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The New Frontier in Payment Systems:

Virtual Currency Schemes, the C3 Uruguay case and the Potential Impact on SSE

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The New Frontier in Payment Systems: Virtual Currency Schemes, the C3 Uruguay case and the Potential Impact on SSE

by

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Table of Contents:

Our dilemma is that small design actions can have big effects—often unexpectedly—and designers have only recently been told, with the rest of us, how incredibly sensitive we need to be to the possible consequences of any design steps we take
John Thackara.

People who say it cannot be done
should not interrupt those who are doing it.
Jack Canfield and Mark Victor Hansen

1 Introduction

Harris & Harris Group Professor at MIT Sloan School of Management Andrew Lo summarized the starting assumption from which I will define the leading perspective for the following think piece: "One of the most significant consequences of the Financial Crisis of 2007–2009 is the realization that the intellectual framework of economics and finance is incomplete in several respects." (Lo, 2011:39). Indeed, after the crisis the international monetary system is still on the way of recovery through the implementation of conventional monetary, banking and financial policy instruments. The latter are demonstrating as poorly effective, esp. if one looks at the prospects for recovery within the productive parts of the economy, namely the SMEs sector which gives the greatest amount of jobs in advanced economies while decisively contributing to the growth of emerging ones. By contrast, we are today witnessing a prolonged recessive state of the business cycle with foreclosures and bankruptcies and the social problems they naturally beget.

However, the prognosis for the mid-term is in the form of more austerity measures justified by the need to keep credit tight and achieve deficit and inflation targeting benchmarks. Such policies impels further credit contraction with the impossibility to inject money where and when it is most needed. Thereby, both monetary orthodoxy and the exclusive implementation of modern bank money in the form of different negotiable instruments are the main catalysts for the ignition of Second Wave structural crises that we have been experiencing for the past few years, "through a ferocious circle making a victim of the real economy: Bad banking balance sheets => credit restrictions => recession => worse bank balance sheets => further credit restrictions and so the spiral downward goes". In order to contrast such contractive trends of the money supply, the main instrument that orthodoxy offers is to bail-out banks at the expense of the average taxpayer (cf. the TARP Program in the US or the ESM in the EU).

Indeed, monetary authorities are responding to the crisis with the only way in which the dominant paradigm prescribes, i.e. after the crash, the system is being repeatedly re-inflated for building, this time, a sort of 'debt bubble':

"The irony is that, as soon as governments borrow these large sums from the financial system to save the system itself from bankruptcy, the financial system concludes that governments are now too indebted and need to be 'disciplined'. [The] fiscal cost of bailing out the banking system is added to output losses with an automatic drop in tax income. Governments thus have no other option than to increase their indebtedness. This, in turn, results in the downgrading of the creditworthiness of affected countries and makes their debt more expensive. Where does all this lead to?"(Lietaer, Arnspenger et al., 2012: 56)

This leads to an unsustainable fiscal pressure that will not be bearable in the mid-long-term. According to a study conducted by the Bank for International Settlements entitled The Future of Public Debt: Prospects and Implications, "fiscal problems confronting industrial economies are bigger than suggested by official debt figures that show the implications of the financial crisis and recession for fiscal balances. [The] recent sharp rise in risk premiums on long-term bonds issued by several industrial countries suggests that markets no longer consider sovereign debt low-risk." (Cecchetti et. al., 2010: 16) And this becomes a problem, esp. in those countries whose economies simultaneously experience recessive downturns.

How is it possible that after what the IMF identified as a total of 425 systemic crises since 1970, i.e. the sum of banking (145), currency (208) and sovereign (72) crises - an average of 10 countries affected each year (Lietaer, Arnspenger et al., 2012) - the only solution by mainstream monetary theorists and policymakers is to repeat at a global scale, in substance, the same procedures that demonstrated as flawed for hundreds of times in the past few decades? The answer perhaps lies in what Lietaer and Arnspenger call a 'monetary blind spot' at the epistemic and methodological levels within the dominant monetary paradigm and affecting almost everybody. The metaphor of the monetary blind spot is particularly significant in that the human eye presents indeed 'a small portion of the visual field of each eye that corresponds to the position of the optic disk (also known as the optic nerve head) within the retina.' In the same way, our average awareness of the monetary paradigm in which we are immersed and that define almost every facet of our life, i.e. our 'sight', does not allow for a full acknowledgement of the structure of the paradigm itself and to appreciate the extent to which his modification could impact on one's socio-economic life.

