

# **Non - Money**

**On a post-monetary economy with network-based matching**

by

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## On money

Before arguing against money, let's first try to define what it is. Fortunately, the Bank of England provided a pretty good explanation. In the latest Quarterly Bulletin 1/2014 Michael McLeay, Amar Radia, and Ryland Thomas of the Bank's Monetary Analysis Directorate explore the role of money in the modern economy. They adopt the concept of endogenous money and debunk many standard narratives. This, coming from a highly official place, like the bank of England, can be considered a once in a decade historical turn.

Here's a very brief summary of their main points:

### **Money is debt**

*"Money in the modern economy is just a special form of IOU, or in the language of economic accounts, a financial asset."*<sup>1</sup>

*"Because financial assets are claims on someone else in the economy, they are also financial liabilities — one person's financial asset is always someone else's debt."*<sup>2</sup>

What we use as money is (mostly private) debt transformed into public currency. The key issue in this type of money is not its intrinsic value but its future reliability. As long as one can safely assume, that somebody else will accept a piece of paper, a coin, a number or whatever, it keeps circulating.

This is a question of trust.

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<sup>1</sup> Michael McLeay, Amar Radia, Thomas Leyland: Money in the modern Economy. An Introduction. BoE Quarterly Bulletin 1/2014, p.6

<sup>2</sup> BoE Quarterly Bulletin 1/2014, p.7

## **Money is a social institution**

*"Money is a social institution that provides a solution to the problem of a lack of trust. It is useful in exchange because it is a special kind of IOU: in particular, money in the modern economy is an IOU that everyone in the economy trusts."*<sup>3</sup>

## **Banks create money by granting credit**

*"When a bank makes a loan to one of its customers it simply credits the customer's account with a higher deposit balance. At that instant, new money is created."*<sup>4</sup>

To recognize the effect of this definition, one has to take a look back at the theoretical approaches that were in use before. These are mainly the conceptions of money as a commodity, and more recently the loanable funds approach. Money as commodity still reigns throughout Marxist positions. But also, it is the basis of bitcoin. In this respect the digital currency follows a very old-fashioned approach, which may have added to its recent problems.

The loanable funds approach was based on the idea that credit equals savings, and it was one of the pillars of classical economic theory. The position now adopted by the Bank of England turns a whole range of classic monetary assumptions on its head. Especially when it comes to the creation of money and the central banks' ability to control the amount of money.

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<sup>3</sup> BoE Quarterly Bulletin 1/2014, p.7

<sup>4</sup> BoE Quarterly Bulletin 1/2014, p.11

## **Critique of Money**

Money itself may be criticized from two perspectives:

It installs a system of power, according to Bichler/Nitzan, that far from creating an equilibrium, according to classical economic theory, instead fosters growing inequality and schemes of exploitation.

Instead of serving society with a fair distribution of goods, the ever-growing need for more money has transformed our current economy first into a large-scale extraction scheme, and then, after its demise, into a huge Ponzi-bubble. The form of financial capitalism unleashed after the breakdown of the so-called communist block, moves closer and closer to exactly that state which Marx foresaw. We entered a new phase of monetofeudalism with a reappearing class struggle, fought by the rich against the poor. (Kalecki)

The other critical perspective relates to a paper written by John Maynard Keynes in 1930, in which he imagines the economic situation of 2030: "the economic problem may be solved, or be at least within sight of solution, within a hundred years." With the economic question, he refers to scarcity of resources, lack of proper allocation and distribution, and the despicable overall situation of human life under the economic conditions as they were.

In hindsight, one could well state, that money is one of the driving forces behind these problems. Maybe in a different way than Keynes could have imagined, we might indeed find ourselves at the point where a completely different solution to the economic problems appears technically feasible.

## Non-Monetary Economy

Most of the alternative models take money, or a money-like substitute, for granted. As if a general equivalent was a necessary medium to organize exchange.

Taking a closer look at the economical relations, this assumption is more than doubtful. Fundamentally, economy has to deal with the allocation of work and the distribution of goods. This task can be reformulated as a classical matching problem within a wider network.

Key questions are: who does what? and who gets what? To solve these questions amongst a huge amount of economic agents, money served well for a long period of time. It allowed for “settle and compare” transactions of all different kinds.

Looking at our present and future technical abilities though, there might be other, better, and more efficient modes of matching and distributing.

We're not talking about a system of planning economy. And neither about any form of substitute money.

Our proposal is based on the technical possibility of an algorithmic, data-rich matching algorithm. It hinges on the idea that each economical entity may receive as much goods from outside as she or he or it gives to the outside. Yet, this assumption already poses several questions:

- How do we calculate this "as much." How do we compare things?
- Who can be an economic agent?

The second question is easy to answer:

Whoever generates output and input towards the whole may be regarded as an economic agent: a person, but also a house, or the state, or even a temporary activity by someone. This implies that there doesn't need to be ownership, for example. Things being rented or shared - like houses or cars - may simply define their own needs, in maintenance, housekeeping etc.

## **Value without General Equivalent**

The question of value is more difficult to answer and leads straight to some of the core issues.

To calculate a value, it seems, we're in need of an equivalent measure. But that would constitute a substitute for money, which is precisely what we want to avoid.

Now, to begin with, our equation of transaction does not require a general value. A value can be something entirely limited to each economic agent. Goods may differ in value for different economic agents and on different occasions. In fact, this has always been the case. The idea, that something has a general value only came up after the introduction of money in the first place. Very often, if not always, it contradicts daily experience.

