT: G1**

Liabilities	Amount	Assets	Amount
Loan from			
B1	22.50	Projects	72.50
B2	47.50		
Capital	2.50		
Total	72.50	Total	72.50

**BANKS: B1 & B2**

Liabilities	B1 (Amount)	B2 (Amount)	Assets	B1 (Amount)	B2 (Amount)
Deposits			Loan granted to		
G1	0		G1	22.50	47.50
C1	35.00		E1	10.00	
C2	37.50	15.00	E2	10.00	
C3		22.50	E3	10.00	
E1	10.00		E-currency with bank	52.50	47.50
E2	12.50				
E3	10.00				
C4		22.50			
C5		30.00			
C1		5.00			
Total	105.00	95.00	Total	105.00	95.00

**ENTREPRENEURS: E1, E2 & E3**

Liabilities	E1 (Amount)	E2 (Amount)	E3 (Amount)	Assets	E1 (Amount)	E2 (Amount)	E3 (Amount)
Loan from	10.00	10.00	10.00	Projects	12.50	15.00	12.50

B1							
Capital	12.50	17.50	12.50	E-currency with B	10.00	12.50	10.00
Total	22.50	27.50	22.50	Total	22.50	27.50	22.50

CITIZENS: C1, C2, C3, C4 & C5

Liabilities	C1 (Amount)	C2 (Amount)	C3 (Amount)	C4 (Amount)	C5 (Amount)
Capital	40.00	52.50	22.50	22.50	30.00
Total	40.00	52.50	22.50	22.50	30.00
Assets	Amount	Amount	Amount	Amount	Amount
E-currency with B1	15.00	22.50	15.00		
E-currency with B2				17.50	17.50
E-currency received from G1	15.00	15.00	5.00	2.50	2.50
E-Currency received from E1	10.00	2.50			
E-Currency received from E2		12.50	2.50		
E-Currency received from E3				2.50	10.00
Total	40.00	52.50	22.50	22.50	30.00

Table 2

It should be noted that in *e-currency system*, unlike paper currency system, though the money will always be deposited with the bank still anybody holding *electronic currency machine* will have access to 100% liquidity to all the money belonging to him. In other words, the individual under *e-currency system* will be able to transact any amount any time, subject to the maximum amount belonging to him, along with the bank empowered to use the same money simultaneously. This is called *duality in pocket*. When money got transferred through transaction from one person to another, the total amount with the bank does not get affected in such closed system for mere updating the accounts of the concerned person will suffice. This can be explained with the help of balance sheets. Suppose C2 has \$2.50 worth of readymade garments as stock in trade and C1 purchases from C2 readymade garments for \$0.50. Instead of making payments in cash both will inform the bank about the transaction and bank will update their accounts by making necessary book entries. The position of C1, C2 and bank after the transaction will be:

CITIZEN: C1 & C2

Liabilities	C1 (Amount)	C2 (Amount)	Assets	C1 (Amount)	C2 (Amount)
Capital	40.00	55.00	E-currency with B1	14.50	23.00
Net Profit		0.25	E-currency received from G1	15.00	15.00
			E-Currency received from E1	10.00	2.50
			E-currency received from E2		12.50
			Readymade Garments	0.50	2.25
Total	40.00	55.25	Total	40.00	55.25

BANK: B1

Liabilities	Amount	Assets	Amount
Deposits		Loan granted to	
G1	0	G1	22.50
C1	34.75	E1	10.00
C2	37.75	E2	10.00
C3		E3	10.00
E1	10.00	E-currency with bank	52.50
E2	12.50		
E3	10.00		
Total	105.00	Total	105.00

Table 3

From the above example we can see clearly that C1 and C2 did their transaction very easily and bank just passed the book entry by reducing \$0.25 from C1's account while it added \$0.25 to C2 account. That means whereas bank was holding entire money deposited with it, still, *electronic currency machine holder* could have the liquidity of the money with him as cash in the paper currency system. At the same time, banks are still in the position to use this deposited money for granting further loans due to duality in pocket.

