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The New Concept of Money: From Record-Of-Value (Rov) To Record-Of-Entropy (Roe)

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28 November 2016

Online at <https://mpra.ub.uni-muenchen.de/82615/>
MPRA Paper No. 82615, posted 12 Nov 2017 06:47 UTC

THE NEW CONCEPT OF MONEY: FROM RECORD-of-VALUE (RoV) TO RECORD-of-ENTROPY (RoE)

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ABSTRACT

In this paper, we shall analyse the concept of Money. Presently money is viewed as Record-of-Value i.e. money is used to capture value created in any activity. We start by defining money. Then we discuss the way energy is spent in creating value is measured using money.

We also assess the uses of money by viewing it as a Record-of-Value entity. We discuss about the parallel economy which impacts mainstream economy in various ways. Economic Entropy is then defined and discussed.

An equation that relates Economic Entropy, value based money and other economic parameters is proposed. The various advantages of viewing money as a Record-of-Entropy are debated. Finally, the paper concludes as to which concept is best suited to present day and future economic scenarios.

INTRODUCTION

Money is any item or verifiable record that is generally accepted as payment for goods and services and repayment of debts in a particular country or socio-economic context, or is easily converted to such a form ^[1].

Money is primarily used as a unit to measure the value of goods, services and other transactions. More the cost more is the value of that product or service.

Money is the value society collectively attributes to something based on several factors. Nature knows no money, understands no money. Nature only recognises activity and transfer of energy. It is this value that money eventually tries to measure.

Take the case of the farmer. The farmer will have toiled hard and put in lot of work into growing his crops. The farmer has to procure the energy (in the form of labour, sowing, harvesting etc.) from somewhere.

Now, to procure crops from the farmer, one needs to compensate her for the energy that she has used to grow the crops and bring it to the market. That is where measuring of value comes in.

Both the buyer and the farmer will have to agree on a common measure of value which can help compensate for the farmer's expenditure of energy and buyer's need for for the crop. Money helps find this common measure.

Gold was one of the earliest metals to be discovered and used by man. Gold is relatively rare, lustrous and chemically inert. These and other properties make Gold an ideal measure of value.

As such, Gold became a standard against which one could measure wealth. Gold, being a rare element, is very difficult to obtain. One has to spend a large amount of energy to

obtain even a few grams of Gold (almost a ton of dirty gold ore yields about one gram of gold.)

Now why does a rare material become valuable? That is because; a lot of energy goes into extracting it. Basically we come back to the same logic that money in the form of rare, precious metals captures the value of energy needed to extract them.

Man had to go to the remotest places and dig the deepest holes in the ground to obtain these precious things. He had to protect it from thieves, invading armies, dacoits, and what not. All of this has a cost and all add up to the value of Gold (or the particular precious metal or stone).

Wealth is created by the flow of money.

The more money circulates in the economy, more is the activity. More the activity, more the energy spent more the entropy.

Because money is used primarily as a Record-of-Value (RoV), it has many uses-

1) It is used as a medium of Exchange i.e it is exchanged for goods and services as it captures the value created i.e. work or energy spent to create the value.

2) Standard or deferred payment- The captured value in the money is used to settle debt

Because money is used as a RoV, it is used to measure various economic parameters like GDP, inflation etc., which indicate the health of a nation's economy.

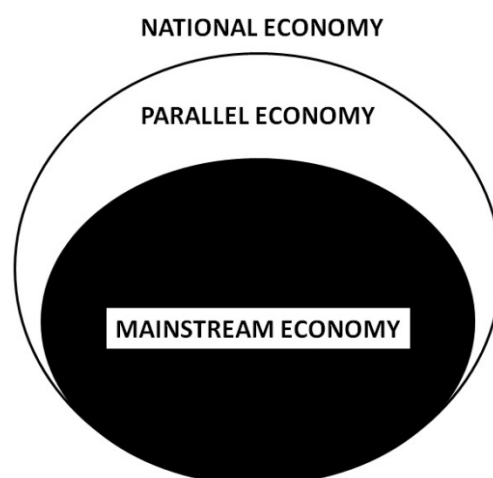
But every transaction or activity involving money transaction does not add or create value. Many activities are value neutral. Many other activities in fact destroy economic value (for example, bombing a city will destroy value that was created in constructing buildings and providing employment to people).

By viewing money purely from RoV perspective, we fail to measure the size of a parallel economy that give rise to several anti-social ills like trafficking, gun and drug running, smuggling and a host of other illegal activities.

The parallel economy does not encompass the Mainstream economy, but along with the mainstream economy it makes up the national economy.

And because we fail to measure parallel economies precisely (due to the RoV concept) we cannot predict or control the impact of the parallel economy on the mainstream economy.

