

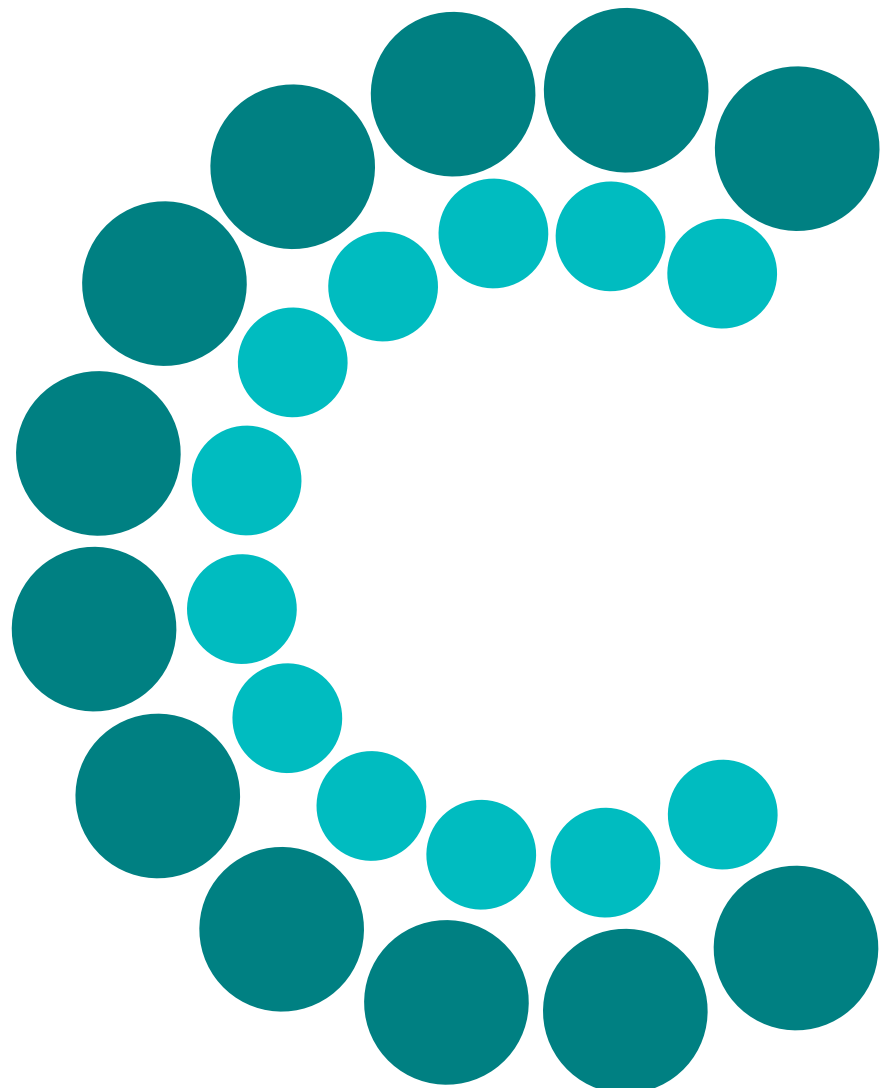
IJCCR

International Journal of Community Currency Research

Volume 16 (2012) Special issue

THIRTY YEARS OF COMMUNITY AND
COMPLEMENTARY CURRENCIES: A REVIEW OF
IMPACTS, POTENTIAL AND CHALLENGES

edited by Jérôme Blanc



Thirty Years of Community and Complementary Currencies: A Review Of Impacts, Potential And Challenges

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SPECIAL ISSUE EDITORIAL

THIRTY YEARS OF COMMUNITY AND COMPLEMENTARY CURRENCIES: A REVIEW OF IMPACTS, POTENTIAL AND CHALLENGES

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This special issue is composed of seventeen papers of which first versions were presented at the Lyon CC-Conference that was held on 16-17th February 2011¹.

Since the creation of the first LETS in Vancouver Island in 1983, CCs have widespread and differed, leading to a long series of small variations and major distinctions. There is no historical evidence of such a growing wave of currency schemes since the beginnings of industrialisation at the turn of the 19th century. This wave has boosted interest amongst certain humanities and social sciences researchers since the 1990s, but an assessment of what has been done to date provides a mixed picture. We should most assuredly acknowledge the emergence of this new field of research (new because of its extent and nature), but it must be regretted the insubstantial influence that these works have generally had within humanities and social sciences, and the lack of academic visibility that continues to leave the field on the periphery of research.

The aim of the international, multidisciplinary and trilingual conference organized in Lyon on 16-17th February, 2011 was not only to demonstrate why scholars' works on these currencies are of scientific value, reflecting the practical value of the experiences themselves, but to affirm that they should obtain a significant role with regard to various disciplines that are concerned with this type of trading schemes, such as economics, geography, sociology, political science, anthropology, history, law, etc.

One purely academic problem certainly arises from the fact that they relate to fields of research at the crossroads of a number of disciplines: development studies, local development, market exchange, Third sector or social economy, sustainable development, monetary uses, monetary spaces, sovereignty, new spaces of transaction and sociability, social movements claiming for economic transformations, social cohesion, community dynamics, women's economic initiatives

¹ The conference was organized by the research centres Triangle (UMR 5206) and LEFI (EA 4012), supported by the University Lumière Lyon 2, its Chair of entrepreneurship in Social and solidarity economy, the Institut des sciences de l'homme (ISH) and the ENS Lyon, where it was held. Financial supports include: Veblen Institute for Economic Reforms and FPH (Fondation Charles Léopold Mayer pour le Progrès de l'homme), Institut Caisse des dépôts et consignations pour la recherche, Cluster 12 « Dynamiques sociales et territoriales » of the Rhône-Alpes Region, Rhône-Alpes Region itself, Direction générale à la langue française et aux langues de France of the Ministry of Culture and Communication, Co-operative RES and Conseil général du Rhône.

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etc. Therefore, the Lyon conference had to be multidisciplinary; papers from different disciplines were welcome, as well as papers that were interdisciplinary in their very scope.

The two-days academic conference included 53 communications and two panels². The first panel questioned the intellectual infrastructure for CC research and showed both its present weaknesses and its progressive emergence. The second panel focused on the links to public policies and showed the difficulties to make CCs a tool for public policies without losing the autonomy and innovation capacity attested by their history. The third day was dedicated to practitioners. This three days event gathered 264 persons from more than 20 countries. Thirty years after the beginning of the present wave of CCs in the world, progress is still required to know and understand the diversity of existing schemes and their scope, though much has already been done and the research dynamics on CCs obviously accelerate.

The seventeen papers of this special issue are not representative of the extent of what was discussed in Lyon since, for example, several areas are missing or are under-represented (Latin America, francophone countries)³. However, they already cover a wide range of cases and topics and they rely on various research and analytical methods. The special issue is structured around four sections.

1 HISTORICAL ACCOUNTS IN THE U.S.

Historical studies certainly provide a major key to a better understanding of the possibilities, failures and successes of what is happening today. All along its history, the U.S. has been a hotspot of monetary experiences. The three papers of this section consider debates that developed on money and democracy from the end of the eighteenth century and scrips experiments of the Great Depression.

Saul Wainwright contrasts the current major aspiration of putting democracy into money by CC advocates with two moments of the US monetary history wherein money and democracy were linked: the Federalist implementation of a monetary system that would be compatible with capitalism and inequalities, and the Greenbackers who advocated a democratic control over monetary issue through government paper money creation. He shows that the notion of a democracy is deeply different in these three cases: CCs rather argue for “a type of democratic money that no longer seems compatible with capitalism”.

As stressed by Loren Gatch and Sarah Elvins, the years around 1932-33 were years of a boom in scrips of many kinds in the U.S.: broadly speaking, clearinghouse certificates, scrips of barter and self-help groups, stamp scrips and tax-based scrips from local governments, etc., leading to hundreds of cases all over the United States.

Sarah Elvins analyses the arguments of advocacy for implementing scrips in the US around 1932. She shows that argumentation mostly relied on the ideas of marshalling local resources for the recovery of a particular community, self-help as the continuation of individualism, that is the contrary of charity; in such conceptions, scrips would be considered a momentary solution to “prime the pump” of an economic system that was still considered sound.

Loren Gatch focuses on tax-anticipation scrips from local governments that flourished between 1931 and 1935, with a particular boom in 1933 as consequences of the “bank holiday” declared by Roosevelt in March 1933 as a way to avoid the final collapse of the banking system. These scrips were issued extensively, by big cities like Chicago or Detroit, and generally lasted more than other scrips. They notably served as partial wage and salary payments. Gatch analyzes the problem of distinctive confidence of the public in these scrips, their relations to legal problems and the way municipalities had to manage their circulation in order to avoid or reduce discounts on their face value. In a series of cases, they benefited from businesses’ support. Gatch emphasizes the proper management of the circulation by municipalities as one of the key factors of success.

2 THEORETICAL ISSUES

What about CCs in theory? In a historical, theoretical and ideological context, money is inescapably considered either the tool of sovereignty or, for those who acknowledge the possibility of monetary plurality, a specific financial asset submitted to rational choice and thus to competition principles. A better understanding of CCs obviously requires theoretical reassessments of money and what can be done with it. The papers of this section suggest ways to make such reassessments.

Makoto Nishibe provides the reader with an interpretation of CCs as a communication medium. Whereas Luhman views money as a “symbolically generalized medium”, which is uniform (because unique), under Nishibe’s view CCs also integrate the two other dimensions of a medium: language that enables communication of meanings and an extended medium that extends the reach of communication by language. CCs appear eventually as a replicator for “new

² The call for papers, the programme and the list of the presented papers are available on the Conference website <http://triangle.ens-lyon.fr/spip.php?article1588>. See also the wider website (in French only) built on the basis of the dynamics of the three days of academic conference and practitioners’ event: <http://www.monnaiesendebat.org/> and the news website <http://www.scoop.it/t/social-currencies>

³ Several papers from the conference that covered these areas have been published in the francophone RECMA journal (Revue internationale de l’économie sociale, n°324, April 2012, see <http://recma.org/node/1909>) and are to be published in the Spanish-speaking Prólogos journal (Revista de historia, política y sociedad, Universidad nacional de Luján, Argentina).

species in the socio-economic evolution”, leading Nishibe to link his analysis to evolutionary economics.

Nozomi Kichij and Makoto Nishibe contrast different sorts of money creation: from concentrated (banknotes and paper money type of CC) to dispersive (LETS type), through quasi-dispersive (deposit money creation). They analyze the relative efficiency of the two opposite cases. LETS appear to be more efficient in terms of transaction realization than a concentrated and pre-issued currency, because the latter requires a money stock in advance. However, the authors emphasize the risk of free riding through LETS dispersive money creation and assess the debit limit to be implemented to avoid it.

Hugo Godschalk extensively presents the variety of demurrage meanings, approaches and implementations. He distinguishes three sorts of proposals: table money, stamp scrips and expiry money and goes into proposals of Gesell, Fisher and some others. While Gesell’s nationwide and permanent system was never implemented, local experiments have taken place, already, during the 1930s and since the 1990s. He states that the level of demurrage had a negligible role in the possible (but far from being general) success of local experiments and shows that, contrary to the general understanding, US transaction-based scrips achieved a much higher circulation velocity than the US dollar.

In a self-criticism on the earlier stages of a research project on exchange networks and parallel currencies in Greece, **Irene Sotiropoulou** tries to put in perspective the practices developed in the Greek CCs and barter practices. She states, “our inability to see multiple currency systems and non-monetary transactions as possible positive political-economic tools, stems from our idea that a monetary economy with one currency only is the best social option, especially compared to other economies where a variety of exchange mechanisms exists.” As a consequence, it must be acknowledged that these practices that have been “dismissed, disdained and even disrepute” have “never ceased to exist”.

3 SHORTCOMINGS AND ACHIEVEMENTS

A fair part of the academic literature on CCs is dedicated to assessments of various sorts of difficulties they face and their possible successes. Key factors include the relation between their objectives and their organization, the way they are governed, their size and the diversity of users, the way they balance the commitment they require of their users and efficacy requirements, the way they build production/consumption chains, etc. Aspects of these factors are dealt with in this section.

Georgina M. Gómez emphasizes the role of CC governance in their sustainability through a comparative analysis of the governance mode of the three main trueque networks in Argentina, which proved to respond differently to the general downfall of CCs after 2002. She builds a taxonomy of Argentinian CC nodes after the split of the movement and

shows that none managed to be sustainable enough. She concludes on what seems to be the best-suited governance concerning the scale and size of schemes, suggesting: “on a national, large scale, there seems to be no sustainable governance system for a CCS”.

Assessing the Bavarian Chiemgauer’s success, **Christian Thiel** refers to the theoretical framework of the commons when defining the general objectives pursued by Regiogeld. Pointing out the risk of free riding in this context, he states: “one cannot explain the Chiemgauer-use with a rational, opportunity-optimizing attitude”. People use it because it is a moral money: “A ‘moral money’ offers them possibilities which they don’t have with ‘normal money’”: the currency “assists shopping (...) by attributing a moral quality to products and shops”, and they provide a means to exert a power over each one’s personal expenses but also over others’.

Krister Volkmann analyzes the distinctive features of German-speaking area Regiogeld experiences, distinguishing three sorts of CCs: euro-based currencies like the Chiemgauer; activity-based currencies like the Urstromtaler; and mixed currencies articulating euro-based and LETS-like systems like the Sterntaler. He links the basic objectives of CCs to a “solidarity economy”: “all economic forms that include aspects of solidarity and fairness in opposition to pure profit-maximizing”. Regional currencies then allow “the individual to choose the degree to which he or she wants to participate in the solidarity realm”.

Molly Scott Cato and Marta Suárez present an account “from the inside” of the creation and early stages of the Stroud Pound, in the UK. They raise one major question on the relevance of CCs. Like others, the Stroud Pound aimed at prompting consumption of locally produced goods and services. However, are they the best first step, would it not be more efficient and direct to encourage local production? Interestingly, the authors state that, in the case of Stroud, “the extremely limited range of local produce that is available, and the small percentages of locally produced goods that were for sale in the local shops, radically undercut the design of the scheme by making local supply chains near impossible for the largest volume of economic activity in the town.”

The paper of **Petr Jelínek, Zsuzsanna Eszter Szalay and Alois Konečný** provides the reader with a picture of Visegrad countries where CCs have not experienced a great success to date. Community currencies have developed in Poland, Czech Republic, Slovakia and Hungary but never reached a wide level and mostly disappeared, with the exception of Hungary. Several explanations help understand this; among them, one can stress the case of self-interest centred activists, the homogeneity of members, the exhaustion of leaders, little economic need and insignificant impact, etc.

Hiroshi Nakazato and Takeshi Hiramoto focus on the way CCs may generate social support among a community, through a comparative network analysis of a LETS-type CC

in Sweden (BYTS) and an ecomoney-type CC in Japan (Ichi-Muraoka). "In both Ichi-Muraoka and BYTS, there is almost no relationship between the frequency of use of community currencies and 'the degree of satisfaction with the support received in daily life'", which means that social support coming from these CCs is only peripheral to everyone's life. Though, these CCs are acknowledged to provide forms of social support that are all the more important as users become conscious of the possibilities provided by CCs.

Ken-ichi Kurita, Yoshihisa Miyazaki and Makoto Nishibe try to assess the consequences of shopkeepers' behaviour on the actual use and circulation of a case of redeemable CC coupons in a district of Tokyo, which have commercial and non commercial purposes. While the scheme seemed to be a success in terms of awareness of inter-group links and consumer behaviour, shopkeepers tend to redeem coupons in cash immediately. The authors identify three main reasons: first, accounting difficulties with sales in CC coupons; second, unclear comprehension on the part of shopkeepers on the possible uses of CC coupons; third, a psychological resistance due to the idea that reusing CC coupons would require additional efforts of the shopkeepers.

Finally, **Melina Young** focuses on US, Canadian and Australian B2B barter systems, which she considers sharing "many of the characteristics of social currencies", though they are mostly "for-profit businesses operating in the private sector". She analyzes how these so-called "barter" systems are so deeply connected with the national economy: they cannot be considered ways to deviate from it, to flee taxes or market competition etc. She also discusses the peculiar and interesting feature of "two-currency pricing mechanism", whereby prices, whereas nominally stable, might refer to higher or lower parts of national currency and barter currency, depending on the choices of sellers.

4 PROSPECTS AND PROJECTS

One major strength of CCs over the last thirty years has been their impressive capacity to give birth to social innovation. The two last papers of this special issue contribute to this trend.

Hélène Joachain and Frédéric Klopfert deal with CCs as part of policy instruments for environmental sustainability, drawing on the case of the Belgian project INESPO: energy saving through the coupling of CCs and Smart Meters. They use former experiments and proposals as benchmarks to help design a new project, notably referring to the NU-Spaarpas in the Netherlands and the Belgian e-portemonee and Toreke cases. One important line of cleavage is whether participation is mandatory or not and whether the desired environmental impact of the scheme through behavioral change is connected to social or economic issues as other CCs do. They build a precise taxonomy of the constitutive parameters of CCs, which is applied within the framework of the INESPO project.

Mark Brakken, Preston Austin, Stephanie Rearick and Leander Bindewald propose an articulated and hierarchical monetary system able to acknowledge the variety of values in society. They state: "an economic system with a single currency will only recognize a very limited set of activities as valuable"; they deduce from this first statement the necessity to design "appropriately differentiated currencies capable of denoting different types of value". To do so, they elaborate an analogy with the trophic pyramid of ecology. The theoretical framework presented in the paper is at the root of a project that aims at promoting time banking for "community responsive economic systems".

Finally, the variety of these selected papers from the Lyon CC Conference may serve as a fair picture of the present state of CC research. Whereas proposals and experiments have proven to be audacious, empirical research shows the major limits and shortcomings that this movement experience. Whereas these researches are more empirical than theoretical, theoretization emerge that require addressing the primary question of the possible irreducible specificities of CC practices, purposes and eventually conceptualization. Thirty years after their first emergence, CCs still have to prove they can change the present state of things, while research agendas are increasingly considering them.



International Journal of Community Currency Research

Volume 16 (2012) Section D 5-13

DEMOCRATIZING MONEY: THE HISTORICAL ROLE OF THE U.S. FEDERAL GOVERNMENT IN CURRENCY CREATION

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ABSTRACT

For two hundred and sixty years the US Federal Government has claimed that the most democratic money is a scarce form of money. This claim is built off the notion that an abundant supply of money would threaten class relations (the rights of private property) and ultimately the free flow of commerce (capitalist exchange). Since the writing of the Federal Constitution the government's focus has always been on creating reliable and abundant supplies of credit. The idea of scarce money and abundant credit has been challenged twice: In the 1860's by the Greenback Party who claimed the most democratic money is money created by government. The second challenge in the 1980s by the Community Currency movement uniquely focuses not on banks or government instead claiming that democratic money is money created by local communities and/or individuals.