From the above example, in stage II, we can clearly see that Bank B1 and B2 still have the same money of \$52.50 and \$47.50 available for further granting as was in the stage I. Now suppose,

bank, B1 gives \$17.50/- each to E1, E2 and E3 and bank, B2 gives \$47.50 to G1. The updated position, now, in the form of balance sheet will be:

**GOVERNMENT: G1**

Liabilities	Amount	Assets	Amount
Loan from			
B1	22.50	Projects	72.50
B2	47.50	E-currency with B2	47.50
Capital	2.50		
New Loan from B2	47.50		
Total	120.00	Total	120.00

**BANKS: B1 & B2**

Liabilities	B1 (Amount)	B2 (Amount)	Assets	B1 (Amount)	B2 (Amount)
Deposits			Loan granted to		
G1	0	47.50	G1	22.50	95.00
C1	34.75	5.00	E1	10.00	
C2	37.75	15.00	E2	10.00	
C3		22.50	E3	10.00	
E1	10.00		New Loan to E1	17.50	
E2	12.50		E2	17.50	
E3	10.00		E3	17.50	
Fresh Deposits E1	17.50		E-currency in hand	52.50	47.50
E2	17.50				
E3	17.50				
C4		22.50			
C5		30.00			
Total	157.50	142.50	Total	157.50	142.50

**ENTREPRENEURS: E1, E2 & E3**

Liabilities	E1 (Amount)	E2 (Amount)	E3 (Amount)	Assets	E1 (Amount)	E2 (Amount)	E3 (Amount)
Loan from B1	10.00	10.00	10.00	Projects	12.50	15.00	12.50
Capital	12.50	17.50	12.50	E- currency with B	10.00	12.50	10.00
New loan from B1	17.50	17.50	17.50	E-currency with B1	17.50	17.50	17.50
Total	40.00	45.00	40.00	Total	40.00	45.00	40.00

Table 4

Now suppose G1, E1, E2 and E3 invested the entire loan amount in their projects. C1, C2, C3, C4 and C5 are the workers in different capacities in those projects. For their services, these citizens get rewards from their employers. G1 gave \$25.00 to C1 and \$22.50 to C2 for their services in the project and E1 gave \$17.50 to C3, E2 gave \$17.50 to C4 and E3 gave \$17.50 to C5 as rewards for their services.

The changed position, now, can be reflected as under:

G1

Liabilities	Amount	Assets	Amount
Loan from			
B1	22.50	Projects	72.50
B2	47.50	New projects	47.50
Capital	2.50		
New Loan from B2	47.50		
Total	120.00	Total	120.00

BANKS: B1 & B2

Liabilities	B1 (Amount)	B2 (Amount)	Assets	B1 (Amount)	B2 (Amount)
C4		22.50	Loan granted to		
C5		30.00	G1	22.50	95.00
C1	34.75	5.00	E1	10.00	
C2	37.75	15.00	E2	10.00	
C3		22.50	E3	10.00	
E1	10.00		New Loan to E1	17.50	
E2	12.50		E2	17.50	
E3	10.00		E3	17.50	
Fresh Deposits C3	17.50		E-currency in hand	52.50	47.50
C4	17.50				
C5	17.50				
C1		25.00			
C2		22.50			
Total	157.50	142.50	Total	157.50	142.50

ENTREPRENEURS: E1, E2 & E3

Liabilities	E1 (Amount)	E2 (Amount)	E3 (Amount)	Assets	E1 (Amount)	E2 (Amount)	E3 (Amount)
Loan	10.00	10.00	10.00	Projects	12.50	15.00	12.50

from B1							
Capital	12.50	17.50	12.50	E- currency with B	10.00	12.50	10.00
New loan from B1	17.50	17.50	17.50	New projects	17.50	17.50	17.50
Total	40.00	45.00	40.00	Total	40.00	45.00	40.00

### C1

Liabilities	C1 (Amount)	C2 (Amount)	C3 (Amount)	C4 (Amount)	C5 (Amount)
Capital	65.00	77.50	40.00	40.00	47.50
Net Profit		0.25			
Total	65.00	77.75	40.00	40.00	47.50
Assets	Amount	Amount	Amount	Amount	Amount
E-currency with B1	14.75	22.75	15.00		
E-currency with B2				17.50	17.50
E-currency received from G1	15.00	15.00	5.00	2.50	2.50
E-Currency received from E1	10.00	2.50	17.50		
Readymade Garments	0.25	2.50			
E-currency received from G1	25.00	22.50			
E-currency received from E2		12.50	2.50	17.50	
E-currency received from E3				2.50	27.50
Total	65.00	77.75	40.00	40.00	47.50

Table 5

### Analysis:

As we had already pointed out in the beginning while emphasizing the closed cycle phenomenon of the transactions among the individuals as well as between the banks and the individuals in the *e-currency system* the above balance sheets fairly illustrate this point. This leads us to conclude that the amount of \$100.00 initially introduced in the *e- currency system* for the purpose of transactional circulation has grown to the tune of \$400.00 in three transactional cycles.