According to Lietaer and Arnspenger, the phenomenon has three layers: first the "hegemony of single-currency thinking" that corresponds to the traditional monopolistic and top-down system of debt at interest, which accompanied humanity for the past few millennia (Graeber, 2009). Secondly, the ideological war between capitalism and communism: in this case the political antagonism funneled the attention of the masses on the political arena, rather than the monetary one. A usually understated datum that demonstrates this point is the fact that both the ideological wars between USA and Soviet Union in the twentieth century or that one between USA and China in the twenty first

century see two countries that differed in everything but the monetary systems. In all cases the latter reflects the same blueprint as prescribed by the principles of central banking. Indeed, today representatives of the central banks of all these three countries meet regularly at the BIS for coordinating policies at the international level. Third, an institutionalized *status quo*, in which a professional tax bureaucracy can cause significant damage to the institutionalization of innovative monetary vehicles.

The very exit and solution to all these problems at once is attainable only with a sort of quantum leap in the evolution of our relation with money and the ways in which we can conceive them. In other words and in parallel with what happens in other dimension of the information society, ICT can be used for increasing the possibilities of communication of the medium of exchange *of* information about economic matters, roughly what we all mean by 'money'. What I claim from the outset is the necessity to adapt to change that all the sectors of the economy have experienced with the informatization of the productive processes has to follow also for socially sustainable practices promoted by monetary and financial innovations. For instance, the development of high frequency trading documents this in a free-market oriented fashion (Aldridge, 2010). As I will argue more in detail in the following, not only within orthodox monetary economics and finance, but also as a new set of tools for the enhancement of best SSE practices, currency design needs to be developed sustainably.

This is already possible thanks to a sort of stigmergic mutuation of software design principles for the innovation in the world of payment systems that are coming from efforts of the Complementary Currency Movement, which tangles instances such as the needs to insulate regional economies with new developments in ICT. As the Governor of the Bank of England, Sir Mervyn King stated in a speech in 1999, "the heirs of Bill Gates would have out the heirs of Alan Greenspan out of business" (King, 1999 - quoted in *The Guardian* - http://bit.ly/MBncya). Indeed, King stated that "the digital age offers commercial parties to emit a digital means of payment backed by private financial arrangements" (*Ibid.*). In effect, signs of a paradigm shift in the monetary domain are more and more evident today and also central authorities cannot anymore ignore them: for example, The European Central Bank as produced a paper as for October 2012 with no juridical prescriptions on Virtual Currency Schemes (ECB, 2012) while the new regulatory 'guidance' for Virtual Currency Systems enacted in 2013 by the FINCeN (the US based Financial Crimes Enforcement Network - http://1.usa.gov/YOl6R3) gives sings of a wish to charter the legal territory for these new type of moneys.

Within this sketchy scenario, I will now unfold the latest developments in the field with a particular attention to giving the reader a general overview on the main issues at stake while focusing on a peculiar case study whose features allow for a cross sectional analysis of the topics of interest for the audience at SSE conference. Indeed, by taking the pace from the Commercial Credit Circuit or C3 designed for the Uruguayan economy in the

aftermath of the last financial crisis, I will touch upon the underlying technologies that allow for this alternative, or heterodox, approach to currency design and the advantages that they bring for the economies adopting them. In turn, I will present the bulk of problems relating to the implementation of the C3, in particular with an analysis deeply concerned to the structural difficulties that the new currencies impel more in general on the traditional systemic configuration of the monetary and economic system. Finally, I will present my vision on the steps to take for filling the gap between the present non-optimal systemic scenario to a more desirable one. In a nutshell, it makes sense to invest in the development of digital payment systems that can help communities to use the desirable aspects of the digitalization of money. Although they are still under-researched, Virtual Currency Schemes / Systems (hereafter VCS, interchangeably) are promising innovations that, if conscientiously designed, can give desirable outcomes to socio-economic contexts in which SSE is being implemented.