ACKNOWLEDGEMENTS

I acknowledge the financial support of the National Research Foundation (NRF) towards this research. Opinions expressed and conclusions arrived at, are those of the author and are not necessarily attributed to the NRF.

Additionally, I want to acknowledge the use of the University of California at Berkeley's library while a Visiting Student Researcher in 2010-2011 with the sponsorship of Professor Gillian Hart.

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INTRODUCTION

This paper examines the history of the political idea of 'democratic money', within the historically specific U.S. capitalist democracy (Wood 1995: 213)¹. It explores the political conversation that occurred during several phases in American history that were focused on resolving a central tension in America's political economy – an expanding economy dependent on adequate and reliable supplies of liquidity and the dominance of a scarce concept of money. This paper is an attempt to highlight the way in which money creation, and claims to be democratizing its creation, are dependent upon the historically and geographically specific context in which such claims are made. The relevancy of this research is to challenge contemporary claims to be democratizing money to fully articulate their concept of democracy, while recognizing that the very idea of what "is" democracy has shifted over time. The paper makes no claim to know what is democratic money, nor what is the most democratic form of money, but rather to show that the claim to be democratic is dependent on the specific conceptualization of democracy employed by those that claim or advocate a particular type of money creation.

First, it is necessary to define specifically what is meant by money. The particular view taken is that money, as it is currently understood, developed between the sixteenth and eighteenth centuries (Ingham 1999: 84). What this system of money creation relies on is a set of social and political institutional arrangements to manage the quantity and value of this money, "modern credit-money is itself, first, a social relation and second; that as such its elasticity of production is entirely a social construct" (Ingham 1999: 80). Therefore money's value is not natural or intrinsic but the product of the social forces that manage its production, forces that are defined by the historical context in which they operate (Ingham 1999: 82).

Second, to explore the political idea of democratic money it is necessary to clarify the specific character of democracy within which today's capitalist credit-money came to dominate. This process is most easily examined within the context of the United States of America. The type of democracy that emerged from the constitutional debates of 1787 was one that explicitly supported private property and accepted class inequality as natural. And, any effort by government to level these inequalities or threaten the existence of private property was viewed as a threat to liberty.

During the period leading up to the writing of the U.S. Federal Constitution there were a number of financial policies enacted by colonial state legislatures aimed at promoting the 'leveling spirit'² that advocates of original democracy favored³.

The Federalists framed these policies as a threat to liberty, to the stability of class relations and most importantly, to the free flow of commerce (Carey 2001: 231 [Federalist No. 44]). Alexander Hamilton believed that the creation of paper money by the colonial states had created, "mutual distrust in the breasts of all classes of citizens" and that, "precautions against the repetition of those practices on the part of the state governments, which have undermined the foundations of property and credit," was a necessary element in any Federal Constitution (Carey 2001: 453 [Federalist No. 85]). The Federalists clearly sided with a system of currency creation that was the most compatible with existing class inequality - a natural and necessary part of the commercial economy (Carey 2001: 41-44 [Federalist No. 10]). Hamilton believed that the, "most productive system of finance will always be the least burdensome" to the manufacturing and banking classes (Carey 2001: 453 [Federalist No. 85]). Therefore, whatever system of money creation existed, it needed to be, first and foremost, the least burdensome to these classes of society. The belief was that a gold monetary base would be the most compatible with the Federalist concept of a capitalist democracy.

FAILED ATTEMPTS AT CREATING STABLE CREDIT SUPPLIES

One of the most important consequences of the Federal Constitution was a move towards a new monetary regime, which ended the ability of individual states to print money or to declare a legal tender. This shift in money creation authority was the beginning of a historical process in which the creation of money was increasingly centralized under the authority of the Federal Government; this helped guarantee that a government friendly to the needs of the capitalist economy enacted money creation policies. The result was a financial system that reinforced the existence of private property and the free flow of commercial exchange, while mindful of the need to limit any disrupting influence this may have on existing class relations. The success of this system of money creation was critical to the continued existence of America's capitalist democracy.

1 E.M. Wood uses the phrase and the concept of a "capitalist democracy" in her book, "Democracy Against Capitalism" (1995: 213). Her central argument is that the concept of democracy that we assume was a historically specific creation of the U.S.A. during the writing of the Federal Constitution. The American concept of democracy separated the political and economic spheres of life. This was achieved through the creation of a new concept of democracy that could accommodate capitalism by removing questions of property and socio-economic equality from the political sphere. "In that sense, political equality in capitalist democracy not only coexists with socio-economic inequality but leaves it fundamentally intact" (Wood 1995: 213).

2 The use of the term "leveling spirit" was used to identify efforts at reducing class inequality (Ferling 2003: 283)

3 When I refer to original democracy I am drawing on one of the central ideas of Athenian democracy which is described by E. M. Wood as having no separation between political and economic freedom meaning that political equality "substantially modified, socio-economic inequality" (1995: 212). In essence this original concept of democracy saw inequality amongst citizens as undemocratic, this was extended to include ideas of elections and representation, which were, prior to this era, associated with oligarchy (Wood 1995).

It was immediately evident to the Federal Government and most citizens of the newly created U.S.A. that the expanding economy would need increasing supplies of currency – be it in the form of money or credit. While the economy, as it grows, requires increasing supplies of currency, the chosen base at the time was gold, which is naturally finite and therefore cannot reliably expand to meet the demands of the growing economy. It is this tension between continuous growth and scarce supply, which keeps debates over the creation of money politically relevant into the twenty-first century. Geoffrey Ingham, an academic who has written extensively on the history of money, has highlighted how, “The scarcity of money is always the result of very carefully constructed social and political arrangements” (Ingham 2004: 8).

Advocates of scarce money – led by those who saw gold as money because it is a real and natural form of value and has historically played the role of money – believed that its value was not the result of government’s actions or socially constructed (Babb and Carruthers 1996; Financial Pamphlets Vol. 1-5). The advocates of gold critically believed that money is “not socially constructed and that it rather belonged to an autonomous and natural sphere – the market – in which it was perilous for a polity to intervene” (Babb and Carruthers 1996: 1580). In other words, gold money existed regardless of any action taken by government and in fact any effort by the government to create money would be considered perilous to its own survival and the broader political economy.

With state governments having lost their ability to create their own money they turned to the next best solution, they issued state bank charters and endowed those banks with the right to issue their own forms of credit⁴. This was driven by the individual states’ realization that if they could not issue money (as they had been doing prior to 1787 in the form of paper), while the expanding economy was crying out for additional liquidity (in the form of a reliable medium of exchange), the only available solution was to increase the supply of credit.

The credit issued by the state banks was always issued on the assumption that there were equivalent reserves of gold held by the issuing bank. This meant that banks had to compete over the scarce supply of gold money in order to be able to provide reliable forms of credit. Over the following sixty years the number of state banks with credit issuing charters grew steadily. From just three in 1790, “their numbers rose to 28 in 1800, 102 in 1810, 327 by 1820 and 584 by 1835,” (Sylla 1998: 85) and by 1840 there were over eight hundred banks issuing their own forms of bank-

notes (Rousseau 2004: 23). During the first half of the eighteenth century banks were, “in the minds of the average citizens anywhere” charged with overcoming, “the scarcity of money” by making available the credit needed to enable the free flow of commercial exchange (Unger 1964: 40). The distinction being that these banks were creating credit and not creating “destabilizing” paper money. Despite the proliferation of these credit-issuing state banks and because of the scarcity of gold money, they often failed to issue reliable supplies of credit. The economy repeatedly experienced bank runs and crashes throughout the eighteenth and nineteenth centuries, in great part due to the over issuance of credit, hoarding of gold and inability to increase the supply of the monetary base.

These repeated crises set off a series of debates that were driven almost immediately by differing class interests. The debates centered on the belief that bankers represented and worked to the benefit of the merchant and banking classes, over the interests of the agrarian and laboring classes⁵. Hamilton explicitly stated that the interests of the laboring classes, “can be more effectually promoted by the merchant than by themselves” (Carey, 2001: 207 [Federalist No. 35]). This sense, that the banks were focused on serving the needs of the merchants over the needs of the farmer, was reinforced by the fact that the majority of banks were based in New England and the Middle Atlantic States dominated by wealthy property owning merchants and bankers (Sylla 1998: 85). This concentration of money in the northeast was linked (at least in political rhetoric) with the economic hardships experienced in the predominantly agricultural south.

The continuous instability of this system of state bank issued credit, and the negative ramifications this had for the overall political economy, helped drive the repeated efforts of the Federal Government to create a system of national banking. The efforts of the Federal Government centered on the idea that the creation of a national bank, which issued its own credit, would provide the greatest amount of stability to the political economy. The Federal Government created two national banks both of which would cease to exist by 1841 as a result of political, and not financial reasons (Davies 2002: 475-478). The idea behind the creation of these banks was that their credit would be accepted at face value by all banks (unlike state bank issued credit), because they would trust the ability (the liquidity) of the national bank to exchange the credit for gold money. This would create stability and reduce the negative impact of scarce supplies of money on the political economy. Importantly, there was no attempt by government (federal or state) to create more/new money (unlike the paper money

4 My use of the term credit applies specifically to banknotes issued by individual banks. These banknotes, prior to the arrival of computers, were issued as pieces of paper, and were supposed to represent real and existing supplies of gold money. The idea being that if you returned to the bank with your banknote you would be given an amount of gold money in return.

5 For an in-depth look at these class conflicts and the shifting interests see Sharkey, (1959); Unger, (1964); Sylla (1998).

created by the colonial states of the 1770's). All efforts were focused on creating credit, while gold would continue to form the scarce monetary base and act as the only "true" and "natural" form of money.

THE FEDERAL GOVERNMENT CREATES PAPER MONEY

In light of the Federal Government's original focus on creating credit, and not duplicating the efforts of the colonial state legislatures, the decision in 1862, during the American Civil War, to issue new paper money into circulation, was a surprise to many and led to a series of challenging and illuminating debates⁶. Due to the failed attempts at creating a national bank, the Federal Government was in desperate need of a reliable currency supply to fund both its military operations and enable the free flow of commercial exchange.

During the Civil War the Federal Government could not rely on state banks to create adequate supplies of credit. At the outset of the war, "A supply of gold and silver coin could in no way be depended on. It has been noted that hoarding had begun even before the suspension of specie payments" (Sharkey 1959: 34). This hoarding placed massive constraints on the flow of money, reducing the ability of many banks to issue credit. In those few cases when banks did issue credit, it was often assumed that they were over-leveraged and their creditworthiness was questioned. All of this resulted in a real shortage of available currency, and without a national bank system in place there was very little the government could do to increase the supply. In the end, the decision taken by the Federal Government was to protect the continued operation of the commercial economy, "it seems that the "necessity" of the situation was not in protecting the credit of the government but in supplying a medium of payment, in other words a currency" (Sharkey 1959: 33).

The first Legal Tender Act went into effect on February 25, 1862 giving the right to the United States Treasury to create paper money (United States Congress 1862: 345). Two more Acts in 1863, enabled the issuance of four hundred and fifty million dollars worth of paper money (Davies 2002: 487). This paper money was officially issued at a one-to-one relationship to gold. This meant that the paper money had the same purchasing power as gold. The important point to note is that when this paper money was originally issued it was not redeemable in gold; it was not a

"representation" of gold, but was presented as if it was the same as gold. The fact that this paper, created and issued by the Federal Government, could not be redeemed for gold is what made it money, and not credit, in the eyes of many.

The decision to print paper money opened up a debate, for the second time in America's history, over the source of money's value and the role of government in the creation of this value. These debates, "established that the way in which that institution [of money] worked was itself the result of human intervention" (Laidler 1991: 188). During what was a relatively brief moment in history, the government's role in the creation of money's value, not just in the supply of credit, was established and confirmed. Those that supported the right of the Federal Government to issue this paper money would marshal arguments that placed the source of money's value, and therefore the creation of money, in the hands of government. These arguments challenged the very foundation of the then accepted theory of money and, in the eyes of many, threatened existing class relations and therefore the entire political economy.

Despite the appearance that the Federal Government was going back on its historical commitment to scarce money, it was doing nothing of the sort. It had included a clause in the Acts that committed the Federal Government to paying interest and Treasury bondholders in gold and not in paper money. Despite this stated commitment to gold⁷, the Legal Tender Acts met with the immediate protest from the banking and merchant classes⁸. Supporters of gold money were emphatic in their arguments against what they saw as an attempt to place the source of monetary value in government. Bullionists, who were predominantly from the merchant and banking classes, had the added bonus of being the classes with the most direct political power and influence. They believed, as had been assumed by the Federalists, that they understood best how to protect the continued free flow of commercial exchange. General Garfield, a Civil War hero and future president of the U.S.A. believed that, "Money is a reality, a weight, of a certain metal, of a certain fineness. But a paper dollar is simply a deed, the legal evidence of the title that I hold to a dollar" (Garfield qtd. in Babb and Carruthers 1996: 1568). Blair (1876) summed up the dominant understanding of the source of monetary value in a speech he made to congress on May 18, 1876. He argued that the monetary value of gold is, "independent of and more necessary than any government" because it, "possesses value as a commodity" while there are those on the side of paper who are claiming that, "real

6 This section draws heavily on a five-volume set of original financial pamphlets that were published and distributed between 1820 and the late 1890's (see Pamphlets of Finance, Vol. 1 – 5).

7 The Legal Tender Acts included the following clause: "payment of all taxes, internal duties, excises, debts, and demands of every kind due to the United States, except duties on imports, and of all claims and demands against the United States of every kind whatsoever, except for interest upon bonds and notes, which shall be paid in coin, and shall, also be lawful money and legal tender in payment of debts, public and private, within the United States." (United States. Cong., 1862: 345) (Italics added)

8 This led to a series of legal cases that went all the way to the U.S. Supreme Court; *Hepburn v. Griswold* (1870), overturned the Federal Government's right to issue legal tender. In two cases, *Knox v. Lee* and *Parker v. Davis* (1871), *Julliard v. Greenman* (1884), the constitutionality of the Legal Tender Act's was confirmed.

money is not intrinsically property, but a mere token or sign, endowed with power to cancel debts" (Blair, 1876). Highlighted in this framing is that government is to have no role in the money creation process, and that the best solution resides with banks and the continued, naturalized role of gold and scarce money more generally.

CREATING ABUNDANT SUPPLIES OF MONEY

The passage of the Specie Resumption Act on January 14, 1875, led advocates of paper money to form a political party that would go on to make some of the most nuanced arguments in support of government issued money. In 1875, these individuals would form the Greenback Party and by 1878 they secured, "over a million voters and returned fourteen members to Congress" (Davies 2002: 496). They argued that removing the supply of paper money from circulation would reduce the ability of businesses to hire labor, further exacerbating the level of unemployment and the resulting social instability and threaten the entire capitalist democracy's stability.

In the process of making their arguments the Greenbacks challenged several of the fundamental assumptions made by advocates of gold money and they began to articulate a theory of money creation that placed government at the center. Representative William Kelley, an advocate for paper money and a member of the Greenback Party, argued that the addition of the paper money was a positive development, having saved the economy of the USA:

"It may have been unwise to use that 'great enemy of the nation, the greenback,' and thus increase the volume of money and enhance prices; but let it remind gentlemen, who say that the greenback is an enemy to the country, that they decry their country's savior" (1877).

Kelley is arguing that this increase in the money supply did not disrupt or upset the political economy; in fact it enabled the economy to expand. The goal of this paper money, according to Kelley (1877), was not to disrupt class relations or threaten the free flow of commerce. Rather, it was about enabling those that wanted to work to work and to help make this happen the government was being asked, "to maintain a familiar medium of exchange whereby capital and enterprise may pay labor for its work" (Kelley, 1877). Even though it is evident that Kelley and the Greenbacks are pro-capitalist there is a subtle but critical shift in their understanding of the source of money's value. By assuming government has the ability to create the money needed to fuel commercial exchange, the source of value is being socialized and consciously politicized.

In a pamphlet published in 1870 the author writes, "we do not need gold or silver for money, or as a basis for paper currency. All the money we need is legal tenders issued by the government" (Smith, 1870). The Greenbacks argued

that the value of money has everything to do with the legal authority of government, and nothing intrinsic to gold, "Money is a creature of law, it is created and upheld by law" (Wolcott qtd. in Babb and Carruthers 1996: 1572). The notion that government could create money through acts of law, placed the source of monetary value in its hands, and challenged the theory that money's value was natural and outside of any legal act of government:

"All money, whether it be gold, silver or paper, derives its chief value from the fact that governments do enact arbitrary laws declaring money for the payments of debts, thereby creating the chief demand for it." (Ensley qtd. in Babb and Carruthers, 1996: 1570)

This conclusion raised deeper questions around what control over money creation meant. An argument emerged that claimed the right of the voting citizens, whose demands would be expressed through their representative government, to control the creation of money:

"We, the people, make the government. We give the government power to make, provide and issue money under proper rules and regulations...We make our money, we issue it, we control it. We regulate it." (Wolcott qtd. in Babb and Carruthers, 1996: 1572)

The advocates are not claiming their individual right to create money or the right of an individual State to create money; nor is it aimed at challenging the Federal Government. Rather, the argument is to reinforce the existing system of government, and helps solve the tension between scarce money and the expanding economy, by placing the power to create money in the Government's hands. These are important distinctions, separating the Greenbacks debate from those of the 1770's or of those that appear in the 1980's⁹. In fact, it could be viewed as the historian Sharkey has claimed, that all of the debates including the radical ideas of the Greenbacks, were aimed at perpetuating the existing class relations and not disrupting the system of governance that relied on the idea of natural inequality and private property (1959: 33).

The rise of a political force that articulated the need for an adequate supply of currency, and linked the source of money's value to political decisions reinforced by legal tender laws, enabled them to place the responsibility for maintaining this currency in the hands of the Federal Government. According to Babb and Carruthers, "The greenback debates contested the nature of monetary value and the proper role of democratic government in finance" (1996: 1573). The Greenback Party had managed to rearticulate the long running tension between a concept of scarce money and an expanding economy, by showing that there need be no real shortage of money. The solution that

9 The reference to the 1980's is a reference to the community currency movement. I will engage this subject later in this paper.

the Greenbacks were pursuing was one aimed at expanding the commercial economy by expanding the volume of money, not by increasing the volume of credit (and the associated trappings of debt and money scarcity). This important distinction places the responsibility for sufficient supplies of currency on the government and not on the banks. Importantly, it attempted to break down an idea that claimed the creation of money was outside of government's control. The Greenbacks central argument was that, "economic value could and should be subject to conscious, democratic control" (Babb and Carruthers 1996: 1573).

The Specie Resumption Act stipulated that all paper money was to be returned for gold to the Treasury by January 1, 1879. This date came and went, and over three hundred million dollars worth of greenbacks (as the paper money came to be called) remained in circulation and retained its status as money into the twenty-first century (Davies 2002: 496). This is a critically important moment in American history because it subtly influenced and gave support to some of the emerging (and radical) theories of managed paper money systems being explored within academic circles (Laidler 1991: 198)¹⁰. The Greenbacks had managed to introduce ideas into political debate that pointed to the role of government and showed the potential for alternative ways of creating money, that in fact would be, despite historical beliefs, compatible with the existing capitalist democracy.