From the above example we can conclude that \$100.00 with bank brought in circulation initially at the time of introduction of complete *e-currency system* with the economy were owned by Government \$2.50, Entrepreneurs \$10.00, Bank \$100.00 and Citizens \$87.50. After two rotation of the money cycle the position for these stated segments of the economy, changed respectively as under:

(A) Government:

G1= Assets in the form of Government projects were created to the tune of \$120.00, and loan taken were \$117.50.

(Assets) \$120.00-(Liabilities) \$117.50= \$2.50 as capital as was in the beginning.

(B) Entrepreneurs:

E1= \$10.00 worth of *e-currency* with B2 and \$30.00 worth of projects,

(Assets)\$40.00-(Liabilities) \$27.50=\$12.50 (Capital).

E2= \$12.50 with B2 and \$32.50 worth of projects

(Assets)\$45.00-(Liabilities) \$27.50=\$17.50 (Capital).

E3= \$10.00 with B2 and \$30.00 worth of projects are created.

(Assets)\$40.00-(Liabilities) \$27.50=\$12.50 (Capital).

Creation of projects means employment and assets generation.

© Banks:



B1= \$52.50 of *e-currency* in hand and \$105.00 worth of Loan grants and \$157.50 worth of deposits,

(Assets) \$157.50 & (Liabilities) \$157.50

B2= \$47.50 of *e-currency* in hand with \$95.00 worth of Loan grants and \$142.50 worth of deposits.

(Assets) \$142.50 & (Liabilities) \$142.50

(D) Citizens:

C1= \$64.75 worth of *e-currency* and \$0.25 worth of stock, C2= \$75.25 worth of *e-currency* and \$2.25 worth of stock, C3= \$40.00 worth of *e-currency*, C4= \$40.00 worth of *e-currency* and C5= \$47.50 worth of *e-currency*.

Total money belonging with all Citizens: C1+C2+C3+C4+C5=\$267.50 worth of *e-currency* + \$2.50 worth of stock.

The consolidated position of the total economy in the form of balance Sheet will be:

<b>Liabilities</b>	<b>Amount</b>	<b>Assets</b>	<b>Amount</b>
<b>Capital</b>		<b>Projects</b>	
Government	2.50	Government	120.00
Entrepreneurs	42.50	Entrepreneurs	92.50
Citizens	267.50	Total projects "D"	<b>212.50</b>
<b>Total capital "A"</b>	<b>312.50</b>	<b>E-urrency in hand</b>	
<b>Loans</b>		Citizens	267.50
Entrepreneurs	82.50	Entrepreneurs	32.50
Government	117.50	Banks	100.00
<b>Total Loans "B"</b>	<b>200.00</b>	<b>Total E-currency in hand "E"</b>	<b>400.00</b>
<b>Banks Deposits "C"</b>	<b>300.00</b>	<b>Loans Granted</b>	
		Banks "F"	<b>200.00</b>
<b>GRAND TOTAL (A+B+C)</b>	<b>812.50</b>	<b>GRAND TOTAL (D+E+F)</b>	<b>812.50</b>

Table 6

From the above it can be deduced that in three rotations of income cycle, projects worth \$212.50 are created resulting in boom in the economy and the increased employment opportunities. Currency holding of the citizens and entrepreneurs were increased from approximately \$100.00 to \$300.00 that means every rotation of the cycle resulted in the increase in the currency holding by \$100.00. This increase in currency holding will increase standard of living, per capita income and purchasing power of the citizen making their economy strong. We can clearly see that despite these repeated rotations of the income cycle the net currency holding with Bank will remain the same as was in the beginning i.e., \$100.00. Therefore this income cycle can be rotated to any number of times because rotation is not affecting the volume of *e-currency* holding with banks. Hence, by increasing the rotation of the Income Cycle any country can easily become self reliant, rich and free from socio-economic crimes. In fact, in this closed systemic phenomenon speedier the transactional cycle i.e., more the money rotates higher the economic growth results. No monetary inflation as *e-currency* in hand with citizens and entrepreneur \$300 is equal to bank deposits \$300 making the intrinsic value of money at par to their face value.