Consequently, we see many countries which have unbridled inflation due to their large (but unmeasured) parallel economies.



Entropy: It is a measure of disorder within a macroscopic system. Thermodynamically, entropy is related to energy systems. But since money measures energy sent to extract value; we can use money to capture the amount of entropy in a given economic system. In the present case, we will refer to economic entropy simply as 'entropy'.

A sovereign Authority keeps track of all the value generated in an economic system. Parallel economies secrete away this value from the eyes of the Government. This undocumented value manifests as 'Black Money' or unaccounted money, fuelling a parallel economy.

Money if used to measure entropy in an economic system will be able to capture every economic activity irrespective of value addition or negation. This will give us a precise measure of important economic parameters.

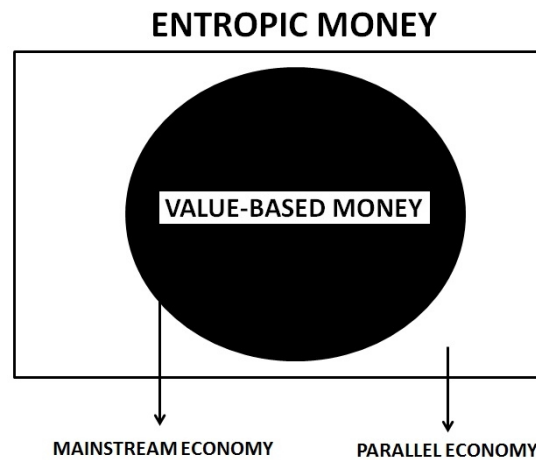
We can also predict the amount of strife that a country faces on account of the destructive power of money. Eg- Strife in Africa caused due to civil wars, blood diamonds etc.

Any event that involves the exchange of money can be considered an entropic activity. Even destruction of Value is an addition to the entropic state.

Why Fiat money has higher inflation rates?

Fiat money, not backed by any commodity tends to add entropy to a system without adding value. As such it increases the amount entropy circulated in the economic system.

Entropic money subsumes value-based money in any system. In such a scenario, the Entropy to value ratio of money becomes important.



The Entropy:Value Ratio (EV Ratio) of money has deep-meaning correlations with several economic parameters.

If the Entropy:Value Ratio (EV Ratio) in an economy is high, it indicates a larger parallel economy. Consequently, inflation rate is also higher in an economy with higher EV ratio.

Higher EV ratio values actually indicate adverse economic conditions but not always. It has to be seen in perspective with other parameters to get an accurate picture of an economy.

For Eg- Higher EV ratio with lower Tax Gap indicates a high activity fiat-economy.

This concept where money is used to measure the entropic levels in the economy is known as the Record-of-Entropy concept.

The equation concerned with relation between entropy, value and any economic parameter (x) is as follows.

$$\frac{E}{V} = K.f(x)$$

Where E is Economic Entropy

V is value of the Economy

K is a constant

f(x)= 1/x or x [based on the specific parameter in question]

The value of E can be inferred by assessing the total money supply in an economy.

The Value of V can be arrived at by evaluating the money amenable to taxation in that particular economy.

There are several advantages of the RoE concept of money-

- 1) We can measure every transaction event irrespective of whether it adds value or not.
- 2) The inflation rate has a component of entropy in it. This can be measured by the RoE concept
- 3) We can measure the economies of nations whose administration and governance systems have seemingly broken down
- 4) Even barter exchanges can be measured in terms of ROE

5) With the transformation of cash economy to a digital economy it will be far easier to measure entropy and get an exact idea of the economic parameters.

6) The real value of a currency can be fixed by knowing the entropy levels of the economy of that nation.

7) The future will belong to the Internet-of-Things leading to the rise of Artificial intelligence. The Entropic concept of money will provide an objective basis on which machines can understand and record transactions and also communicate and interact with humans and other machines.

CONCLUSION

We see that the Record-of-Value concept has been used to measure economic parameters. But it does not help to measure the unaccounted transactions or activities that do not create any value.

In fact, RoV concept has led to wayward and inaccurate economic predictions leading to flawed policy approaches. One can observe that RoV also does not take into account the emerging digital revolution.

On the other hand the RoE mconcept of money is both scientific and objective in its approach to measuring various economic parameters. It also has scalability which makes it an appropriate model for predictive economics. This concept also has the advantage of using existing economic parameters to obtain necessary results. Thus it will be ideal to use the RoE concept of money for econometric purposes.

REFERENCES

[1] Mishkin, Frederic S. (2007). The Economics of Money, Banking, and Financial Markets (Alternate Edition). Boston: Addison Wesley.