Despite the fact that the Greenback Party never specifically argued for the "democratization" of money, they did argue for its politicization within the context of the capitalist democracy. They saw it as a political conversation, driven by government who is voted into power on the assumption that they will represent the interests of the people. However, placing this into the broader arch of history it is clear that those "representatives" are closely aligned with a particular view that argues for the naturalness of money value and class inequality. Late twentieth century orthodox economists continued to cling to their "model of money supply" which was, "an empirical generalization of a naturally constrained supply of a metallic monetary base provided by a central authority (the mint) that was outside the market" (Ingham 2004: 21).

COMMUNITY CURRENCY MOVEMENT

The historical trajectory of the financial debates in the U.S.A. has always pursued the same goal – the reinforcement of the capitalist democracy and the underlying inequality of class relations and property ownership. This effort has aimed at guaranteeing the compatibility between the capitalist democracy and money and credit creation. However, there is another debate that has run in parallel to this one that is marked by the efforts of the colonial legislatures in the 1770's, and in several critical ways by the Greenback Party of the 1870's, and a new movement that has risen since the 1980's known as the community currency (CC) movement¹¹. The commonality between these debates has been the effort to challenge the assumed critical need for a scarce money supply. The efforts of many CC advocates pick up on some of these earlier arguments, highlighting the social element of money and claiming, uniquely that individuals can create their own money. This is driven by a conceptualization of democracy that does not appear to be compatible with the Federalist notion of capitalist democracy.

Many advocates of CC argue for the democratization of money via the creation of abundant supplies of money. Many claim that the scarcity of money and credit is deleterious to the economy and the cause of rising inequality and economic instability as well as environmental destruction. Whether their analysis of the impacts is correct or not, what they are doing is challenging the role and relevance of both the Federal Government and the banks in the currency creation process. These efforts present a new and unique phase in the history of the monetary debates.

These CC advocates do not accept the notion of democracy that President Wilson claimed in 1913 when he stated that the creation of the Federal Reserve System represented the "democratization of credit" (qtd. in Wickware, 1915: 51). Similar to earlier debates, this process is framed as benefiting the wealthy merchant and banking classes while exacerbating the instability of the entire financial system. However, unlike the Greenbacks, the CC movement views the increasing role of government as representing the further privatization and centralization of the creation of money. On the website of Berkshares, a CC based in the northeastern U.S.A., they claim that, "The banking system is one of the most centralized institutions of our economy and

10 Knut Wicksell, and other monetary theorists of the late 1880's and 1890's, had begun to work hard on theorizing credit and exploring non-specie based monetary systems (Laidler 1991: 198). Their efforts were driven in great part by their desire to create a system that was more stable and that would give the capitalist economy a more reliable medium of exchange. The solutions and ideas that emerged during this period would impact the likes of J.M. Keynes who built much of his earlier work off the theories of Knut Wicksell (Laidler 1991: 198).

11 This term encompasses a broad range of monetary experiments that go by a range of names: local currencies, social currencies, time banks, local exchange trading systems, local money, complementary currencies. This section does not attempt to articulate all of the nuances between these different experiments, but rather to make a generalization about the particular political conceptualizations upon which they operate.

one of the major obstacles to strengthening regional economies and the communities within them" ("What Are Berkshares?"). This framing seems to discount the historical context within which the Federal Reserve was created; it was created to limit the negative impact of the nineteenth century pattern of hoarding and monopolization of gold money by the private banks. And, in particular to deal with the resulting inadequate and unreliable supplies of credit, which were especially threatening to the free flow of commercial exchange and a threat to the entire capitalist democracy.

The way to combat this privatization and centralization, according to many CC advocates, is to end the government and bank's monopoly over currency creation and to instead give power to small local communities and individuals to create their own money. This desire to end the centralized system, and to return to an era of competing money issuers is also connected to the idea of ending the politicization of money creation¹². In fact the claim is made that government doesn't even need to "give" this power to citizens; citizens just need to assert their own money creation power. Thomas Greco, an author and advocate of CC, states that, "we have called for the separation of money and state, but since the people do not control their government, we believe that separation can only be achieved as the people assert their money power" (Greco 2009: 111). Greco goes on to claim that the, "politicization of money has inhibited the widespread adoption of better alternatives" (Greco 2009: 118).

Part of what the CC advocates see as unique about this current moment in history, is the rise of information and networking technologies, which offer a range of possible alternative decentralized approaches to creating money. CC advocates that run several websites and actively work to produce the technological systems that enable anyone to create a currency claim that, "given how much information technology has evolved recently, the members of a community can be their own arbiters" (Brock, "New Currency Frontiers"). The technology is essentially framed as replacing the role of government or banks; decentralized "currency design will mean the obsolescence" of any sort of dependence "on any form of central authority" (Brock, "P2P Currency"). These advocates recognize that they are challenging the history of centralized currency creation, "Almost all currency designs to date (dollars included) depend on either a scarce commodity (such as gold or paper notes) or a centralized authority to issue and/or track the currency (barter clubs, time-banks, etc)" (Brock, "P2P Currency")¹³. For these advocates, "The new frontier is about open currencies which do not exist by mandate of banks or

government they are distributed and un-enclosable systems of wealth creation which can be designed to benefit more than a privileged few" (Brock, et al.; "New Currency Frontiers").

CC advocates typically do not see government as representative of their interests, and therefore they are looking for ways of solving the scarcity of money via new means. This perceived failure of not just the government but also of the banks, signals a key shift in the history of the financial debates. The advocates of CC are not looking for solutions that fit within the historical understandings of class inequality and representative government. In essence the system of representative government, built to enable capitalism, is failing to meet the demands of at least the CC advocates, if not a large swath of society. The potential disruption to the entire political economy is huge, and figuring out how to design a system of money creation that returns a sense that the Federal Government actually is representing and mediating the needs of all classes, may be of critical importance to the survival of capitalist democracies.

Margrit Kennedy, who has written and lectured extensively on CC has argued that, "Money can be made to serve rather than to rule, to be use—rather than profit-oriented—and to create abundance, stability, and sustainability" (qtd. in Stonington, 2004). She said that while "money is one of the most ingenious inventions of mankind" it has "the potential to be the most destructive or most creative" (qtd. in Stonington, 2004). Money, credit and currencies in general, are the product of a long series of social decisions. These decisions have historically focused on designing a system of money creation that is both compatible and reinforcing of the underlying class inequality necessary for the smooth operation of the American capitalist democracy. The rise, since the 1980's, of a new set of financial debates, represents a unique challenge to a long running theory of money and credit creation. The CC advocates are pointing to the sense that the current financial system is failing; their solutions are not focused on saving the current system but of fundamentally reconfiguring the entire political economy. No theory of money creation has attempted to articulate an alternative political economy since the failed efforts of the colonial state legislatures of the 1770's. Democratic money, according to CC advocates, is a type of money and credit that envisions a new political economy built on class equality – it is a vastly different conceptualization of democracy that underpins this idea. The CC movement is rearticulating the roles of government and banks, while raising deeper questions about what it means to create money democratically.

12 Frederich von Hayek, the Nobel prize winning free-market economist, was a big advocate of what he called, "the denationalization of money" arguing for private companies to issue their own currencies and allow the market to determine the value of money (von Hayek, 1976). Part of his argument rested on his antipathy towards what he also saw as the politicization of money. This represents another of the several ways in which the CC movement comes to mirror or build off free-market capitalist economists.

13 It is important to point out that Brock et al, differ from many of the other CC advocates in that they do not see a role for a valuable commodity, and have a different notion of value from that which many of the other advocates adhere to. I have written about this in greater detail in Wainwright, 2011.

CONCLUSION

Claims to be democratizing money have been made repeatedly throughout the history of the U.S.A's existence. The original efforts of colonial legislatures to create inflationary money, aimed at leveling society, were built of a conceptualization of democracy that were modeled on original ideas of Greek democracy – a system of democracy that saw inequality and elections as anathema to a true democracy. With the rise of the Federalists in the 1780's a version of democracy emerged that accepted inequality and representative elections. Under this historically specific idea of a capitalist democracy efforts centered on creating money in ways that would not threaten the existence of inequality. The product of this framing resulted in increasingly centralized money creation with a cozy relationship developing between the dominant merchant and banking class and the Federal Government. The Federal Government has continued to claim that the dominant and centralized form of money creation is the most democratic way of creating money; a way of creating money that was also most compatible with a system of capitalism and its inequality. In the 1860's a rare moment emerged in American history in which these claims were challenged and new ideas of abundant, government created money, were promoted. The important distinction being made that money could both be abundant and capitalist while claiming to be democratized. All of these earlier historical debates – those of the colonialists, Federalists, Greenbacks, and Federal Reserve advocates – all claimed to be democratizing money. These claims all have to be placed into the historically and geographically specific context in which the theory of democracy is being framed. The rise of the CC movement in the 1980's represents a new claim to be democratizing money, a claim that seems to be in many ways counter to the over two-hundred year understanding of democracy, which emerged out of the Federalist debates of the 1770's.

This paper has not attempted to claim to know what is democratic money; rather it has attempted to show how money creation has been driven by the context within which it is operating. And, for the past two hundred years this context has been within the American capitalist-democracy – a form of democracy that is compatible with capitalism and accepts inequality. Today's CC advocates seem to be challenging this conceptualization by proposing a type of democratic money that no longer seems compatible with capitalism. They would do well to explore this history further by exploring the relationship between democracy and capitalism within the context of money creation.

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International Journal of Community Currency Research

Volume 16 (2012) Section D 14-21

SELLING SCRIP TO AMERICA: IDEOLOGY, SELF-HELP AND THE EXPERIMENTS OF THE GREAT DEPRESSION

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ABSTRACT

Although there was no single pattern to the use of alternative currency in America during the Great Depression, the arguments used by supporters of scrip often played on common themes. Support for scrip reflected the belief that local resources could be marshaled to combat the economic situation. Although the Depression was a national (and international) crisis, many scrip advocates believed that they would be able to focus improvement within one particular community. Scrip appealed to American notions of self-help and individualism. Even faced with the challenges of the Depression, few Americans were willing to embrace radical change. Advocates of alternative currency had to walk a fine line between emphasizing the innovative possibilities of scrip and reassuring the public that these plans were simply a means to “prime the pump” of an essentially sound economic system.

ACKNOWLEDGEMENTS

The author acknowledges support for this research from the Social Sciences and Humanities Research Council of Canada and the University of Manitoba. The author was pleased to be part of the International Conference on Community and Complementary Currencies in Lyon in 2011. Thanks to Dr. Hugo Godschalk for allowing me to use some images of scrip from his collection.

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INTRODUCTION

The ravages of the Great Depression prompted many communities across the United States to experiment with scrip, barter, and other forms of self-help. Alternative currency schemes proliferated after the Wall Street Crash of 1929, reaching a peak in the early 1930s and waning as the economic programs of Franklin Delano Roosevelt's New Deal were put into place. Cities and towns across the United States attempted to encourage consumption and alleviate unemployment by issuing their own forms of money. Communities as diverse as Chicago, Atlanta, Detroit, and tiny Hawarden, Iowa turned to scrip as a solution to the crisis. In some cases scrip was initiated by municipal governments or city councils, while in others private citizens, merchants' associations, or the unemployed themselves formed cooperatives to put new types of money into action. There was no single pattern to the use of alternative currency in America: stamp scrip, barter scrip, auction scrip, and tax anticipation warrants were all put into circulation in different parts of the country (Harper, 1948; Gatch, 2008; Elvins, 2005; Warner, 2010).

A closer examination of the debate over scrip in the national and local media by activists, politicians, business leaders, and other groups can provide insight into the possibilities and challenges for future proponents of alternative currency in the United States. Even though the groups advocating for the use of scrip were not uniform, certain arguments were repeatedly mobilized in an effort to gain support for alternative currency. First, scrip reflected the belief that local resources could be marshaled to combat the national economic crisis. Although the Depression was a national – and indeed international – problem, backers of alternative currencies believed that they would be able to concentrate the circulation of money to improve conditions within one particular community.

Secondly, scrip also appealed to American notions of self-help and individualism. In the early (pre-New Deal) years of the Great Depression, Americans ranging from President Herbert Hoover down to local chambers of commerce expressed concern that handouts of relief to the unemployed could undermine their dignity and sap them of their willingness to work. The creators of scrip plans like the barter system devised by the Organized Unemployed of Minneapolis, Minnesota, emphasized how the relief that they offered was not charity, but a way to provide new opportunities for willing people to get back to work.

Finally, a study of the discussion of scrip in national and local media, by politicians, economists, and business leaders in the early 1930s reveals that alternative currency was viewed by many as an emergency measure, not a means to permanently transform the economy. Even faced with the crisis of the Depression, few Americans were willing to embrace radical change. Advocates of alternative currency had to walk a fine line between emphasizing the innovative possibilities of scrip and reassuring the public that these plans were simply a means to “prime the pump” of an essentially sound economic system.



Figure 1. Scrip from Clear Lake, Iowa and from the Organized Unemployed of Minneapolis, Minnesota. The Organized Unemployed scrip features a photo of George Mecklenburg and the slogan “Work, not Dole.” (from the collection of Dr. Hugo Godschalk)

POPULAR UNDERSTANDINGS OF THE ECONOMY

The study of scrip allows a unique opportunity to explore the average consumer's understanding of the economy and public discourses about the causes of the Depression. In the months and years after the Wall Street Crash, a familiar explanation for the economic crisis hinged on the role of private consumers who were foolishly “hoarding” their money when they needed to resume spending at the high levels of the 1920s. President Herbert Hoover coordinated an anti-hoarding drive in early 1932 to increase the amount of currency in circulation (New York Times 1932a; New York Times 1932b). Editorials and retail advertisements emphasized the role of the private consumer in turning economic conditions around. An editorial in the Buffalo Evening News in Buffalo, New York, argued:

The law of supply and demand is constant – consumer, retailer, manufacturer. It's logical and self-evident. Merchants supply the consumers' needs – your needs. Manufacturers supply the merchants – your merchants...You are a necessary part of the business cycle, and upon your filling your place in this cycle depends the prosperity and welfare of the nation. If you stop buying, the merchants' shelves remain stocked,

the sales forced must be thinned, factories must shut down (Buffalo Evening News, 1930).

To business leaders, this emphasis on voluntarism and private consumption would pose no great ideological threat. By the end of the 1920s, the maturation of new forms of marketing, retailing and distribution had encouraged Americans to view the purchase of consumer goods as a means of self-expression and self-development. The notion that the economy could recover if only people would stop foolishly hanging onto their money and resume individual spending was a comforting one. It suggested that the economic crisis was only a temporary setback, which could be solved not through great individual sacrifice, but instead by returning to the free-spending "normalcy" of the 1920s.

But beyond simply getting consumers to spend, many economists, retailers and politicians became interested in the notion that spending could be targeted within one particular community, focusing efforts at recovery. This type of argument was not entirely new. As independent retailers in American towns and cities faced increasing competition from chain stores and mail order catalogues during the 1910s and 1920s, many mobilized a language of localism to encourage patrons to spend "at home." Department stores emphasized that they were locally owned and operated, that profits earned were churned back into the community, and not siphoned off to Wall Street or some far-off corporate headquarters. The accuracy of such claims might be open to debate (for example, one might argue that chain store branches paid just as much in local taxes as other businesses, and that buying an item manufactured in a distant place did not qualify as a "local" purchase even if it was acquired in one's hometown store). But for the average consumer, these types of arguments would already be quite familiar.

In a time of economic crisis, retailers and business advocates continued to encourage consumers to pay attention to where they spent their dollars in order to maximize the ameliorative effects of private consumption. The editor of the local paper in Clear Lake, Iowa, acknowledged that any form of expenditure was welcome in an effort to jump start the economy, but urged citizens to prioritize local spending:

...above all, buy EVERYTHING POSSIBLE IN THIS TOWN, or from the farmers of our community that will restore our surplus money to working in our own community – among ourselves – and our OWN prosperity will be greater than otherwise...When we trade with each other we create local prosperity. When we trade with other people elsewhere who do not spend anything with us, we create local depression. There can be no happy medium – it is either one or the other (Clear Lake Mirror, 1932).

This message was repeated in a series of newspaper ads by a group of local businesses. Readers were exhorted, "Divide Your Dollars with Your Neighbors – Buy at Home" (Clear Lake Mirror, 1931a). Clear Lake residents who took their dollars to another town or city or sent them to distant mail-order houses were not much better than the soldier who would desert his comrades on the field of battle: consumers were exhorted, "Stop!! Don't be a Deserter!" (Clear Lake Mirror, 1931b) In Rochester, New York, the local Civic Committee organized a pledge campaign to encourage individuals to promise to spend a certain amount of money within the local economy (Elvins, 2004). In Key West, Florida, retailers organized a "home dollar" campaign in which they reminded consumers that no matter where they spent money in Key West, local businesses contributed to civic improvements, paid wages to people in the area, and helped to improve conditions for all. Consumers were told, "The dollar you spend at home – stays here and works. . . Remember your neighbor will take better care of you than a stranger" (Key West Citizen, 1932).

It was not much of a leap for merchants to move from encouraging consumption at home to devising forms of alternative currency that could only be spent within one community. In the early 1930s, as communities experimented with ways to coax more money into circulation, the idea that some new sort of money could help to solve the crisis gained influence. Boosters argued that scrip could focus recovery efforts in one area, allowing people to help their neighbors without risk of funds being diverted to Wall Street bankers or strangers outside of the area. And in the case of a community where there was little currency to spare, scrip could help to get business moving once again. In the small town of Hawarden, Iowa, Charles Zylstra became an early proponent of stamped scrip. Zylstra, a Dutch immigrant, had worked in a cooperative bank before arriving in the U.S. and was familiar with European currency experiments and the theories of Silvio Gesell (Hawarden Independent, 1932; Weishaar and Parrish, 1933, p.20).

Zylstra developed a plan to pay the unemployed to perform public works: his scrip was designed to generate its own redemption fund through the purchase of stamps. Users of scrip would be required to purchase a 3-cent stamp and affix it to the back of the certificate each time it changed hands. After the money had circulated 36 times, it would be worth \$1.08 (the extra eight cents would be collected for administrative costs) and could be redeemed in cash. The prominent Yale economist Irving Fisher became excited by the possibilities of the Hawarden plan, although he cautioned that the requirement of a purchase of stamp for every transaction would be less effective than a dated plan, where scrip could circulate freely until, after a period of one or two weeks, a stamp would have to be purchased to extend its use. Fisher saw stamp scrip as a direct challenge to consumers who were hoarding currency: it was "a fleet-footed currency which nobody can hoard" because the cost of affixing a stamp on each certificate would penalize any consumer foolish enough to hold onto scrip without spending it (Fisher, 1933). Fisher toured the U.S. offering

advice about the mechanics of alternative currency plans to interested communities, and sent his research assistant Hans Cohrsen to collect material about scrip experiments in Germany and Austria.