Now in the Balance Sheet Form:

**GOVERNMENT: G1**

Liabilities	Amount	Assets	Amount
Loan from			
B1	22.50	Projects	120.00
B2	95.00	Net Loss from Balance of Trade	50.00
Capital	2.50	New Projects	50.00
New Loan B1	52.50		
New Loan B2	47.50		
Total	220.00	Total	220.00

**BANKS: B1 & B2**

Liabilities	B1 (Amount)	B2 (Amount)	Assets	B1 (Amount)	B2 (Amount)
Deposits			Loan granted to		
E-currency Deposit with	50.00		G1	75.00	142.50

Foreign Government					
C1	24.75	44.00	E1	27.50	
C2	27.75	51.50	E2	27.50	
C3	7.50	36.50	E3	27.50	
E1	20.00		E-currency in hand	52.50	47.50
E2	22.50				
E3	20.00				
C4	21.50	22.50			
C5	16.00	35.50			
Total	210.00	190.00	Total	210.00	190.00

#### ENTREPRENEURS: E1, E2 & E3

Liabilities	E1 (Amount)	E2 (Amount)	E3 (Amount)	Assets	E1 (Amount)	E2 (Amount)	E3 (Amount)
Loan from B1	27.50	27.50	27.50	Projects	30.00	32.50	30.00
Capital	22.50	27.50	22.50	E-currency with B	20.00	22.50	20.00
Total	50.00	55.00	50.00	Total	50.00	55.00	50.00

#### CITIZENS: C1, C2, C3, C4 & C5

Liabilities	C1 (Amount)	C2 (Amount)	C3 (Amount)	C4 (Amount)	C5 (Amount)
Capital	69.00	81.50	44.00	44.00	51.50
Net Profit		0.25			
Total	69.00	81.75	44.00	44.00	51.50
Assets	Amount	Amount	Amount	Amount	Amount
E-currency with B1	4.75	12.75	5.00		
E-currency with B2				7.50	7.50
E-currency received from G1	54.00	51.50	19.00	16.50	16.50
E-Currency received from E1	10.00	2.50	17.50		
E-Currency received from E2		12.50	2.50	17.50	
E-Currency received from E3				2.50	27.50
Readymade Garments	0.25	2.50			
Total	69.00	81.75	44.00	44.00	51.50

Table 7

1. We can conclude from the above that in *e-currency system*, in some international trade, when there is loss due to negative balance of payment and when Government decides to share the burden exclusively of the loss incurred by not allowing any increase in the price of the commodities, then there will be no inflationary effects. The cushion (*system created money*), created in the form of surplus *e-currency* through rotation in the income cycle, will absorb the loss incurred in international trade. Hence, there will not be any adverse impact on the economy and its income cycle.
2. When Government permits increase in price as the result of international trade loss, this price increase will create inflation. This inflation, in turn, will increase the prices of the commodities as well as salary of the people. Subsequently, the economy will experience a Phillip for increase in price and salary will result in the increase in per capita income. Government and Bankers will not be required to issue fresh *e-currency* to meet this increase in demand because with the rotation of the income cycle the money will be created in the natural course automatically. The principle underlying this phenomenon is that the higher the expenditure is under this cyclical rotation higher will be the economic growth. This is so because there is no wasteful expenditure in this closed system economy and all expenditure are automatically led to be an investment augmenting per capita income, national income and subsequently a qualitative improvement in the living standards of the people. Thus, unlike in the paper currency system, *e-currency enables the economy to use the inflation favorably to catalyze the economic growth leading to the prosperity of the country.*

The consolidated position of the total economy in the form of balance Sheet will be:

<b>Liabilities</b>	<b>Amount</b>	<b>Assets</b>	<b>Amount</b>
<b>Capital</b>		<b>Projects</b>	
Government	2.50	Government	220.00