Economic value seems to appear in whatever exchange. If person A does something which actor B likes, both assign this event or product a value. But again, there is no need to have these two values being the same. The only function necessary for performing the exchange, is the matching - to find a solution to the question, who gets what A has to offer. If there is nobody in need of A's product, it may still have a value for A. But as social instance it remains unrealized.

To limit expectations at this point: we do not have a ready-to-go solution for all these questions at hand. We are still at the initial stages of postulating, that a system of this kind could be possible at all.

Back to the value: the core instance of valuation is the single agent. With the individual value - comprising needs, desires or offers - the matching algorithm is triggered. Beyond the personal value, there is no longer the need to flatten the system of value to one scale or one dimension. Rather it would be possible, to add more dimensions of different types of values.

There could be a value depending on track record. Like: if one person already has 5 flats, she or he might not need another one, even if there is a manifest desire. Using flats for living would always precede using flats for collecting.

Or there could be a sustainable value, that evaluate the longer term consequences of products or events.

Then there could be a community-based value being derived from what the social environment likes or dislikes.

In the way, one arrives at a multidimensional vector of value, without having the need to translate all these different types of valuation into one general equivalent.

At the core of the system lies the matching algorithm. Far from realizing a planned system, it has to present each economic agent with the present possibilities and options. It has to find ways to fulfil desires and to offer opportunities. All this needs to be calculated immediately upon request, more efficient and less intruding than our current money-based system.

The whole idea would not only be about managing situation of emergency, but also about a practice of mediated social distribution that allows for greater freedom, better common wealth, and more efficient solutions than the current state of things. Only under the condition that people profit from a moneyless matching system, one might seriously consider exchanging the money-based economy for a non-money based one.

This leads to some more general questions:

How do we deal with infrastructure? And how about innovation? How can we imagine a transition from the current system to a non-monetary economy? We just want to briefly hint at some possible answers. All these topics are going to be elaborated a bit more in depth in our upcoming book.

On infrastructure: the question which infrastructure has to be built and maintained is a political one. Regardless whether the political entity is still some type of state or another organisation of community, once a political decision is made, the necessary works can be allocated. Needless to say that there is no taxation needed, as the necessary tasks just have to be entered into the matching routine.

Innovation may be redefined as the desire or the offer of things not yet present. If many people subscribe to a desire, they may activate the according activities and may even be included in the process of research and development. The result would be something between crowdfunding and collective invention.

The third and last issue relates to the question of transition: how do we get from our system to the other. It is obvious that a moneyless system would radically impede all attempts to hoard or store value.

The current inequality of wealth would no longer be possible. It sounds like only a revolution could lead to this type of change. But a revolution is only one of very many forms of transition, and itself a romantic phantasm tied to the existence of a state. Revolutionary transitions are neither the only means, nor very effective when it comes to achieving a goal. Other modes of transition could be a step-by-step hollowing out of the old system, whereby single communities decide to leave the money-based world.

## **Theory**

Given the state of economic theory, very few approaches get back to general questions of distribution and allocation, which would allow for questioning the very concept of money.

But still, two different lines of thought could be indicative for that purpose: One would be to describe the whole economic system in terms of a non-monetary institution, or in other words, as a single firm.

From here, one could argue along Ronald Coase's theory of the firm, and his approach towards transaction costs. In a system with low internal versus high market-based transaction costs, the single firm could actually extend over the whole globe. Indeed, a non-profit community-based company could install the first instance of a non-monetary economy. In general, the firm approach would leave us with the undesirable outcome of a centralized planning system, and a lot of administrative authority of management in place.

The other approach would take the issue from the opposite side. Instead of driving money out of the system, it would be nested at the most elementary events. This form of money would only exist in the moment of a single transaction, calculating all past record and the various dimensions into one currency that exists just for a split second. This system has some similarities to bitcoin, insofar as it could use the block-chain mechanism to record each single agent's transactions.

Both approaches would come with the drawback of being a data-rich system, prone to all kinds of surveillance. This amount of data and memory necessary is one of the major issues with any system that tries to avoid a general equivalent and apply matching based on past transactions.

There is a third approach that we still have to evaluate. The paper by the Bank of England that we cited before points not only to a different approach towards money, but also mentions another source for imagining an economy without money at all.

In 1996, Narayana Kocherlakota wrote a paper with the title "Money is Memory."<sup>5</sup> There, he proved *"any allocation that is feasible in an environment with money is also feasible in the same environment with memory."*<sup>6</sup> Further he states that *"from a technological point of view, money is equivalent to a primitive form of memory."*<sup>7</sup> ... *"Moreover, in at least some environments, memory may technologically dominate money."*<sup>8</sup>

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<sup>5</sup> Kocherlakota, Narayana: Money is Memory. Federal Reserve Bank of Minnesota. Research Dept. Staff Report 218. October 1996

<sup>6</sup> Kocherlakota p.1.

<sup>7</sup> Kocherlakota p.1

<sup>8</sup> Kocherlakota p.27

Now, looking at this hypothesis in the light of the recent book by David Graeber, this argument comes with a striking historic parallel. As money did not grow from a commodity, but from an annotation system transferring older practices of credit into a medium of memory. Seen from this perspective, one could regard the epoch of money as a transitional phase, during which data technologies were not able to keep track with the extension of the overall amount of transactions in a given economic environment. And money provided a shortcut to bridge this gap.

As amply demonstrated not only by memory based currencies like bitcoin, but also by the storage capacities of institutions like the NSA, we're about to leave this shortage behind. Technically spoken, our society is ready to implement a memory system that could replace money altogether.

Whether this system will play out in our favour, or whether it will install new and reproduce old modes of exploitation and inequality might be the issue of the coming struggle.