Zylstra, while not the inventor of stamp scrip, became a major promoter of its use in the United States. He saw unemployment as a community problem, and argued that just as citizens during World War I had rallied to support the Liberty and Victory bond drives, "WE ARE AT WAR NOW, at war with each other. We are trying to hang onto money and property with a deathgrip, but we do not seem to realize that it is our friend's throat of which we have hold and the harder we squeeze the more difficult it becomes for this friend to supply us with the necessary food and manufactured articles" (Zylstra 1932b). This sense of the responsibility of all community members towards the wellbeing of each was key to the success of the Hawarden plan. Zylstra argued that in a small community, most people would not mind having to pay 3 cents in order to complete a transaction using scrip, given the great benefit that the program would have to general business conditions and in the creation of work for their neighbors (Zylstra, 1932a).



Figure 2. Photograph of corn submitted in exchange for scrip in Clear Lake, Iowa, 1933 (from the collection of Dr. Hugo Godschalk)

Clear Lake, Iowa, was home to a novel effort to help local farmers by abandoning the gold standard for the "corn standard." A group of local businessmen offered to pay 25 cents in scrip per bushel of corn submitted, almost three times the market price. The corn was then to be sold at a public auction. Merchants in the town promised to accept the scrip for purchases, and then turn the coupons over to the Corn Exchange Bank for redemption. Promotional materials published by the Corn Exchange Committee encouraged local farmers and citizens to be a part of a historic moment for Clear Lake: "This is your chance to help this community start conditions improving" (Figure 3). On February 24, 1933, eighteen overflowing bins of corn lined Main Street and South 4th Street in downtown Clear Lake. Souvenir photographs were marketed to the public so that citizens could always remember this moment of area coop-

eration.

Retailers picked up on the notion that scrip helped to ensure that relief efforts were concentrated within the community, and the idea was repeated in publicity for alternative currency campaigns. A plan devised in Canarsie was trumpeted as a "Plan to Keep Money Circulating at Home" (New York Times, 1933b). Professor E. H. Gault of the School of Business Administration at the University of Michigan was an advocate of barter scrip as a means to keep trade flowing within communities. In a memorandum for retailers about the benefits of scrip, Gault suggested that merchants should use scrip as the basis for a "trade-at-home" advertising campaign. He argued that consumers should be reminded in promotional material (and even on individual scrip certificates) with a statement like "You have this money only because our local merchants support home industries. If this money helps you, help your local industries by buying from your local merchants" (Gault 1933). The Evanston, Illinois, Retail Merchants' Association (EIRMA) was instrumental in organizing scrip in that community. The retailers argued that EIRMA money would allow Evanston merchants to pay their taxes, pay wages to area employees and support other local businesses (New York Times, 1932c). Yet this emphasis on the local market could also pose challenges: merchants were caught between wanting to attract customers who wished to make purchases and suppliers who would not redeem local scrip. Even if residents in a community understood their participation in the economy in terms of their patronage of the area department store, that store was firmly part of a national economy. Indeed, that merchant brought in goods not only from around the United States but from around the globe.

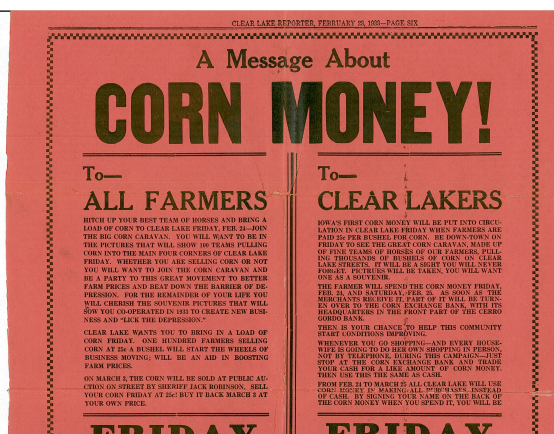


Figure 3. Promotional poster of the Clear Lake Corn Exchange, 1933 (from the collection of Dr. Hugo Godschalk)

The willingness of a large business to accept scrip could give a sense of legitimacy to the use of alternative currency. Rich's Department Store in Atlanta repeatedly stepped in to accept scrip that was issued to the city's teachers when a

capital shortfall meant that their salaries were going unpaid. The store did not require teachers to make a purchase, but simply exchanged their scrip certificates for cash. Between 1930 and 1934, Atlanta issued more than \$500,000 in scrip to municipal workers, which Rich's absorbed (Morgan, n.d.; Roberds, 1990, Elvins, 2010). Rich's reaped the benefit of increased loyalty from Atlanta teachers, and store president Walter Rich was presented as the savior of the city on the front page of the Atlanta Constitution (Atlanta Constitution, 1930). In other instances, however, scrip issues floundered as businesses refused to participate, as was the case when Chicago's State Street department stores refused to accept the scrip which had been paid to city teachers. One store executive explained that if any single department store decided to break rank with the others and accept scrip, "it would mean a tremendous rush of buyers taking out merchandise and leaving the stores with paper which they would be obliged to turn into cash for their own creditors" (Christian Science Monitor, 1931).

SELF-HELP, NOT CHARITY

The traditional American celebration of individualism and belief in self-help meant that even during the crisis of the Depression, many were wary of collective solutions that might undermine the initiative of the unemployed. Since the late nineteenth century, a general cultural acceptance of laissez-faire capitalism and social Darwinist notions had resulted in a sense that the American economy provided opportunities for those who were willing to work, and that it would be unnatural and ineffective to provide handouts for the poor (Katz, 1985; Betten, 1973). A wave of self-help organizations which aimed to mobilize and provide opportunities to the unemployed grew from coast to coast in the early 1930s (U.S. Department of Labor, 1933; Tselos, 1977; Grinstead and Wissler, 1933). Scrip was central to the functioning of many of these new associations. In areas where people had no cash on hand, alternative currency could facilitate barter, allowing the exchange of goods and services to take place much more precisely. Most of the coupons used in barter and exchange associations were in the form of commodity scrip (where warehouse receipts backed up the medium of exchange) but in some cases "hour" scrip was issued which used hours of work as the standard. A group of Harlem businessmen opened the Harlem Mutual Exchange, which issued scrip to members in exchange for hours of skilled work (New York Times, 1933a).

In Minneapolis, a group called the Organized Unemployed ran a warehouse and store where the only circulating medium of currency was scrip. Reverend George Mecklenburg, director of the program, argued that scrip was crucial in bridging the gap between unemployed labor and surplus products. He recalled years later, "Our lack was not food and clothes; our lack was money. People could not buy things without money" (Mecklenburg, 1964, pp. 73-4). Unemployed workers received \$1.50 a day in scrip to work chopping wood, working on a plot of land growing vegetables, making preserves or canning sauerkraut. The organi-

zation ran a "white-collar" restaurant for the unemployed, where hot lunches were sold for 10 cents, and a dormitory where one could pay for a bed to sleep in with 15 cents of scrip a night. The group's store stocked an amazing array of items – not only used goods brought in for barter but wood, produce and a host of products made by workers for the cooperative. At its height, over 1,500 people visited the facility daily (Kurtz, 1933).

Key to the success of the program, in Mecklenburg's view, was the psychological benefit it offered to unemployed Minnesotans. In his memoirs, Mecklenburg described "The best service the Organized Unemployed had rendered was to save the self-respect of the people. They all felt that they were not receiving charity. They were working cooperatively with each other and for each other, under carefully laid plans." (Mecklenburg, 1964, p. 78) A publicity flyer for the organization boasted of the spirit of comradeship that infused formerly unemployed workers, now engaged in chopping wood or working at the sauerkraut factory: "These people feel they are working for themselves, not for somebody else. The ex-banker works with the ex-plumber chopping wood and eating the heartiest meals they have enjoyed in twenty years." A closing statement on the central lessons that the administration of the Organized Unemployed had learned throughout the experiment asserted "Unemployed people want to work. They hate the breadline" (Organized Unemployed, n.d., p. 4). When Karl Starkweather of Plymouth, Michigan wrote to Irving Fisher for information about setting up a scrip program in his community, he emphasized his sense of pride in his own initiative: "Even though I have nothing else, I still have the optimistic attitude, time and energy. I want to use this in some way to help get things out of the general doldrums" (Starkweather, 1933).

The fact that scrip would not be tainted with suggestions of charity but would provide a way for individuals who were down on their luck to help themselves was touted as a clear advantage by communities contemplating the use of scrip for relief payments to the unemployed. In the city of Portland, Oregon, officials emphasized that scrip "represents a sincere effort on the part of public officials and well-meaning private citizens to enable their neighbors to help themselves through self-respecting work" (Multnomah County, n.d.) This language of self-reliance and the psychological importance of allowing individuals to feel that they were earning their relief payments, rather than simply receiving a handout, was echoed by other scrip promoters. When writing to Irving Fisher about the benefits of self-liquidating currency, Charles Zylstra argued:

Somehow people will have to be able to buy the things that they need to live, or the pressure can not be retained and revolution will result. The money necessary to pay for these necessities can be collected as voluntary gifts and donated, destroying people's morale, or it can be provided through a credit extension to provide work (Zylstra, 1932c).

Zylstra compared scrip to a sort of pressure valve that could relieve tensions which might otherwise result of an overthrow of the existing system. Fisher, in turn, underscored the sense of scrip as a relief plan that offers work, not charity, to the unemployed when suggesting the use of a national system of stamp scrip to the Emergency Relief administration. He noted that unlike a “dole” payment which primarily benefits its recipient, scrip circulates through an entire community and thus spreads its benefit to all. Best of all, “When given to the unemployed, Stamp Scrip does not create the psychology of charity; it merely puts the unfortunate in a position to help themselves” (Fisher, n.d.). Economist Stuart Chase argued that these systems of exchange would help to quicken the circulation of real money, but just as importantly, would “restore self-respect and tangible comfort” to consumers enduring the ravages of the depression (Chase, 1933).

PRIMING THE PUMP

Scrip was an innovative experiment for communities grappling with an unprecedented economic crisis. Politically, it was viewed as a “progressive,” but not revolutionary, measure. Communities from across the political spectrum became interested in the possibilities of alternative currency. On one hand, a community like Hawarden, Iowa, was reported as being “governed by a council so ‘liberal’ in its attitudes” that it had created a municipally-owned light and water works to fund all costs of city government. It was not seen as surprising that the council would be open to new collective solutions to the problem of unemployment (New York Herald Tribune, 1933). When, on the other hand, Evanston, Illinois first proposed the use of alternative currency, the Christian Science Monitor described, “This conservative suburb to the north of Chicago has suddenly gone ultra-progressive with the adoption of a stamped scrip plan” (Christian Science Monitor, 1932). The authors of an early survey of barter and scrip in America were emphatic that experiments with community self-help and alternative currency were not a radical departure from traditional practices. They noted,

Most of the three hundred and fifty barter organizations and the one hundred unemployed groups in the country are located in sections of the country populated by what is commonly known as old American stock. They are the plodding, conservative, loyal, ‘rugged individualists,’ the so-called backbone of the nation. In hard times they find it easy to co-operate and work together (Weishaar and Parrish, 1933, p. 105).

The emergency of the Depression could thus push some of these traditional “individualists” into more collective action. But it did not transform their core beliefs. While some Communist Party members and critics of “tyrannical capitalism” called into question the existing social and economic system, the majority of Americans “dug in and helped themselves in a simple way. It is an adventurous, hopeful...American movement” (Weishaar and Parrish,

1933, p. 110).

For even the most ardent supporters of scrip plans, care had to be taken to emphasize that alternative currency would provide a temporary boost to the existing economy, not a way to facilitate abandonment of the current system. The metaphor of “priming the pump” of the economy served as a shorthand for scrip’s role: it would provide a temporary boost to encourage the flow of “real” money into circulation. In his 1933 guide to stamp scrip, Irving Fisher described how as a boy he was given the job of pumping water at his grandmother’s house. After laboring furiously without producing any water from the pump, he was instructed to provide a “supply-side scoop” of water in order to connect with the supply of water in the ground and jerk it out of hiding. Fisher argued, “Such is the office of Stamp Scrip - to prime the pump, which has thus far been unable to connect the great supply of credit currency with the thirsty world. The small scoop of water is the customer walking with his stamp scrip” (Fisher, 1933, Chapter IX).

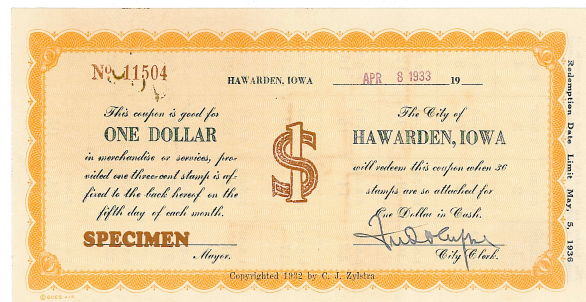


Figure 4: Hawarden, Iowa stamp scrip (from the collection of Dr. Hugo Godschalk)

Fisher saw local scrip programs as insufficient to jolt the economy back to a healthy state, and so proposed a national scrip plan, to be administered through the U.S. Post Office. Democratic Representative Samuel B. Pettengill of Indiana sponsored a bill for a national scrip plan jointly with Senator John Hollis Bankhead of Alabama. In his remarks to the House of Representatives, Pettengill explained how scrip could prompt hoarded dollars back into the economy:

It is submitted that this bill attacks the problem at its foundation. It brings buyers into the market. It encourages the payment of debt. It penalizes buyers for not using available purchasing power....It might be all that is necessary to “prime the pump.” As soon as these buyers come into the market place, confidence should return and values immediately start to rise. If that should be the result, then other money, now hoarded by the hundreds of millions of dollars, would also come into the market. People would say, “Now is the time to buy” (Congressional Record, 1933).

The secretary of the Evanston Illinois Retail Merchants' Association similarly emphasized the way in which scrip could allow not only those in the direst need but consumers who were making do with "shabby and worn" clothing, personal effects and household furnishings because of a general lack of confidence in business. Scrip could help these consumers to finally return to the marketplace. He noted, "The law of demand will be fortified with ready cash to turn the wheels of progress. The law of supply will cause the factory whistles to blow and machinery to hum...our consuming capacity has not decreased, nor has our population decreased" (Jans, 1933).

Even organizations which had managed to set up a sort of alternative economy of barter transactions saw their actions as a supplement, not a challenge, to conventional business. George Mecklenburg argued that Minneapolis's scrip issue would ultimately benefit area merchants, by "stirring up the stagnant pool into which business has slumped" (Tselos, 1977, p. 314). A pamphlet produced by the Organized Unemployed self-consciously rejected any suggestion that the cooperative was somehow a challenge to the capitalist system, maintaining, "We are not a protest movement. We are for labor. We are for the merchants...We do not interfere with regular business because we create new business which would not have been in existence had we not organized" (Executive Committee, 1933). Such programs were conceived as a way to temporarily create a separate economy for the unemployed. Organizers assumed that as soon as members of the cooperative regained full employment, they would once more use their wages to shop in the conventional retail outlets of the community. Scrip simply facilitated exchange amongst the unemployed and was thus a supplement, not a threat, to the "regular" economy.

CONCLUSION

The many business leaders and politicians who supported scrip were split between a willingness to experiment for the sake of recovery and an essentially conservative faith in the capitalist system. For those interested in promoting alternative currencies in the twenty-first century, there are some lessons that can be learned from the experiences of Americans during the Great Depression. Given the diversity of those involved in scrip plans, it is striking the extent to which common themes of self-help, cooperation, and local community action recur again and again in the articles, speeches, and promotional materials supporting alternative currency. It is possible that some of the activists involved in these campaigns had larger goals of transforming the economy: figures like Charles Zylstra and Irving Fisher certainly floated other ideas of monetary reform that extended beyond the crisis of the Depression. Others, like the merchants involved in Evanston's EIRMA scheme or the members of the Clear Lake Corn Exchange saw their actions as an extraordinary response to extraordinary conditions. If scrip worked as they hoped, eventually it would no longer be needed, and the economy would go back to functioning as it did during the prosperity of the 1920s.

Despite the hopes and ambitions of all of these groups, scrip did not prove successful in ending the Depression. As Jonathan Warner has noted, at best these experiments temporarily helped to mitigate the worst effects of unemployment in small communities (Warner, 2010). Typically, after a flurry of interest and newspaper reporting about the start of a scrip plan, after a period of only a few weeks or months the issue would collapse and local governments sought out other means to solve their financial crisis.

This paper suggests that it is worth paying attention to the rhetorical strategies used by scrip organizers. In the American context, there has traditionally been little room in mainstream political discourse for expressions of radical collective action. During the 1930s, scrip organizers were able to encourage individuals to participate in alternative currency experiments by highlighting the relationships of local consumers to the businesses in their communities, by emphasizing the ways in which scrip was superior to charity in preserving values like individualism and self-respect, and by shying away from any suggestion that alternative currency was revolutionary or would permanently change the structure of American capitalism. This is not to deny the transformative potential of scrip as a tool of reform, but to remind organizers of future scrip plan that in order for any plan to resonate beyond the realm of local activists, to be truly embraced by a wider public, attention must be paid to larger cultural patterns and beliefs. By appealing to traditional American notions of self-help and individualism, scrip organizers might be able to broaden their support and ensure the continued success of complementary currency issues.

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International Journal of Community Currency Research

Volume 16 (2012) Section D 22-35

TAX ANTICIPATION SCRIP AS A FORM OF LOCAL CURRENCY IN THE USA DURING THE 1930S

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ABSTRACT

During the world economic crisis of the 1930s, the United States experienced widespread use of local currency or “scrip”. The most significant form of scrip, both in terms of the longevity and size of the issues, was tax anticipation scrip. This article surveys the varieties of tax anticipation scrip issue during this period, and suggests some applications to non-crisis circumstances. After outlining the general experience with depression-era scrip, this article describes the nature and origins of tax anticipation scrip as a particular form of local currency. It also examines specific local arrangements that affected the successful circulation of such scrip. The American jurisprudence concerning non-national currency is assessed insofar as it puts into legal context scrip issued during the 1930s. The article concludes by relating the significance of the American experience of the 1930s to neo-chartalist interpretations of the origins and functions of money.

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INTRODUCTION

During the world economic crisis of the 1930s, the United States experienced widespread use of local currency or “scrip”. The most significant form of scrip, both in terms of the longevity and size of the issues, was tax anticipation scrip. This paper surveys the varieties of tax anticipation scrip issued during this period, and assesses its significance and applicability to non-crisis circumstances. Based neither upon the good will and voluntarism of its users, nor upon the power of the state to enforce legal tender, tax anticipation scrip represents an intermediate form of monetary practice that can be calibrated to the structure and functions of the local governments that issue it.

After outlining the general experience with depression-era scrip, this article describes the nature and origins of tax anticipation scrip as a particular form of local currency. It also surveys specific arrangements in different municipalities that affected the successful circulation of such scrip. While perhaps relevant only to the American historical experience, the jurisprudence concerning non-national currency is assessed insofar as it puts into legal context scrip issued during the 1930s.