Entrepreneurs	72.50	Entrepreneurs	92.50
Citizens	287.50	Total projects "D"	<b>312.50</b>
<b>Total capital "A"</b>	<b>362.50</b>	<b>E-currency in hand</b>	
<b>Loans</b>		Citizens	287.50
Entrepreneurs	82.50	Entrepreneurs	62.50
Government	217.50	Banks	100.00
<b>Total Loans "B"</b>	<b>300.00</b>	<b>Total E-currency in hand "E"</b>	<b>450.00*</b>
<b>Banks Deposits</b>	<b>350.00</b>	<b>Loans Granted</b>	
<b>E Currency with Foreign Government</b>	<b>50.00</b>	Banks "F"	<b>300.00</b>
<b>Total Bank Deposits "C"</b>	<b>400.00</b>		
<b>GRAND TOTAL (A+B+C)</b>	<b>1062.50</b>	<b>GRAND TOTAL (D+E+F)</b>	<b>1062.50</b>

(\*Total E-currency is \$500.00, \$50.00 worth of e-currency is with Foreign Government in the form of deficit in balance of payment due to price increase.)

Table 8

The above Balance Sheet illustrates that though net outflow of money to a foreign country in the international trade incurring a loss of \$50 has affected the economy by the loss of \$50 in total amount deposited with the bank and the bank is holding \$50 less than what it would have held when there was no loss in international trade, but, this loss is adjusted from the money created through rotations of the income cycle with the help of *debt-financing* technique adopted by the Bank.

Most interesting part in this process is that the initial amount of \$100 at the time of introduction of e-currency system is still intact with the Bank available for further rotation of the income cycle. This means that no additional *e-currency* is required for circulation. Though inflation does arise in the form of price and salary increase, but it is not due to new issuance of *e-currency*.

Such inflation due to price and salary increase effects the economic growth positively without affecting the value of the money adversely.

*The logic for the intactness of the initial amount is that any outflow of money to some outside agency simply requires a mere formality of making a book entry in their accounts with the bank and therefore the loss shown in the system created money in the account book can easily be adjusted without affecting the initial money. Here, it may be mentioned that a system created money is the money created through income cycle rotation with the help of debt-financing technique. Hence, there will not be any problem when that outside agency asks for redemption.*

Let us now see with the help of next stage in the example as to how income cycle and inflation gets affected through the outflow of e-currency by \$50.00. Suppose Bank who is still in a position to grant the deposit money of \$100.00 chooses to loan out the entire amount of \$100.00 to the Government for its various projects, Citizens and entrepreneurs get the benefit of it from the government for their services rendered to the government in their different capacities. This investment of \$100.00 by the government in its various projects will benefit- Citizens say \$8.00 each and Entrepreneurs say \$20.00 each, in the given example for their services to the projects.

The resultant figures will be as:

GOVERNMENT: G1

Liabilities	Amount	Assets	Amount
Loan from			
B1	75.00	Projects	170.00
B2	142.50	Net Loss from Balance of Trade	50.00
Capital	2.50	New Projects	100.00
New Loan B1	52.50		
New Loan B2	47.50		
Total	320.00	Total	320.00

BANKS: B1 & B2

Liabilities	B1	B2	Assets	B1	B2

	(Amount)	(Amount)		(Amount)	(Amount)
Deposits			Loan granted to		
E-currency Deposit with Foreign Government	50.00		G1	127.50	190.00
C1	24.75	52.00	E1	27.50	
C2	27.75	59.50	E2	27.50	
C3	7.50	44.50	E3	27.50	
E1	40.00		E-currency in hand	52.50	47.50
E2	42.50				
E3	32.50	7.50			
C4	21.50	30.50			
C5	16.00	43.50			
Total	262.50	237.50	Total	262.50	237.50

#### ENTREPRENEURS: E1, E2 & E3

Liabilities	E1 (Amount)	E2 (Amount)	E3 (Amount)	Assets	E1 (Amount)	E2 (Amount)	E3 (Amount)
Loan from B1	27.50	27.50	27.50	Projects	30.00	32.50	30.00
Capital	42.50	47.50	42.50	E-currency with B	40.00	42.50	40.00
Total	70.00	75.00	70.00	Total	70.00	75.00	70.00