2 The emerging VCS World and STRO's (Social Trade Organization) Cyclos

Advantages of innovation in payment system technology in the form of Virtual Currency Systems beg the question of increasing the choices we have to deal with the transfer of economic value among parties in an economy. POS and card readers such as Square or iZettle, NFC (Near Field Communication technology), and IVR (Interactive Voice Response) are innovations that, if properly implemented, can increase the possibilities for realizing SSE precepts such as alleviate poverty, counteract recession, or still offset the scarcity of purchasing power in regional contexts. In general, VCS present the following features:

(1) They are technologies that can deliver a better tradeoff between effective transfer of value and transaction costs to achieve it. In a SSE perspective, this means banking the *un*bankable and increasing the access to financial services for enhancing the general level of Financial Inclusion. In particular, VCS accounts can be activated directly on the Internet, on mobile phone networks, or still by smart card. In any case, the cost of activation is fairly cheap. A VCS account also offers offline advantages when compared with a conventional bank account: less queuing and a better mobility (e.g. from 'faster' to 'closer'), together with a more efficient administrative control on the side of the payment system provider. All these elements contribute to enhance the degree of socio-economic sustainability in a way that goes beyond the mere access to money.

(2) As Marshall McLuhan would have noticed, the medium of communication through which economic value is exchanged influences the nature of the transaction itself and allows for new possibilities in currency design to manifest. According to the Bank of International Settlements, "once money is completely in the form of digital data, the possibilities to manage transactions and design currencies increase dramatically. In particular, different e-money schemes will vary according to their technical implementation, the institutional arrangements required to support them, the way in which value is transferred , the recording of transactions

and the currency of denomination" (BIS, 1996). As the BIS admitted at the dawn of e-money design "electronic money is difficult to define because it blends particular technological and economic characteristics" (Basel Committee 1998). Thus, also digital money enjoys the most characteristic feature of money in general, i.e. the indeterminacy of money (Dodd, 1995) in that it leaves open a bigger and bigger space for innovative experimentation, esp. as VCS, whereby the currency acts only within a closed digital environment and does not have a direct link with conventional money.

(3) VCS can be designed in order to increase the Local Multiplier Effect in regions wherein a higher velocity of circulation of money is most needed, be that in a national economy or in a macro-regional one such as the European Union. Indeed, either the Uruguayan case study under examination in this think piece or the proposal for a *Geuro* for Greece on August 2012 goes exactly in this direction.

(4) VCS can be designed in order to lessen the burden of the costs of credit in a conditioned way: with conventional money, the costs of credit becomes part of the product's price while VCS allow for a re-distribution of costs within the supply chain.

(5) The possibility to surgically condition the behaviour of currency flow within a VCS enable users to sustain and foster intra-systemic volumes of trade and this can generate additional sources of profits for the commercial sector together with an increased tax revenue for governments.

In the one-dimensional currency thinking of conventional monetary and banking orthodoxies, there is no space for theoretical and concrete / virtual innovation with ICT unless it is oriented to profit making interests. The shift, I will argue in the following sections, should conversely be toward the formalization of an exit strategy from the conventional paradigm imbued of market fundamentalism (Stiglitz, 2009). The issue is in turn of interest also for the operators of the monetary and financial system themselves, since the system is not insulated from the very shocks that it contributes to elicit as the fate of the “securitization food-chain” in subprime crisis has extensively taught (Morris, 2009). The main innovation in these respects is today the fast prototyping of VCSs. A Virtual Currency "is a type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community”. (ECB, 2012). Virtual Currencies are effective in achieving specific economic objectives, in opposition to what happens with the one-size-fits-all approach of authorities managing conventional money. The issuance is decentralized, and their ontology and legitimation might not be more than a series of contracts stipulating an obligation by a