Finally, the concept of tax-based monetary issues is not unknown in monetary theory, and this article concludes by relating the significance of the American experience of the 1930s to neo-chartalist interpretations of the origins and functions of money.

CONTOURS OF THE SCRIP PHENOMENON

Between 1931 and 1935 hundreds of experiments in local currency or “scrip” flourished in the United States as attempts to grapple with various aspects of the economic crisis¹. Some experiments, notably the use of clearing house certificates during the bank ‘holiday’ of March 1933, were intentionally designed to serve only briefly until banks reopened. Similar emissions by municipalities, business groups and even private individuals also sought to provide a circulating medium in place of frozen bank deposits. Local business groups also put out issues styled as “auction scrip” or “prosperity checks” in order to generate greater local trade. Other types of scrip, such as that issued by barter and self-help groups, lasted as briefly as the groups themselves. Mostly established during 1932 and early 1933, these groups failed to survive beyond the worst of the economic downturn, especially as new federal aid programs undercut their rationale for existence. Even those ideologically-motivated groups founded explicitly as alternatives to capitalist production relations proved unable to sustain themselves. To manage their own unemployment relief efforts, many communities issued scrip that was only redeemable for staple goods at selected stores or public commissaries. Useful for managing public works projects, such scrip found little circulation outside of the circuits between workers and stores. Finally, the most unusual

form of local currency issued during the depression era in the United States, stamp scrip, proved notoriously ephemeral. Promoted by the economist Irving Fisher as a stimulant to monetary velocity, the myriad examples of local stamp scrip typically foundered upon the unwillingness of its users to purchase and affix the necessary stamps that would validate the scrip.

In contrast to this generally unremarkable record, one form of local currency did experience a widespread, if uneven, success: tax anticipation scrip. Issued by nearly 100 municipal governments across the USA, tax anticipation scrip functioned legally as a flexible form of short-term credit that enabled governments to meet payrolls, pay vendors, and otherwise make up for shortfalls in the tax receipts from economically-strapped communities. Such scrip gained its acceptability from the prospect of recipients being able to use the scrip to pay their obligations to the governments that issued it.

Tax anticipation scrip was certainly not the only form of local currency that articulated in some way with public authority. For example, the state of Wisconsin permitted the issue of a uniform bank scrip in early 1933; similarly, at the height of the banking crisis, New York proposed its own state scrip until it encountered opposition from the federal government. Thanks to the efforts of the monetary entrepreneur Charles Zylstra, the Iowa legislature authorized the issue of county-level stamp scrip. One early form of stamp scrip issued by the city of Evanston (Illinois) linked the scrip’s funding to the purchase of the city’s short-term debt. More broadly, many forms of local currency gained acceptability because they could be used under restrictive circumstances to pay certain public fees, such as utility bills.

In contrast to these examples, however, tax anticipation scrip was distinctive in that it could be used by citizens to meet the broader obligations they had toward their local governments. This is what gave such scrip its ‘currency’, and assured that it circulated for a far longer time—even into the early 1940s—than any other variety. While it was not even generally perceived at the time to be a monetary phenomenon, such scrip nonetheless served as a flexible adjunct to the national money supply, circulating in some places for years until normal fiscal conditions returned.

CIRCUMSTANCES GIVING RISE TO TAX ANTICIPATION SCRIP

Tax anticipation scrip emerged in the early 1930s as an outgrowth of the routine fiscal practices of American municipal governments. Local taxes, typically leveled upon various forms of property, were collected at specific points during a fiscal year; in contrast, public disbursements to meet payrolls and payments to vendors flowed continuously. As a result of this mismatch between the timing of revenue collection and expenditures, some sort of borrow-

¹ Early surveys of the use of scrip during the 1930s can be found in Brown (1941) and Harper (1948). Two more recent treatments of a general nature are Elvins (2005) and Gatch (2008).

ing facility was necessary to manage municipal expenditures. In normal times, this could be done either by short-term financing from local banks, or in larger cities by the sale of tax anticipation notes to investors. In effect, tax anticipation financing provided a source of short-term credit that solved a common problem of municipal finance.

Yet the political and legal implications of this financing were not unproblematic. Municipal governments disbursed funds using "warrants", much as individuals might write checks. If an individual had no funds in her account, then her check would not be paid by the bank. Governments, in contrast, operated under greater legal forbearance. Tax levies provided a baseline estimate of what governments had to spend; collected at specified intervals, these revenues funded the recurring obligations that governments had endeavored to meet through their appropriations. Even if tax collections fell short of the estimates, governments could issue warrants in anticipation of the taxes that would redeem them. Crucially, the creation of such floating debts was not subject to the legal limitations that governed the issue of state and local debt. By the 1930s, a majority of American states imposed restrictions on the amount and type of debt that governments could incur. Moreover, nearly all state governments were forbidden from pledging the states' credit to indirectly guarantee the debts of local governments or private corporate entities (Ratchford 1966 [1941]: 429-445). Yet state courts had interpreted the issue of warrants against tax levies as not giving rise to a municipal debt, even in the event that the actual revenues were insufficient to pay them. As a result, state and local governments could evade constitutional or statutory limitations on their borrowings by creating floating debts in the form of unpaid warrants. These debts did not count against existing limitations, even when they were later covered by bank loans or funded by the later sale of tax anticipation notes (Harvard Law Review 1932; Ratchford 1966 [1941]: 468-473).

While a common financial practice, the issue of warrants or notes against anticipated taxes was frowned upon by municipal finance experts, who stressed their potential for abuse. Indeed, the economic crisis of the 1930s upended these financing relationships, and exposed the danger of using a floating debt to finance current expenditures. Although the market for corporate debt was the first to price in the economic downturn, by the end of 1931 municipal debt became increasingly difficult to place with investors as it became apparent that the magnitude of the downturn was affecting tax revenues. Characteristic of these difficulties was the stark divergence between the pricing of local, state, and federal debt, as risk-averse investors fled to the greater security of debt backed by a national tax base (State and Municipal Compendium 1933). Dependent as they were upon property (real estate) taxes, state and local governments found their financing disrupted by the economic collapse. Declining property valuations that accompanied the depression eroded the tax bases of state and local governments. Unemployed citizens and bankrupt businesses increasingly lost their properties to tax foreclosures,

which only reduced the tax rolls and burdened municipalities with unsalable properties. Tax arrears soared, sometimes in response to organized citizen resistance ("tax strikes") to municipal levies (Beito 1989).

The fiscal experiences of two major American cities, Chicago and Detroit, were emblematic both of the fiscal predicaments that gave rise to scrip, and of how scrip could be used well or badly. In Chicago, legal challenges to property valuations in the late 1920s created a fiscal crisis even before the depression began. When the depression hit, collapsing property values revealed incompetent and corrupt property assessment practices which only aggravated the tax shortfalls of the 1930s. As a result, Chicago was the first major city forced to pay its employees in tax anticipation warrants. Teachers were particularly hard-hit by the crisis, going for nearly two years until Fall 1933 with only occasional payments of their regular salaries (Burbank 1971).

The city of Detroit's fiscal problems also predated the worst of the economic depression. The rapid growth of the automobile industry during the 1920s (and a near tripling of the city's population between 1915 and 1930) fed a boom in municipal borrowing to finance the city's expanding infrastructure. As the automobile market shriveled after 1929, the city found it increasingly difficult to both refund this debt and borrow in the short term to make up for tax shortfalls. Between 1929 and 1933, mortgage foreclosures quintupled. By 1932-1933, tax receipts amounted to only 65% of the official levy; at the same time, the percentage of the city's budget devoted to debt service charges jumped to over 40%. The scissor blades of growing debt and declining revenues also increasingly cut Detroit off from access to any short-term financing. Beset with a heavy debt, a crumbling economy, and mounting tax delinquencies, the city government worked with groups of prominent citizens to maintain confidence in its creditworthiness. In particular, the Committee on City Finances (the "Stone Committee") sought to maintain workable relations between the city and the banks which provided it short-term financing, while the Committee of Industrialists (headed by Alfred Sloan, Jr., President of General Motors) worked to minimize the backlog of delinquent taxes (Wengert 1939; Harper 1948: 51-58).

Nationwide, the fiscal problems of municipalities were aggravated by the depression's effects upon the banking system. The steady erosion of banks' balance sheets led, by late 1932 and early 1933 to the declaration of state-level bank 'holidays' to prevent depositors' runs that would push illiquid institutions into insolvency. Culminating in the national 'holiday' declared by President Roosevelt in March 1933, these closures not only deprived municipalities of a source of financing, but cut them off from whatever funds they themselves had on deposit.

While the experiences of Chicago and Detroit were spectacular examples of the difficulties municipalities faced, the fiscal pressures were widespread. By 1933 some two thousand municipal governments had defaulted on payments of interest or principal on their debts, and only the largest

cities retained at least some access to short-term financing through the nation's capital markets². To relieve these pressures, a number of state legislatures authorized the use of tax anticipation financing in the form of scrip³. Although no state-level schemes for tax anticipation scrip were considered (for the legal reasons addressed below), state governments essentially countenanced the transformation of the existing practice of short-term borrowing into a form of local currency⁴. In addition to being labeled "scrip", these issues were designated tax anticipation notes, warrants, city bills, and even "baby bonds". By denominating these instruments in standard amounts and issuing them to "bearer", governments could pay these out to employees and vendors in place of warrants made out in odd amounts and payable to particular parties. While these instruments could not be redeemed immediately for standard funds, they often bore an interest rate (which enhanced the willingness of recipients to hold them) and could be used to pay current or delinquent taxes.

The funding of public schools via property taxes was an important function of local governments, and some scrip issues were explicitly labeled "school scrip", issued to pay teachers' salaries and acceptable for school taxes (De Young 1936: 367-9; Brown 1941, vol I: 45). For example, in 1931 Michigan authorized local governments to issue interest-bearing tax anticipation notes, setting up a "Loan Board" at the state capital that would approve the applications of local school boards to issue scrip (Curto 1949). In New Jersey, even as the County of Atlantic issued "school scrip" on behalf of school districts in Atlantic City and Ventnor, these communities in turn put out their own separate municipal scrips that circulated concurrently (Mitchell and Shafer 1984: 149-152).

Whether specified as school scrip or paid out for other obligations, local governments created forms of local currency out of the prevailing practices of short-term municipal finance. Authorized by state legislatures, approximately one hundred municipal governments of different sorts—Counties, cities, townships, boroughs, school districts—leveraged their powers to tax in order to sustain local scrip circulations. These circulations had the simultaneous effects of increasing the purchasing power of governments (thus avoiding layoffs and further curtailment of services) and improving the rate of taxpayer compliance by giving citi-

zens an instrument redeemable in their own civic obligations.

While there was no single formula for issuing municipal scrip, the details of Detroit's experience may be taken as illustrative of the broader phenomenon. On the verge of an agreement with a syndicate of banks to underwrite a funding of the city's projected deficit, Detroit was forced into default when the state banking holiday of February 24, 1933 deprived the city of the banks' resources. At this point, Detroit resorted to scrip as a substitute for short-term bank financing. On April 5, the legislature hurriedly passed the "Wayne County Scrip Bill" which amended the existing authority of municipalities to use tax anticipation notes so that such debt could be issued as circulating scrip. While available to all counties and municipalities in the state, the bill was intended primarily to meet the fiscal emergency in Detroit (Commercial and Financial Chronicle 1933). Between April 1933 and April 1934, three separate issues of scrip totaling \$41.9 million funded the city's deficit. The first \$18 million issue came out in April and May of 1933. Backed by the prospective receipts of the 1933-1934 tax levy, whose cash payments the City Council had explicitly appropriated to build a redemption fund for the scrip, Detroit's new currency bore a maturity date six months after the issue. It paid 5% interest, though was made callable ten days after an official notice of intent was published by the city. By city ordinance discounting of the scrip was made an offense, though this feature seemed to have no practical significance. Paid out to city employees and vendors, scrip was acceptable at par plus accrued interest for current and delinquent taxes, water utility charges, and other city fees (American Municipal Association 1934; Harper 1948: 60-61)

These features of Detroit's scrip were consistent with the guidelines laid out by the state legislation that authorized Michigan cities to issue municipal scrip. Indeed, the state law permitted maturities of up to one year, and an interest rate up to 6%. Scrip issues in Michigan were limited to 85% of the amount of current taxes due, 60% of delinquent taxes, and 25% of future taxes (United States Conference of Mayors 1933; American Municipal Association 1934). In any event, the maturity date meant little, given how the scrip functioned. Since scrip paid out by the city quickly returned to settle tax bills, the first issue was redeemed as soon as August 1933. The maturity date amounted to a

2 Excluding floating debt like tax anticipation financing, the annual total of new municipal debt issued in the United States had dropped from a high of \$1.5 billion in 1927 to barely \$500 million in 1933, the lowest level since 1918. By the beginning of 1934, approximately \$1 billion of an outstanding \$18 billion in municipal debt was in default. Symptomatic of both the poor state of the economy and of municipal finances were the facts that fully 40% of the 1933 issues were devoted to "poor relief" rather than traditional infrastructure purposes, and that net of debt retirements, total municipal debt actually shrank in 1933. See *State and Municipal Compendium* (1934).

3 These states were: Indiana, Illinois, Michigan, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, and Texas. In addition, even if they did not authorize the actual issue of scrip, an equal number of states passed statutes allowing bonds, notes or warrants to be received for taxes. These states were: Alabama, Arkansas, Colorado, Florida, Idaho, Illinois, Iowa, Kansas, Oregon, South Dakota, Utah, Washington, and Wisconsin. (Yale Law Journal 1934, 950-953; Harper 1948, 48).

4 In Harper's (1948) opinion, "no basically new legal forms were developed by municipal governments for use as scrip. Existing types of credit instruments needed only to be made payable to bearer, split into small even denominations, and paid directly to creditors and employees instead of being sold to banks or investors for cash" (119).

formality that simply assured its users that scrip was not some kind of unfunded debt of indefinite duration. Moreover, the legal provision that a cash fund would be built up to redeem the scrip was also otiose, since the scrip was in fact and practice redeemed through the sheer process of paying off taxes. No cash redemption was necessary since the scrip was extinguished through the very nature of its function. A second issue of \$10 million was emitted in September 1933, but improved cash collections allowed the city to call the scrip for redemption in January 1934. Circumstances nonetheless required a third and final emission of \$13.9 million in April 1934, though with the return of more normal financial conditions, Detroit was soon able to resume short-term borrowings from banks. Indeed, \$1 million of the final scrip issue was simply sold as an investment to a bank at par plus accrued interest (Wengert 1939: 18-20).

Operating under guidelines established by the state legislature in 1931 and 1933, Detroit's experience was repeated by over forty other taxing authorities in Michigan. Most of these circulations, like Detroit's, were retired by 1934, though some of the more financially-precarious school districts (Ferndale, Lincoln Park, and several townships in Oakland County) continued to use scrip as late as 1936. Detailed newspaper accounts exist for the city of Owosso (Shiawassee County) where economic conditions as well as public funds locked away in closed banks led to three different types of scrip, one issued briefly by local merchants, one by the city government, and one by the school district. Data are also available for Benton Harbor (Berrien County), where similar circumstances forced both the city and the school board to resort to scrip (Mitchell and Shafer 1984: 110-135; The Owosso Argus-Press 1933: March 4, 10, 15-17; The [Benton Harbor] News-Palladium 1933: May 16; June 6, 20).

Similar laws passed by the Ohio and New Jersey legislatures set in motion substantial scrip issues in those states as well. In Ohio, the Marshall Act of April 15, 1933 authorized counties, upon application to the State Tax Commission, to issue scrip if tax receipts fell below 90% of the anticipated amount. Non-interest-bearing scrip would then be apportioned by county auditors to the municipalities that applied for it in proportion to the amounts of their tax delinquencies. Scrip could remain in circulation for a maximum of five years and its redemption occurred through tax payments only (The Toledo City Journal 1933). New Jersey's law, passed a month earlier, also extended the existing authority of counties and municipalities to issue tax anticipation notes to include small-denomination bearer scrip. As in Michigan, interest payable on New Jersey's scrip was capped at six percent (Commercial and Financial Chronicle 1933; American Municipal Association 1934).

By early 1933, New Jersey's finances had entered a state of crisis similar to Detroit's. Growing tax delinquencies meant that only 65% of the 1932 levy statewide was collected; cumulative delinquencies amounted to an entire year's tax revenues. Payments on municipal debts, including tax anticipation borrowings, ate up 45% of available revenues.

The heavy reliance upon property taxes in a prolonged economic downturn dried up the revenue stream. Not only did property owners lack the income to pay their taxes, but the market for property seized for nonpayment of taxes also disappeared. By mid-1933, 120 New Jersey municipalities, led by Atlantic City, were in default on some portion of their debts, and nearly twice that number of school districts could not pay their teachers. In these circumstances, the use of scrip in New Jersey became widespread. To maintain their operations, New Jersey municipalities developed an extensive network of scrip circulations which, by the end of 1934, encompassed 8 counties, 11 cities, 3 towns, 11 boroughs, and 10 townships, all of which together issued nearly \$27 million in scrip (New Jersey Legislature 1933: 9, 40; New York Times 1934; Brown 1941, vol. I: 169-171).

Details from Monmouth County illustrate how New Jersey's scrip system worked. Between September 1933 and September 1935, the County's Board of Chosen Freeholders authorized 14 issues each of \$200,000 in scrip, bearing 5% interest, payable at maturity in 1937. The County Treasurer's office installed a special teller window to handle all scrip transactions. Scrip turnover was rapid. By January 1934, of \$600,000 issued, some \$340,000 had been paid in taxes, leaving a scrip liability of \$260,000 as the year began. Six more scrip issues of \$200,000 each were paid out through November 1934. On December 1, 1934, about \$955,000 of this scrip had been redeemed through tax payments. By June 1935, when the Freeholders announced their 13th issue, the County had issued \$2.4 million, of which only \$380,000 remained outstanding. (Wain 1934; Red Bank Register 1933: September 27; 1935: June 6, September 19).

In Monmouth County, "officials were not long in discovering that, automatically, every one to whom scrip was issued, whether in lieu of salaries or in payment of bills, became a tax collector of Monmouth". Other advantages became apparent. Scrip paid in before 1937 accrued no interest, so the County saved on charges that would have been owed on bank financing. Moreover, instead of accumulating delinquencies, Monmouth taxpayers not only paid off arrears but met their 1934 obligations in full. Of fifty different tax districts within the County, all accepted the County's scrip, as did utilities and outside vendors. No discounting of scrip was apparent, at least for the early issues. Within the County, local governments replicated this success. Of \$150,000 issued by the city of Long Branch, only \$8,500 remained unredeemed before a December 1934 maturity date. Officials in Asbury Park claimed its scrip saved the city \$22,000 in interest charges which would otherwise have been due to banks. In the tiny borough of Union Beach, scrip was returned to the treasurer for taxes as rapidly as one day after its issue (Wain 1934).