#### CITIZENS: C1, C2, C3, C4 & C5

Liabilities	C1 (Amount)	C2 (Amount)	C3 (Amount)	C4 (Amount)	C5 (Amount)
Capital	77.00	89.50	52.00	52.00	59.50
Net Profit		0.25			
Total	77.00	89.75	52.00	52.00	59.50
Assets	Amount	Amount	Amount	Amount	Amount
E-currency with B1	4.75	12.75	5.00	7.50	7.50
E-currency received from G1	62.00	59.50	27.00	24.50	24.50
E-Currency received from E1	10.00	2.50	17.50		
E-Currency received from E2		12.50	2.50	17.50	
E-Currency received from E3				2.50	27.50
Readymade Garments	0.25	2.50			
Total	77.00	89.75	52.00	52.00	59.50

The consolidated position of the total economy in the form of balance Sheet will be:

<b>Liabilities</b>	<b>Amount</b>	<b>Assets</b>	<b>Amount</b>
<b>Capital</b>		<b>Projects</b>	
Government	2.50	Government	320.00
Entrepreneurs	132.50	Entrepreneurs	92.50
Citizens	327.50	Total projects "D"	<b>412.50</b>
<b>Total capital "A"</b>	<b>462.50</b>	<b>E-currency in hand</b>	
<b>Loans</b>		Citizens	327.50
Entrepreneurs	82.50	Entrepreneurs	122.50
Government	317.50	Banks	100.00
<b>Total Loans "B"</b>	<b>400.00</b>	<b>Total E-currency in hand "E"</b>	<b>550.00*</b>
<b>Banks Deposits</b>	<b>450.00</b>	<b>Loans Granted</b>	
<b>E Currency with Foreign Government</b>	<b>50.00</b>	Banks "F"	<b>400.00</b>
<b>Total Bank Deposits "C"</b>	<b>500.00</b>		
<b>GRAND TOTAL (A+B+C)</b>	<b>1362.50</b>	<b>GRAND TOTAL (D+E+F)</b>	<b>1362.50</b>

Table 9

We can clearly conclude from the above discussion that despite the money outflow of \$50.00 in the previous instance, bank still could grant \$100.00 (without introducing/printing new *e-currency*) to the Government/ entrepreneur. Economy still gets benefit from another continuous rotation of income cycle by \$100.00. Citizens and Entrepreneurs could increase their deposit base by \$100.00 further, similarly, the worth of the Government project is appreciated by \$100.00 resulting in the increase in employment opportunities, better standard of living, per capita income and national income. In fact the economy is experiencing all types of booms. Bank still has the net deposits of \$100.00 that means, banks are still in a position to grant further this \$100.00 as loans. This capacity of the bank to grant loan and having the deposit base intact will be a permanent feature. That leads us to conclude that the higher is the expenditure/ investment



higher will be the country's economic growth. This way all the present lacuna of the paper currency system can easily be mitigated rendering the economy in a healthier and prosperous state. Inflation in *e-currency system* can therefore be used as an effective and essential economic tool for the prosperity of the nation and its habitat.

## **References:**

### **1. Inflation defined**

“Monetary Inflation: It is simply the artificial expansion of the money supply, and is historically the primary engine of inflation. It pleasantly enables demand to increase before any increase is produced in supply.

Price Inflation: It is the market's natural unpleasant “deflationary” reaction to monetary inflation. By reducing the purchasing power of all currency in circulation, and by reducing the purchasing power of credit based on assets, rising prices powerfully if somewhat belatedly counteract the pleasant artificial increase in purchasing power that is the purpose of monetary inflation. Price inflation tends to reduce demand and increase supply.”

Blatt, Dan; “Understanding Inflation So, What's To Worry About, Anyway?” in FutureCasts online magazine, [www.futurecasts.com](http://www.futurecasts.com), Vol. 6, No. 2, 2/1/04

2. See: Sharma, Ashish . *Has The Time For Electronic Currency Come*, Book Surge, South Carolina, U.S.A, 2004.

3. Sharma, Ashish.. “*Has The Time For Electronic Currency Come? Imagining E-currency future for the money*”, in International Journal of Community Currency Research, Volume 9, at

<http://www.le.ac.uk/ulmc/ijccr/vol7-0/IJCCR%209no2.pdf> , (ed.) Colin C. Williams, 2005,pp. 21-38.

- 4 Sharma, Ashish and Dr. Kashyap Anand., “*Need for the Electronic-Currency System*”, in Global Strategies Forum of World Future Society, at <http://www.wfs.org/gforum.htm> (ed.) Cindy Wagner, 2008, U.S.A.