After some initial problems with the discounting of its scrip, the summer resort of Ocean City (Cape May County) quickly circulated and retired most of a \$150,000 issue between March and June 1933. Local merchants organized to find ways of getting scrip to those needing to make tax

payments. Building and Loan companies took the scrip for mortgage payments, as did utilities for their fees. Chain stores were less obliging. Many merchants limited their acceptance of scrip to purchases by city employees only, or confined its use to paying customers' overdue bills. Other merchants accepted scrip only up to the amount of their own tax liabilities. Change for the scrip was often made in store credit, not cash (Ocean City Sentinel-Ledger 1933: March 24).

Initially skeptical about scrip, the local newspaper gushed over its benefits. "Ocean City scrip is a outstanding success—a miracle worker!...Resort business houses that at first viewed scrip as an insufferable nuisance have found it a wonderful business stimulant, and now eagerly await fresh disbursements of it by the city. They have found it easy to dispose of to taxpayers." Cape May County added to local currency supplies with its own scrip circulation in May 1933. Under state law, municipalities were required to accept county scrip (in addition to their own scrip) up to the amount they owed their counties in taxes. In addition, the scrip was good for fines and fees collected by the counties (Ocean City Sentinel-Ledger 1933: May 12).

County scrip was thus useful locally, within limits. In late 1933, the city of Red Bank, which itself did not issue scrip, accepted Monmouth County scrip in tax payments up to the \$54,000 it was obliged to remit to Monmouth County. For similar reasons, the city of Matawan limited its acceptance of Monmouth County scrip to 20% of taxes owed. While acknowledging the benefits of scrip, the city of Red Bank's newspaper considered its use symptomatic of county government mismanagement and fiscal extravagance, judging scrip to be "an ill wind, but it may blow some good". The paper also worried that the extended use of scrip only encouraged property owners to prefer it to standard funds when making tax payments, thus aggravating the very budgetary shortfalls that scrip was supposed to remedy (Red Bank Register 1933: September 20, quote; October 4; 1935: April 25).

With the passage of authorizing legislation in Michigan, Ohio, and New Jersey, it became apparent that, unlike other forms of depression-era local currencies, tax anticipation scrip was not a fleeting phenomenon. Unlike clearinghouse certificates, tax-based scrip was not retired with the reopening of the banks in March 1933; unlike the scrip of barter and self-help groups, it did not circulate merely on the margins of the formal economy; and, unlike stamp scrip, its method of validation did not confine its circulation to smaller communities. As a slight modification of long-standing financial practices, a circulating medium backed by the taxing power of local governments was both familiar and unsettling. Good financial practice accepted that governments could borrow in order to match the continuous flow of municipal payments to the clumpier receipt of tax revenues. Yet managed badly, such tax anticipation financing enabled reckless spending and accumulated deficits that violated the spirit, if not the letter, of state laws. This ambivalence made it difficult to accept the practical success of tax-backed municipal scrip. Even at the nadir of the de-

pression in mid-1933, when such scrip was a widespread and successful reality, expert orthodoxy still condemned municipal borrowing against tax receipts; as one authority put it, "as soon as we recognize this as an unsound practice the better" (Wall Street Journal 1933). Some issuers even shied away from the use of the word "scrip", preferring euphemisms like "baby bonds" to accentuate the distinction between currency and debt (Pierson 1934; Brown 1941: 39). Yet the local government officials who actually implemented these programs appreciated them not only for the support they gave to municipal finances, but for the economic stimulus they provided to local communities.

Reflecting on New Jersey's experience, Arthur N. Pierson, a former state senator, both acknowledged tax anticipation scrip's usefulness as a cash substitute yet cautioned that it was "the same as a high-powered stimulant in the hands of an unskilled physician". A scrip program was most effective, he averred, if implemented before it became a desperate fiscal last resort. No more than half of a municipality's payroll should be met with scrip, he counseled. The maturities of scrip should be no more than six months, and would ideally be matched to the cycle of tax payments. In this way, "by restricting the proportion of the scrip to be used, and the term to three or four months, practically the entire issue would find its way back in the municipal treasury in the payment of taxes before its due date". In contrast, Pierson warned, scrip that lingered as a long-term, unfunded debt was sure to fall to a discount (Pierson 1934: 25).

Carl H. Chatters, a prominent national municipal finance expert, was more sanguine than Pierson and saw some role for tax anticipation scrip in local finances. Skeptical of stamp scrip, Chatters nonetheless thought that tax-backed municipal scrip was "no different than a bank loan except that merchants, employees, and other citizens lend their credit to the city directly instead of through their banks". "Cities should devise at once some means of borrowing on short term small denomination notes. The security and pledge made for their payment should be ample. Small notes should be transferable by delivery and larger denominations by endorsement. It will be necessary to have new media of exchange for a short period at least, and municipalities having the confidence of their citizens should provide these media" (Chatters 1933a: 76). Indeed, Chatters saw in scrip a potential for encouraging civic engagement: "The issuance of scrip and warrants in some form is just another way of borrowing from merchants, citizens, and others in the local communities. If every citizen in a community had a small direct interest in the financial obligations of his city, much less trouble in civic matters might be expected" (Chatters 1933b: 117).

Despite these prospects for a local, tax-based currency, municipal officials during the 1930s were not unmindful that their scrip issues had legal implications, and the following section reviews the jurisprudence on non-national currencies insofar as it might have affected the use of municipal scrip.

THE LEGALITY OF TAX ANTICIPATION SCRIP

Non-national currencies were a common feature of economic life in the United States for the first half of the 19th century. The federal constitution itself imposed a basic division of monetary powers between states and the national government. The national government acquired the power to “coin money, and regulate the value thereof”; conversely, states were not only denied coinage powers, but were forbidden from issuing “bills of credit” (paper currency) or from making “any thing but gold and silver coin a tender in payment of debts” (Art. I secs 8, 10). While uninformative as to whether the national government could itself issue paper currency, the constitution did permit the issue of private bank notes. Grounded upon the common law right to borrow, hundreds of banks as well as non-bank corporations issued thousands of varieties of paper currency, all legally distinct from government-coined money inasmuch as paper currency merely represented promises to pay in gold or silver coin. In contrast, attempts by state governments to issue paper currency were held unconstitutional by the Supreme Court in *Craig v. Missouri* (1830) although an anomalous ruling in *Briscoe v. Bank of Kentucky* (1837) nonetheless granted certain state-owned banks circulation privileges (Nussbaum 1950: 569-581; Nussbaum 1957: chs. 2-4; Dunne 1960: 37-43).

If the antebellum period was the heyday of private currency, the financial consequences of the Civil War (1861-1865) imposed severe limits upon this form of circulating medium by centralizing both the provision and regulation of money. Along with the issuance of government “greenbacks” themselves—the nation’s first legal tender fiat currency—the founding of the National Banking System standardized both the appearance and backing of bank notes. State responsibility for the currency was correspondingly restricted. A federal statute of 1862 forbade private issues of currency in denominations below one dollar, while the notes of state banks were driven out of existence by the so-called ‘death tax’ upon their circulation. The constitutionality of this tax was upheld in *Veazie Bank v. Fenno* (1869), and federal legal tender powers sustaining the greenback were progressively read back into the constitution by the *Legal Tender* cases (Dunbar 1969 [1896]: 170, 198; Dunne 1960: 49-50, 67-83).

While these developments went far towards imposing unity and uniformity upon the nation’s monetary system, numerous anomalies remained. In particular, the barriers to non-national currency were weakened by court rulings that narrowed the definition of currency by tying it more closely to its putative monetary character. The basis for this line of interpretation was *United States v. Van Auken* (1877), which held an issue of fractional scrip to be legal under the 1862 statute as long as it stipulated payment in

goods, rather than in money. *Hollister v. Zion’s Co-operative Mercantile Institution* (1884) extended this reasoning to scrip above one dollar, thus sparing it from the ‘death tax’. In both cases, redemption in goods was held to differentiate legal scrip from proscribed money substitutes. At issue was not the sheer fact that the scrip could circulate like money. In the Court’s view, the limited practical negotiability of such scrip meant that it posed no competition to national currency and could not have been what Congress intended to suppress through legislation (Solomon 1996).

These rulings were important for establishing the legality of private scrip, especially that issued by coal-mining corporations which operated company stores in the communities that they dominated economically. The legal basis of such scrip was that it constituted not a negotiable instrument but a contract between master and servant. Thus, the regulation of such private monies fell not under national currency laws but under state authority, and there the sanctity of contract protected them from state suppression through the end of the 19th century (Tiedeman 1898: 31-32).

Yet the narrow definition of money adopted by these legal opinions also provided an opening for public entities to issue their own circulating media as well. Such reasoning permitted more than just scrip redeemable in merchandise. Thus, in *Poindexter v. Greenhow* (1885) the Supreme Court denied that Virginia’s tax anticipation coupons were bills of credit, even though they were issued as redeemable in lawful money and could circulate from hand to hand. Building on *Greenhow*, the Court argued on similar grounds in *Houston and Texas Central Railroad Company v. Texas* (1900) that state treasury warrants (short-term debt) were not unconstitutional emissions of bills of credit. Ironically, both cases involved attempts by states to avoid accepting these instruments, which the states themselves had paid out at an earlier time, in receipt of taxes. Unlike Missouri’s earlier position in *Craig*, both Virginia and Texas argued that their coupons and warrants were bills of credit, and as such illegal means of payment which were void as a tender! In his *Houston* opinion, Justice Peckham put forth a functional view of money that made its definition a matter of degree. Of the Texas warrants, Peckham wrote, “it must not only be that they are capable of sometimes being used instead of money, but they must have a fitness for general circulation in the community as a representative and substitute for money in the common transactions of business”. Much as the credit of the state of Texas might enhance the warrants’ practical negotiability as a currency substitute, Peckham concluded that “we see nothing in morals or in law which should prevent the State from recognizing and liquidating the indebtedness which was due from it and

which was represented by the warrants" (177 U.S. 66: 84, 92; Solomon 1996).

As a result of this case law, the federal government's position in the 1930s was that municipal scrip did not violate constitutional prohibitions of non-national currency⁵. At the same time, the federal government did not actively support municipal scrip, for example by authorizing the Federal Reserve to rediscount tax anticipation warrants, as city mayors advocated in testimony before Congress (U.S. Senate 1933). That the currency quality of municipal warrants/scrip under the law was a matter of degree meant that officials during the 1930s had to be careful in designing their scrip emissions in order to keep them legal. Indeed, not only could scrip be problematic under the federal constitution, but many state constitutions also contained limitations or outright prohibitions on the issue of promissory notes with circulating properties. Fortunately, as the American Legislative Association pointed out to its members, the federal constitution explicitly forbade only state bills of credit; the emissions of governmental units below the state level were not presumptively unconstitutional. In order to minimize the possibility of tax anticipation scrip being construed as money, state laws permitting scrip "should not contain any wording which might indicate a legislative intention to provide a currency". Creating a currency that was not legally a currency required some legal creativity. Beyond the obvious admonition to not make the scrip look too much like U.S. currency, states were advised to incorporate a number of features that differentiated it from legal money. Among other things, states were advised not to make scrip a general or even a limited legal tender; in contrast, making scrip acceptable for payment of state and local taxes arguably served to facilitate the scrip's redemption, and not to promote its circulation as money. Mandating its cancellation upon payment into municipal treasuries (rather than allowing it to be re-issued) stressed scrip's purpose as a means of paying municipal debts, rather than as a circulating medium. Securing scrip with the good faith and credit of a state implied the scrip was an obligation of the state as a sovereign entity; better, states were advised, to make scrip the obligation of a specific state agency and secured by the pledge of specific revenue streams, assets or properties. Finally, making scrip interest-bearing, and specifying a date of maturity, underscored its character as an evidence of debt, and not an illegal issue of currency (Mott 1933).

CHALLENGES AND SUCCESSES OF TAX ANTICIPATION SCRIP

Some of the legal scruples described above arguably rendered municipal scrip less desirable to the public, while other features might have enhanced scrip's acceptability.

Legal tender qualities, unavailable to municipal scrip, clearly would have widened its usage. Making scrip an obligation of a state, rather than its municipal subunits, would similarly have tended to increase public confidence in the scrip's value. A requirement for local governments to cancel scrip upon receipt rather than pay it out anew to employees or vendors would tend to limit its usefulness as a circulating medium. Finally, backing scrip with general tax revenues rather than the proceeds of a specific levy (like school taxes) would, all things being equal, have given scrip greater security. Conversely, making scrip acceptable for a wide range of delinquent taxes would make it more attractive to users than if it were valid for only a narrow range of taxes and fees. In short, those measures recommended by municipal authorities in order to make scrip look less like money in the eyes of the law would also have tended to detract from its success. Against these hypothetical drawbacks can be placed two advantageous features: making scrip interest-bearing, and specifying its redemption by a specific maturity date.

In practice, the success of municipal scrip experiments was due less to specific features of a given issue than to the overall volume of issues, relative to the commitment of stakeholders, and the economic circumstances that occasioned scrip's use. At a first approximation, the easiest measure of success was whether or not scrip traded at a discount to standard money. The largest example of an unsatisfactory experience with municipal scrip was Chicago's. Issued in a context of chronic fiscal mismanagement and crisis, both the recipients of the Chicago Board of Education's scrip (teachers and other employees) and the merchants who might accept it were disinclined to participate in the experiment. Unwillingness by Chicago banks to hold these warrants meant that city employees went payless if they were unable to sell their warrants at some discount to par. Lacking any firm plan by which the scrip would be later redeemed, the Board of Education paid it out on a voluntary basis to employees whose own unions objected to its use. The Cook County Bankers' Association refused to cash the scrip; major downtown department stores refused it in trade; and those merchants who did accept scrip discounted it substantially. The fewer the number of outlets for spending the scrip, the more difficult it became to spend the large denomination notes (from \$10 all the way to \$500) or to give change for them in legal tender funds. The local utility, which was unusually generous in accepting the scrip for small payments, found itself inundated by teachers desperate to get cash in change (Elvins 2010).

In contrast to Chicago's dismal experience, Detroit managed the single largest issue of municipal scrip in the United States without similar problems with discounting and acceptability. Despite a desperate fiscal situation com-

5 For a contemporary legal opinion from the federal government's perspective, see Herman Oliphant (General Counsel, Treasury Department) to Vernon L. Brown, January 17, 1935. A legal opinion regarding the scrip issues of the County of Hudson (New Jersey) declared them "valid, binding and general obligations of the County of Hudson, payable out of unlimited taxes on all property in the County subject to taxation". See Hawkins, Delafield & Longfellow to William F. Sullivan, September 21, 1933. Both letters are reprinted in Brown (1941, Appendix A, 162-164, 168).

parable to Chicago's that culminated in outright default by February 1933, Detroit managed to issue and circulate over \$40 million in scrip for the next year and a half. Ironically, it was the closing of Detroit's banks as a result of the state banking 'holiday' that made the use of scrip unavoidable: once any refunding of the city's various debts through the banks became impossible, scrip became the only alternative. Both citizens' groups and the banks had previously resisted scrip; yet once it was there, efforts were undertaken to make it work.

Unlike Chicago, Detroit paid employees 20% in cash and the rest in scrip, though vendors were paid entirely with the latter. Detroit issued scrip both in more conveniently lower denominations (down to \$1) to facilitate retail transactions, and in higher denominations (up to \$1000) to provide large holders of scrip such as retailers the opportunity of exchanging many low denomination notes for the convenience of a smaller number of the higher-denomination variety. These could be then held either as interest-bearing investments (as bonds), or used in payment of city taxes. While in the early days of the Detroit example scrip traded as low as 75 cents on the dollar, this discount soon shrank as the Committee of Industrialists set up a \$1 million fund to support the scrip at par. Additionally, the establishment of exchange bureaus where retailers could exchange their scrip for cash from large taxpayers, who then used it to pay their taxes, tended also to minimize the discount. Interestingly, these exchanges had to take place in bureaus outside of Detroit's city limits, since the City Council had deemed the discounting of scrip illegal! These measures, combined with a successful bond refunding in June 1933 and a brighter outlook for tax collections, returned Detroit scrip to par. Indeed, part of the last issue authorized in April 1934 was simply sold to Detroit banks as an investment, as short-term bank financing again became available to the city (Business Week 1933; Brown 1941, vol. I: 40-42; Harper 1948: 58-62).

Other successful examples of municipal tax anticipation scrip, though enjoying the inherent benefit of a smaller size than Detroit's, exhibited similar features. Some 75 miles northwest of Detroit, the small city of Owosso also faced bleak finances. When the city government missed a payroll in mid-March 1933 for want of funds, the City Commissioners authorized the emission of \$20,000 in 6-month scrip ranging in value from 5 cents to 5 dollars. With barely a third of its assessed school taxes paid in and \$20,000 stuck in the bank, the Owosso Board of Education faced mass layoffs of teachers and an early end to the school year. It voted to issue \$30,000 in a range of denominations up to 20 dollars (The Owosso Argus-Press 1933: March 4, 10, 15-17). While neither issue experienced discounting, the problem of making change for the larger-value scrip led to a rebalancing of the denominations, as the city increased the number of 5-cent notes and retired the equivalent value of 50-cent notes. Management of the circulation was handled by the City Treasurer's office, which functioned as a bank for the scrip. By late April, excessive city and school scrip balances with certain merchants were alleviated by the

Chamber of Commerce, which acted as a clearing house to redirect scrip to people needing it to pay taxes. Scrip holders had the option of converting small notes into the 20-dollar denomination, which unlike the others was interest-bearing (The Owosso Argus-Press 1933: March 28; April 5, 12, 21, 24; May 1).

The Owosso school year ended in May 1933 with teachers receiving their final pay partly in scrip, partly in cash, and the Board of Education was able to redeem the last \$9,000 outstanding at its September 30 maturity date. Meanwhile, the remaining \$15,000 of Owosso's city scrip was retired out of incoming tax receipts by its August 15 deadline. Nonetheless, continued lagging tax receipts during the summer made a second issue of city scrip necessary, and \$30,000 more was authorized by the end of the year on similar terms to the first issue. (The Owosso Argus-Press 1933: May 26; July 26-27; September 29; November 28).

Other, larger scrip issues elsewhere made use of similar arrangements. To sustain its circulation of \$880,000 in municipal and board of education scrip, Grand Rapids (Michigan) created a "Revolving Fund" of \$150,000 in cash which it used to purchase scrip from sources that had accumulated excess supplies. The Fund's director canvassed the city's retail establishments to determine where these excesses were building. Although they were separate taxing authorities, the city and the board of education agreed to accept each other's scrip for city and school taxes (a similar arrangement involving the water utility prevailed in Flint, Michigan). Grand Rapids merchants and manufactures also encouraged the circulation of scrip by paying their own employees 20% of their wages in scrip. In Lorain (Ohio), industries purchased scrip for their own payrolls directly from the city. (American Municipal Association 1934; Mitchell and Shafer 1984: 200).

Mobilization of public and business support also bolstered the acceptability of scrip circulations. For example, in Birmingham (Michigan), the school board organized campaigns to encourage the use of school scrip as measure of support for local schools, and teachers' clubs marketed it as an investment (Curto 1949). The West Palm Beach (Florida) Chamber of Commerce abandoned its own plan to issue stamp scrip in favor of promoting the city's tax anticipation variety for the payment of back taxes. In Pinellas County (Florida), where teachers had been paid in scrip, the merchants' association of St. Petersburg sought ways of keeping the scrip liquid (The Palm Beach Post 1933: April 11, 22; St. Petersburg Times 1933: June 8). Milwaukee's (Wisconsin) "baby bonds" overcame early problems thanks to firm leadership by the city's feisty socialist mayor, Daniel Hoan. Facing hostility by bankers and large merchants to city scrip, Hoan organized city employees to keep them from selling their scrip salaries to speculators at a discount; those retailers willing to take scrip were given public recognition and patronage by city employees, and their example pressured other retailers to cooperate with the scrip plan. Initial discounts of 88 cents on the dollar soon disappeared, and the city's interest-bearing scrip became sought after as an investment. (Chatters 1933c; National Municipal

Review 1935a; Hoan 1936: ch. 11). Ocean City (New Jersey) promoted its scrip by accepting it at a 1% premium for timely tax payments, and stood ready to exchange \$500 blocks of scrip for tax anticipation notes that paid a higher rate of interest. The Red Bank (New Jersey) Chamber of Commerce encouraged local businesses to pay scrip to those employees with property tax bills; likewise, businesses leasing property were directed to pay rents in scrip to owners with similar obligations (Ocean City Sentinel-Ledger 1933: May 12; New York Times 1933; Red Bank Register 1933: September 27).

Businesses' support for scrip could also give them some leverage over municipal finance. Atlanta's scrip faced a shaky start in 1932, when the banks would not accept it, until the city's mercantile establishment, led by Walter H. Rich, President of Rich's Department Store, united around a plan to accept scrip partly in exchange for cash, partly in exchange for goods. Henceforth the merchants held an effective veto over the use of scrip in city finances, withholding for example their support for a second scrip issue in 1933, which the city government attempted even as redemption of the 1932 issue remained incomplete (Brown 1941, vol. I: 36; Roberds 1990; Elvins 2010).

In most examples, municipalities paid out less than 100% of their wages and salaries in scrip, which provided practical support to its value. The proportions of scrip varied—80% in Detroit, 54% in Paterson (New Jersey), 60% in Americus (Georgia), 66 2/3% in Pontiac (Michigan), 50% in Milwaukee, and 65% in Dayton (Ohio)—and seemed to be more a function of the available cash rather than any other consideration. Atlantic City (New Jersey) paid the first \$10 of its employees' wages in cash; all wages above that were paid 85% in scrip. By 1935, Atlantic City reduced scrip portion of wages to 50%, and only for paydays in the second half of the month. Royal Oak (Michigan) which had a comparatively long run of scrip (1931-1936), varied the percentage of scrip issued in employee wages and salaries from 25% to 75%, depending upon the amount of cash on hand. Guilford County, North Carolina used scrip for 100% of wages, but only because local banks remained closed through most of 1933 and communities there were desperate for any kind of circulating medium. Like the city of Owosso (Michigan), which also paid all wages in scrip, Guilford County issued fractional denominations that minimized the practical problems of making small change. Otherwise, having at least some wage payments made in cash did lessen the problem of people spending scrip simply in order to receive change in cash, and reduced the need to produce large supplies of the lowest-denomination bills (United States Conference of Mayors 1933; American Municipal Association 1934; National Municipal Review 1935b: 405; Hoan 1936: ch. 11; Brown 1941, vol. I: 172; Curto 1949).

Unlike scrip issued by barter and self-help groups, tax anticipation scrip issued by municipalities suffered at most relatively modest discounts against standard funds. In January 1933, before the largest municipal scrip issues occurred, Carl Chatters testified before a U.S. Senate com-

mittee that such scrip traded, or was cashed, at a 15% to 20% discount which, on top of equally-large cuts in their nominal wage rates, represented a substantial blow to the living standards of municipal employees (Chatters 1933d: 178-9). The discount on Detroit's scrip was initially large, but momentary. In his survey of 74 issues of municipal scrip, Joel Harper (1948: 124-126) found that at least 19 experienced discounts of up to 10%. While Harper gives no specific reasons for these discounts, scattered anecdotal evidence suggests some characteristic causes of discounting.

Milwaukee's scrip plan was pushed through in a hostile environment (see above). In Atlantic City (New Jersey), resistance by small retailers caused the discount on scrip to widen to as much as 20%, although the larger resort hotels stepped in to exploit this discount in order to meet their own tax burdens. As the date of redemption for, and payment of interest on, Atlantic City scrip neared, its notes traded as high as \$1.07 (National Municipal Review 1935a: 405; Brown 1941, Vol. I: 44). As Monmouth County issued \$200,000 in scrip month after month for two years, by 1935 the emergence of a 5% discount suggested some degree of popular fatigue with the device (Red Bank Register 1935: April 25). Paterson's (New Jersey) scrip fell to a discount after local banks refused to handle it (Noble 1978: 90-91). The school scrip of Wildwood (New Jersey) was boycotted by local merchants until the city made it acceptable for its own taxes (Ocean City Sentinel-Ledger 1933: May 26). Although supported by its mercantile community, Atlanta's scrip did trade at a discount of at least 5% outside of the major retailers, according to oral histories (Roberds 1990). Chicago was the largest example of an unsatisfactory experience, where little thought or effort seemed to be made to turn municipal warrants into a convenient medium of exchange for the long-suffering teachers. The only outright failure of tax-backed scrip seems to have occurred in Erie (Pennsylvania), where the bulk of a \$300,000 issue was repudiated under uncertain circumstances (Mitchell and Shafer 1984: 227).

LESSONS OF TAX ANTICIPATION SCRIP

As Harper (1948) concluded in his survey of municipal scrip experiences, whether scrip was interest-bearing, callable, or backed in a particular way was less important to its success than the credibility of its management. Apart from the sheer size of a given scrip issue relative to the ability of local retailers to absorb it, the most important factor in scrip's success was "the efficiency of arrangements for avoiding the clogging of channels in which it tended to accumulate"; in turn, "[t]he degree of cooperation in recirculating scrip...depended largely upon the confidence of merchants in the financial plans of the local government and the amount of intelligent advanced planning and publicity on the part of public officials" (126-127).

The "financial plans" Harper alluded to essentially envisaged the future retirement of scrip, as recovering tax revenues and successful debt refunding plans (as in Detroit's example) returned municipal finances to a cash basis.

Given that defaults on existing debts had precipitated the turn to scrip in the early 1930s, it was understandable that future refunding of these debts would involve retiring municipal scrip as well. Thus, an agreement between Monmouth County and its bankers in July 1935 combined a refinancing of the county's maturing debt and the redemption of its outstanding scrip into a twenty-five year bond at an interest rate lower than that paid on the scrip (New York Times 1935; Red Bank Register 1937: February 11, May 27). In 1936, Atlantic County negotiated a similar agreement with a bondholders' committee that paired the refunding of its defaulted debt with a cessation of scrip issues (New York Times 1936). Within Atlantic County, Atlantic City, which had experienced the largest municipal default in New Jersey, reached a separate agreement with its creditors shortly thereafter (Wall Street Journal 1936).

That scrip was never intended to function as a permanent element of municipal finance may have conditioned the attitude of participants towards its use. Employees who took the scrip in wages, retailers who accepted it in payment for their wares, and governments who received it back as tax payments perhaps displayed greater forbearance towards its use, knowing that scrip was a temporary expedient dictated by the economic crisis. Yet Harper noticed something that municipal officials at the time seemed reluctant to acknowledge: in some respects, scrip issues were superior to bank loans as a tool of municipal finance. The effective interest rate on scrip was lower than comparable bank financing (and entirely absent, if the scrip were non-interest bearing); moreover, scrip gave municipalities a flexibility that standard tax-anticipation financing lacked. Bank loans or tax notes had to be engaged in large, lump sums in advance of tax receipts. In contrast, scrip could be issued directly for wages and other expenses in amounts as needed to accommodate municipal finance needs (Harper 1948: 116-119).

For a local tax-based currency to function in noncrisis conditions as a normal feature of local government finance and local economic activity would require a widespread and public re-thinking of monetary legitimacy. Nonetheless, the scrip experiences of the depression years suggest four relevant parameters for scrip experiments based upon public taxing power:

- Scrip issues must be commensurate with the absorptive capacity of retailers, which have obligations outside the local economy denominated in national money.
- Scrip issues must be commensurate with the absorptive capacity of local governments, which have debt and other payment burdens outside the local economy denominated in national money. Due regard must be taken for the substitution effects of scrip, as taxpayers will prefer to meet their obligations in scrip while hoarding national currency for its superior negotiability.

- Tax obligations must be sufficiently large to create a demand for scrip for use in tax payments to local governments.
- Mechanisms must exist to redistribute scrip from those who have it to those who need it for tax payments ("avoiding the clogging of channels").

These parameters represent necessary, but not sufficient, conditions for successful tax-based scrip to the extent that community willingness to use scrip outside of the circuit of tax payments is an indispensable, albeit residual, condition for a viable tax-based scrip. In the American experience with such scrip during the 1930s, it remains unclear (beyond anecdotal evidence) to what extent scrip actually circulated via transactions unrelated to the original tax circuit. In the case of Atlanta, for instance, despite civic mobilization on behalf of its scrip, the emergency medium functioned more as a source of municipal finance than a local currency (Roberds 1990). Beyond the sheer presence or absence of a discount on standard funds, the broader acceptance of scrip for routine transactions represents a more significant measure of scrip's success qua local currency. At the very least, scrip's suitability as a generalized medium of local exchange would exhibit network effects—the more varied its transactional use, the more useful it would become for further transactions—subject to some minimum threshold below which scrip would be shunned as a nuisance, and a maximum threshold above which scrip would lose its transactional validity (i.e. invalid outside of the prevailing tax jurisdiction, and the economic area to which the jurisdiction is relevant). The determination of these lower and upper thresholds would depend upon the specific articulations of the four parameters set out above; ultimately, however, what activates tax-based scrip is sufficient public willingness to accept scrip as a legitimate economic instrument.

As Elvins (2005, 2010) ably demonstrates, in the 1930s favorable public attitudes towards scrip had to be actively cultivated. Public acceptability of scrip was mobilized through appeals to local economic, cultural, and social values that were threatened by distant forces and interests. This rhetoric of the local was often buttressed by a folk analysis of the causes of the economic depression that accorded to scrip a meaningful role in any future economic recovery. Indeed, the depression years were a particularly fecund period for popular analyses of money, its nature, and its role in either producing or solving the economic crisis. Crank plans abounded (Reeve 1943). Through their public-spirited examples, prominent local citizens (as in Atlanta) could rally support for scrip experiments. Conversely, the absence of such leadership (as in Chicago) could sabotage the use of scrip. For their part, municipal finance experts evinced ambivalence towards scrip, since these experiments had evolved out of short-term borrowing practices that skirted the edge of fiscal responsibility. Despite scrip's successes, its significance as a monetary medium was widely downplayed. By 1934 these experts had united around a set of 'best practices' for the use of tax anticipation scrip that defined it as a financial, rather than

monetary, phenomenon which would disappear once healthier tax receipts would allow governments to return to a cash basis (Ludwig 1934; The American City 1934a, 1934b; Lutz 1936: 815-6). "At best," concluded two authorities, "scrip serves only as a temporary expedient to take the place of more formal borrowing" (Chatters and Hillhouse 1939: 181).

SOME BRIEF REMARKS RELATING TO THEORY

It is a mark, perhaps, of the ideological naturalization of modern money as abstract exchange value that local currency experiments need to be defended as deviations from some impersonal logic of the market. While the vast literature on monetary theory contains scattered references to the concept of tax-backed money, the point of departure for the dominant perspective is that money emerges as a Mengerian solution to the inefficiencies of barter, and that money's fundamental nature is that of a means of exchange (Forstater 2006; Mastromatteo and Ventura 2007; but see Goldberg 2010). Even in the German chartalist tradition, of which Knapp was the major example, the role of the state's taxing power was accorded only a minor role (Ellis 1934: 11, 38-40). The implications of tax-backed monetary issues have been explored in historical research, especially in the context of tests of the quantity theory of money (Smith 1984, 1985a, 1985b; Wicker 1985; Pecquet and Thies 2007). Geoffrey Ingham's prominent restatement of the chartalist perspective traces the origins of money to its function as a unit of account for the calculation of debts with the prevailing matrix of social inequalities mediated by state power. According to Ingham, "both the logic and the historical origins of money are to be found in the state... Monetary space is sovereign space; it does not consist simply in the symbolic representations of market transactions, as it does in orthodox economic theory" (Ingham 2004: 57; see also Wray 2004).

What the chartalist analysis illuminates about the American experience of tax anticipation scrip is difficult to specify. Ingham himself is skeptical about the potential for local currencies insofar as they "do not give rise to the creation of pure abstract value in the form of the social relation of credit-debt, and, consequently, no money in this sense is created endogenously through the extension of bank lending". At best, local currencies can function as limited purpose monies, confined to spheres of "interpersonal trust and confidence"; at worst, "they tend to marginalize the informal economy and reinforce the fragmentation and inequality of the wider economy" (Ingham 2004: 186, 187). For similar reasons Ingham is dubious about the prospects of the Euro, since its technocratic administration by an independent central bank is not matched by an equivalent European sovereign authority.

If the money-sovereignty nexus is constitutive of "monetary space", then the implied lessons of the historical experience with tax anticipation scrip will come from answers to political questions about the powers and autonomy of local governments, and not to economic questions about the putative benefits of local currencies. What are the re-

sponsibilities and proper scope of local governments? How are these to be ascertained and asserted against the powers and pretensions of the central state?

Seventy years ago, these questions were answered to the detriment of local power. Policy responses to the Great Depression in the United States had the cumulative effect of drawing power away from local communities to the states, and from states to the central government. Indeed, far from regretting this transfer of power, municipal finance experts advocated and welcomed the centralization of taxing power and the subsequent reliance of local governments on federal and state grants-in-aid (Hillhouse 1935: 1-7). For the concerns of this article, this centralization took place both in the realms of municipal finance and in monetary practice. From the broader perspective of American monetary history, the proliferation of local currencies during the 1930s appears as an anomalous development in the progressive centralization of monetary power and authority in Washington D.C. By 1935, not only was the gold standard replaced by a fiat currency, but the basic functions of, and responsibilities for, regulating the mechanism of credit were transferred from the regional Federal Reserve banks (especially the New York branch) to the Federal Reserve Board in Washington D.C. As one legal authority wrote about tax anticipation scrip, "it is somewhat surprising that the Federal administration has not taken cognizance of this desultory infiltration of illegitimate paper money into the channels of monetary circulation" (Nussbaum 1937: 1083). Far from taking "cognizance" of this "desultory infiltration", the federal government ignored the use of tax anticipation scrip, and these experiments in local currency quickly faded from public consciousness. A revived awareness of the potential of local currency in the present day requires an appreciation of those historical moments when local currency, despite its success, disappeared as an expression of local power.

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International Journal of Community Currency Research

Volume 16 (2012) Section D 36-48

COMMUNITY CURRENCIES AS INTEGRATIVE COMMUNICATION MEDIA FOR EVOLUTIONIST INSTITUTIONAL DESIGN

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ABSTRACT

The present article shows that community currencies (CCs) are interpreted as integrative communication media with dual aspects of money and language, and that, since money is the most indispensable medium of the modern capitalistic market economy, CCs should be strategic targets for evolutionist institutional design in order to solve current social and economic problems caused by global capitalism.

In order to theoretically view the bidirectional effects caused by alteration of money as a platform institution in its evolutionary perspective, we introduce some basic concepts such as replicators and interactors and illustrate the micro-meso-macro loop model by using those concepts. Then we elucidate the significance and possibility of evolutionist institutional design in policy applications of the theoretical ideas put forward. Lastly, we investigate why and how CCs can be strategic platform media in evolutionist institutional design.

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1. INTRODUCTION

The purpose of this article is to show that community currencies (CCs) which have been used worldwide since the 1990s can be interpreted as integrative communication media, and that, since money is the most indispensable medium of the modern capitalistic market economy, CCs should be strategic targets for evolutionist institutional design in order to solve current social and economic problems caused by global capitalism¹. We will also show that the case for CCs exemplifies the possibility and feasibility of evolutionist institutional design in contrast to other approaches such as constructivist and operationalist institutional design.

Firstly, we explicate communication media and situate money and language as such, and then show that we can comprehend CCs as integrative communication media with dual aspects of money and language. Secondly, in order to theoretically view the bidirectional effects caused by alteration of money as a platform institution in its evolutionary perspective, we introduce some basic concepts such as replicators and interactors and illustrate the micro-meso-macro loop model by using those concepts. Thirdly, we elucidate the significance and possibility of evolutionist institutional design in policy applications of the theoretical ideas put forward. Lastly, we investigate why and how CCs can be strategic platform media in evolutionist institutional design.

2 MONEY AND LANGUAGE AS COMMUNICATION MEDIA

2.1 Society as an autopoietic or self-producing system of communication

In order to redefine the characteristics of CCs as integrative communication media in the next section, we, first of all, refer to N. Luhmann's ideas and classifications of 'communication media' (Luhmann 1984=1995, 1988).

Luhmann defines a total system of society as an autopoietic or self-reproducing system of communication where "communication creates communication." In other words, society is a closed self-referential communication system (Luhmann 1984=1995 ch.4). Then he regards economy, politics, science, education, religion and the like as partial systems of society in which each of the different symbolically generalized communication media functions independently. Here, communication is conceived not as transferring information from a sender to a receiver but as emergent integrity of three selections of information, transmission and understanding (Luhmann 1988, Kap.2).

2.2 Three kinds of communication media: language, extended media and symbolically generalized media

We must note that the word 'media' has a wider connotation than is conventionally used for mass media, means of transmission and mediators. Communication media are emergent entities in evolution that can transform uncertainty into certainty of communication and are classified into three types: 1) 'language' that enables communication of meanings by using auditory and visual signs, 2) 'extended media' such as documents, printing and communication technologies that extend the reach of communication by language, and 3) 'symbolically generalized media' such as money, truth, power, love and norms. Each of these communication media concerns uncertainty in terms of 1) understanding, 2) reach and 3) attainment (acceptance), respectively (Luhmann 1984=1995, ch.4.7-8, 1988, Kap.7).

Human agents can obtain more information through such extended media, (i.e., 'reach media') and judge whether they will accept the information based on such symbolically generalized media (i.e., 'reception media'). In that sense, the reception media functions as filters for selecting information and forming motivations. Reception media thus enable both a sender and a receiver of information to share knowledge as a system of information, but the received knowledge is not exactly the same for them. Then, both intersubjectivity (attachment) and subjectivity (detachment) are simultaneously at work and agents are loosely connected.

If certain symbolically generalized media express a large number of things and bring about generalization of meanings, 'symbolic generalization' results in mediating various differences and closing separations. On the other hand, if such generalization of meanings instead creates various differences and mutual separations, 'diabolic generalization' sets in. Normally, these two functions are tightly interwoven.

2.3 Money for a uniform medium bringing about capital and its diabolic generalization

We further investigate the difference between money and language on the basis of Luhmann's ideas that we have just seen. Money and language are 'artificial media' that are the products of social and cultural evolution and are isomorphic in 'generalization' of differences in time, events and societies. The decisive difference between money and language is that, whereas money is a 'uniform medium' that condenses qualitative diversity and complexity of commodities into one-dimensional information as prices, language is a 'diverse medium' that enables far richer expressions that maintain variety and complexity².

1 The present article aims at integrating the basic ideas in a series of the previous articles (Nishibe 2002, 2004, 2005, 2006a, 2006b, 2010) and showing a synthetic view of CCs for evolutionist institutional design.

2 It is interesting to see that, from a rather different viewpoint with the present paper, Hart (2000) describes the similarity between language and money as two different memory banks and suggests that both would converge in the age of Internet and CCs.

The form of payment by money involves much simpler structures than does the form of statement by language. Money as a measure of value reduces complexity in the real world to a one-dimensional value, and the form of payment functions as a symbolically generalized medium so that division of labor and knowledge as well as new discoveries and innovations are encouraged and sales of a great amount and variety of merchandise in the market are facilitated.

Money, at the same time, brings about the diabolic generalization that expressing everything in uniform prices destroys characteristic properties and qualitative diversity in terms of culture, value and norms particular to nations, local communities and groups of individuals. This problem has become more serious, as more individuals have come to use money as 'capital' for only the purposes of value augmentation and accumulation. Practices of investment and speculation have spread, and thinking ways in terms of rational choice of alternative such as opportunity cost and human capital have prevailed in recent years. This means that the consciousness of people gradually approaches that of capitalists. Women and mothers have gradually come to regard domestic labor and childcare as lost opportunity to earn wages in the workforce. Younger people at present tend to conceive of not only various qualifications but also higher education and learning as investment in their own human capital for gaining higher future income. Such changes in value and consciousness accelerate the dissolution of communities such as universities and families into markets. Later, we will examine what solution CCs as integrative communication media offer to the aforementioned problems.

3. CCS AS INTEGRATIVE COMMUNICATION MEDIA

3.1 CCs with both aspects of money and language

Let us now take a look at how we can describe CCs in view of communication media such as language and money as discussed above. First of all, we must pay attention to the unique characteristics of CCs in this respect.

CCs certainly have aspects of both 'money' and 'language,' like Janus the god in ancient Roman mythology who has two faces looking forward and backward. Although CCs actually are syntheses of these two factors, they tend to have stronger economic connotations because of the association between the words 'money' and 'currency.' In order to clarify that CCs stretch over not only economic domains but also social and cultural domains, we name them 'integrative communication media' since they are endowed with the characteristics of both 'economic media' as money and 'social and cultural media' as language.

Luhmann thinks of the whole society as an autopoietic system of communication and divides it into several subsys-

tems according to 'symbolically generalized media' such as money, truth, power and others. We also regard CCs as belonging to the same category, but consider them unique in the following senses. They possess the main purpose of vitalizing both local economy and local community, and express and convey the values, interests and ethics shared by members of a community, different from conventional money that specializes in economic functions, and thus CCs are not merely language and extended media but also symbolically generalized communication media such as love and norms. Accordingly, CCs are found to have all properties of three kinds of communication media. What CCs accomplish is not to differentiate the whole society into subsystems as do conventional symbolically generalized media such as money, power, truth and love, but rather to integrate such divided social subsystems.

Luhmann explains that a whole society is a closed self-referential communication system whose subsystems are operationally close with different symbolically generalized communication media functioning independently. If so, how can the integration of subsystems by CCs actually take place? Here we have to focus on the peculiarity of powerfulness of money compared to other symbolically generalized media. Since money is a 'uniform medium,' it can successfully reduce our complex and large-scale society as a whole into decentralized networks as cash nexus composed by autonomous transactions as buying and selling by using one-dimensional information as price. All other 'diverse media' cannot do the same. It means that Market with money, neither State with power nor Community with love (fraternity and reciprocity), can solely have the potential to integrate the whole society into the single global market society, as will be shown in section 3.4. This character of money manifests itself as globalization in which money tends to exclude other symbolically generalized communication media.

If we can inhibit such immense propagation of money and weaken its power of social integration, it would be practicable to utilize such ability to connect Market to other social subsystems as Politics and Cultures. In short, CCs can become the communication media for integration, not for division, of the whole society. For this reason, we have described it with the adjective 'integrative.'

3.2 CCs as economic media and social and cultural media

Table 1 shows the dual properties of CCs as integrative communication media (2006b)³. First, let us look at the economic aspects on the left-hand side of the table. The monetary aspect indicates the ability of CCs to one-dimensionally express and evaluate a diverse array of heterogeneous goods and services as a magnitude on a single scale, say, 'green dollars.' Sellers set prices of goods and services and wait for buyers to come, and buyers observe

³ Table 1 is presented here for clear conceptualization of CCs' dual aspects abstracted from various properties of actual CCs, not for taxonomic classification of all kinds of CCs currently operated worldwide. For the latter purpose, Blanc (2011, p.7) successfully classifies CCs into Local, Community and Economic from the viewpoint of three kinds of projects as Territorial, Community and Complementary, respectively.

the prices and decide to make purchases if the goods and services are desired and appropriately priced. Such unit transactions of buying and selling constitute ‘dispersive markets’ conceived as networks of consecutive transactions mediated by money as the means of circulation.

CCs naturally involve such one-dimensional expressions and evaluations and, if they are used repeatedly, circulate among participants as long as goods and services are priced in terms of CCs. Then, we can see that CCs as economic media create some sorts of markets, even if they are different from those in capitalistic market economies. What conventional moneys and CCs have in common is that both of them are uniform media and create ‘dispersive markets’ such as networks of transactions. A common notion is that CCs create communities not markets, but it is not true.

Aspect	Money (economic media)	Language (social & cultural media)
Purposes	Vitalization of local economy (Autonomy, circulation, recycling)	Rehabilitation of community (Dialogue, interchange, commitment)
Functions	Independent design, issuing and administration Bounded sphere circulation No interest or minus interest	Ferment of trust and reciprocity Cooperative ‘prosumers’ Linguistic expression and transmission
Forms	Complementary currencies and Emergency currencies (Stamp scrip, LETS)	Mutual-help coupons (Time Dollars, Eco-money)
Domain	Market	Community

Table 1 Dual properties of CC as integrative communication media⁴ (Source: Nishibe (2006b))

So what is the difference between conventional moneys and CCs? CCs aim at exchange with reciprocity, that is, ‘reciprocal exchange,’ and are supposed to form ‘cooperative’

(i.e., competitive and cooperative) local markets in consideration of another aspect of social and cultural media. In order to understand that markets can include altruistic and bounded-rational agents and cooperative relations among such agents, it is necessary to widen the conventional vision of the market, which is depicted in neoclassical economics as being composed of selfish and super-rational agents with perfectly competitive relations among them.

Let us now turn our attention to a ‘social and cultural aspect’ written on the right-hand side of Table 1. This can also be called a ‘linguistic side.’ All human relations utilize languages and numbers complementarily. Money quantitatively expresses and evaluates everything in prices, so it belongs to ‘one-dimensional media’ different from ‘multi-dimensional media’ that language represents. CCs express and convey a diversity of social values, norms and cultures particular to the issuing and administrative bodies and local communities where the CCs are circulated.

3.3 The purposes of CCs

CCs have the purposes, functions, forms and spheres according to these two aspects. The purpose of CCs as economic media is ‘to vitalize local economy.’ One of the causes for depression and unemployment in local communities is said to be the problem that money flows out of local communities and eventually there is a shortage of money in circulation. For example, Japan has experienced two ‘lost decades’ of several severe recessions since the collapse of the Japanese asset price bubble starting in 1990. Even though Japan as a whole suffered from recessions, there was a great disparity between metropolitan areas and other regions in term of the rate of bankruptcies and the rate of unemployment depending on the interregional balance of payments and the industrial structure. On the whole, rural areas were much more severely affected.

Most towns and villages have the problem of declining shopping streets in addition to the problems of depopulation and population aging caused by the falling birthrate and migration of young people to urban areas where they find more job opportunities. Although motorization facilitated rural and small-town residents going shopping in supermarkets or shopping malls in larger towns, it also gave rise to ‘shopping refugees,’ the elderly who do not drive cars and cannot go shopping far from home. When local shopping streets disappear, so do many invisible community functions that they serve, such as street cleaning, mutual aid, childcare and festivals. As a result, the decline of local economies accelerated and the living environments of all residents deteriorated as well. If the people under such circumstances can create their own local money that stay in the community and circulates there, local economies could become more active and relatively

⁴ All CCs have both properties of economic media and social and cultural media, but the proportions of these are different. For example, time dollars and eco-money are exclusively used for mutual aids and volunteer work, so they are 100% of social and cultural media. On the other hand, Stamp scrips in 1930s are mostly used for shopping daily merchandises in local shops, so it is 100% of economic media. LETS is used for local shopping, but the participants in LETS also exchange their white elephant, skill and knowledge. So LETS is thought of as half and half media. But there is no place in the middle in Table 1, so we put LETS in the left hand side.

independent of the influence of national and global economies. This would encourage forming a sustainable and recycling-oriented local economies of 'local production for local consumption,' which is the ultimate aim of CCs introduced as 'economic media.'

Another purpose of CCs is to 'activate community' or 'activate communication and intercourse.' This corresponds to the 'social and cultural media' aspect of CCs. In order to deeply investigate CC as 'social and cultural media,' we have to take a roundabout way to fully understanding the socioeconomic coordinating principles including markets and the meaning of globalization.

3.4 Globalization: the historical tendency for Market to expand and for Community and State to shrink

In modern capitalistic market economies, all conceivable things including internal organs, genetic material, genetic information, personal information and the right to emit carbon dioxide has been commodified and the market domain has increasingly expanded and deepened.

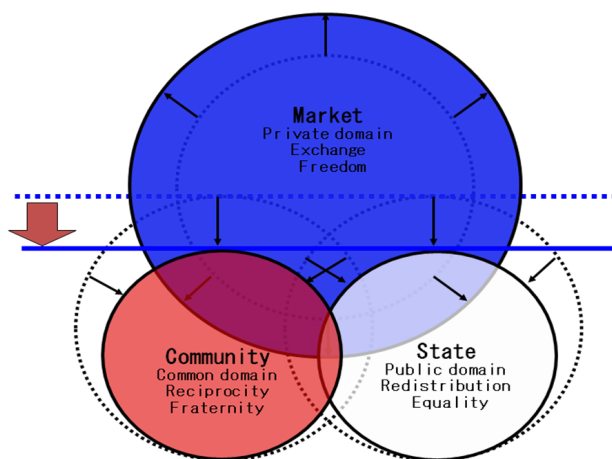


Fig. 1 Globalization (Source: Nishibe (2006a))

Here, in order to make clear the meaning of so-called 'globalization' since the 1990s, we introduce three different coordinating principles of socioeconomics, according to Polanyi (1944) and with some modifications: 1) Market (the private domain of exchange and freedom), 2) Community (the common domain of reciprocity and fraternity) and 3) State (the public domain of redistribution and equality). Let us confirm that three economic principles—exchange, reciprocity and redistribution—exactly correspond to the three political ideals of the French Republic, which originated from the French Revolution—freedom (blue), fraternity (red) and equality (white).

Then, globalization can be interpreted as the historical trend over several decades for Market to expand, and for Community and State to shrink, qualitatively and quantitatively, as shown in Fig. 1. As Marx (1859=1970, 50, 208,

1867=1887, 60) repetitively put it, Market emerges from between two communities, two states, or a community and a state. Once Market emerges from such boundaries, it expands and penetrates into Community and State, dissolves them, and reorganizes them according to Market principles. This tendency can be called 'internalization' of Market. We now understand that globalization is a manifestation of the 'internalization' tendency of Market to commodify everything.

3.5 Capital: the replicator of capitalism to drive globalization as free investment

It is clear that the tendency of globalization is driven by 'Capital'. It is not a tangible thing as inventory, machine, factory, land, but an intangible matter. From the perspective of evolutionary thinking that we will see in section 4.2, Capital is the way to use money for its propagation, that is, the replicator (the institution as a bundle of regulative rules) of capitalistic market economies, not the replicator of a human agent or a profit organization such as a firm. So, to be precise, Capital is the derivative of Market as networks of buying and selling transactions, and it dissolves Community and State and replaces them into Market by its gradual transformation of more kinds of nontradable goods and services into 'fictitious' commodities. If globalization proceeds to its logical end, not only money and assets such as stocks and real estates but also choices, rights, information and genes of ourselves will all theoretically be capitalized as profit-earning opportunities.

If the 'fiction' is realized without any restrictions or regulations in the market, the 'free investment' principle beyond 'free trade' will be fulfilled as the ultimate stage of a capitalistic market economy. We claim that the tendency of globalization actually exists because it is observable that all human relations tend to be reduced to only economic and contractual relations such as buyer-seller and creditor-debtor relations so that all types of communities supported by reciprocal exchange and mutual aid would decline and even collapse. The tendency of globalization has been and is counteracted by 'self-protection of society' (Polanyi, *ibid.*) as in communism and anti-globalization movements.

3.6 CCs: the countervailing measures for market fundamentalism and creating 'Market within Community'

In order to countervail the tendency of market fundamentalism in daily life, CCs can be introduced to rehabilitate reciprocal communities and revitalize human communications. In Japan, 'Eco-money,' which is a CC designed specifically as 'social and cultural media,' became widely used until the early 2000's. But subsequently more attention has been paid to the use of CCs as 'economic media' since Eco-money was found difficult to circulate smoothly, owing to the lack commercial transaction networks. We must understand from the experience that the uniqueness of CCs lies in simultaneous and complementary coexistence of both the 'economic media' and 'social and cultural media' aspects.

CCs are integrative communication media with aspects of both economic media and social and cultural media. They can associate Market with exchange and competition and Community with reciprocity and cooperation, and integrate Market and Community into 'Market within Community.' Since CCs have a strong affinity for both Market and Community—like soap that allows oil and water to mix—, CCs would work as interfacial active agents at the interface between Market and Community so that the two easily mix. CCs can thus provide a socioeconomic policymaking measure for balancing Market and Community in order to overcome the defects of both: capital running out of control as well as corruption of closed and collusive relations, and 're-embed' the 'disembedded' market economies into society and culture.

3.7 The functions of CCs

Next, let us turn to the functions of CCs. First, we shall examine their functions as 'economic media.'

a) Independent design, issue and management

Any groups can independently and voluntarily design, issue and manage CCs. If people create their own CCs and conduct transactions with them within a certain area, it means that they partially restore the right to issue money as a civil liberty and social right. This is the liberal and democratic property of CCs.

b) Circulation in a bounded sphere

If consumers go shopping at a large supermarket or convenience store, even those within a local community, the money paid flows out of the local community and concentrates at the company's headquarters.

The local money put into savings and investment funds is transferred to a more profitable place, say, a metropolitan area where land rapidly appreciates. Such spillover of money has a negative impact on local economies, especially during a period of depression. CCs are designed to circulate within a certain local area without flowing out of it in order to promote internal transactions of goods and services and eliminate the shortage of effective demand caused by money hoarding. Increased circulation within a community induces local production for local consumption and regionalism.

c) No interest or negative interest

What does no interest on CCs mean? If you borrow money from a commercial bank, you have to repay the loan plus interest. But if you borrow money from your parents or friends, you pay no interest because you have their trust and affection. If you dare to pay interest, it might harm close relationships. Whether people lend money at interest indicates social distance between creditors and debtors. 'Negative interest' corresponds to the cost of holding money known as 'demurrage' and encourages the use, rather than the holding, of money to promote consumption. This idea was embodied in Stamp Scrips according to Silvio

Gesell's design. A famous American economist, Irving Fisher, introduced Stamp Scrips to the United States, and consequently the idea of demurrage spread during the interwar period. This is the noncapitalistic aspect of CCs.

These three aspects are the functional characteristics in view of economic aspect of CCs. When we focus on the social and cultural aspect of CCs, the view that CCs are tools for overcoming hardships in a severe depression and economic crisis are too narrow. In Japan, recent examples such as Fureai Kippu (Caring Relationship Tickets) and Eco-money assigns greater importance to CCs' linguistic aspect, which we will consider next.

d) Trust and cooperation

CCs circulate based on trust and cooperation among participants. Participants interact with each other through transactions, strengthen links of mutual aid and deepen their mutual trust. This is the community forming aspect of CCs.

Let us take the Local Exchange Trading System (LETS) as a representative example of an account-type CC, where the interest rate is zero and the summation of each participant's account balance is the net of credits and debits. In this system, the total debits and credits should sum to zero at any time. We can interpret the situation as follows: a participant borrows money from the community when the account balance is in the red, and lends money to the community when the balance is in the black; they call it square in the community. This zero-sum principle simply expresses the continuous accomplishment of mutual aid and solidarity among participants in the community and provides an institutional basis for deepening trust and cooperation.

e) Cooperative prosumers

'Prosumer' is a portmanteau combining 'producer' and 'consumer.' The term was coined by Alvin Toffler (1980) and characterizes the tendency of economic lives to become more self-sufficient or do-it-yourself in the third wave, the modern information age. 'Cooperative prosumers' are simultaneously producers and consumers and maintain cooperative relationships to mutually help each other and thereby effectively utilize the resources they own. This expresses the ideal of CCs that all participants should stand on equal footing as much as possible by eliminating asymmetry between consumers as money owners and producers as money seekers.

f) Linguistic expression and transmission

Each local community has intrinsic and individual characteristics in culture and nature. Such qualitative differences and diversity cannot be measured in a one-dimensional quantity of money. CCs are introduced and used as social and cultural media to express and transmit such individuality of local communities. There are many unique names of CCs to succinctly express such distinctive traits as specialty, dialect, geography, tradition, mythology and ideal of local

community. CCs thus function as linguistic media regarding local culture, interests and values.

3.8 The significance of CCs as the replicators for new species in socioeconomic evolution

CCs always have aspects of both economic media and social and cultural media, and such duality and complementarity of CCs is the most indispensable property that we cannot find in any other communication medium. So we cannot truly understand the significance of CCs by viewing them from only one aspect or the other. However, CCs usually differ in which aspect is stronger or more embodied in them. CCs further differ in purpose and locality. Whereas CCs evolved as new species from money and language, a diverse array of CC subspecies emerged. The micro behaviors and motivations of participants and the macro performance and patterns of communities composed of participants interact and change each other as time goes on. Such endogenously dynamic changes are considered to be path-dependent and nonrepetitive.

If macro environments are kept constant, or change exogenously and independently of the behavior of micro agents, it is possible to define the 'adaptability' of each micro agent under a given environment. Then the concept of 'survival of the fittest' can also be clearly defined in the sense that individual organisms with maximum adaptability can propagate most successfully. However, we cannot have a meaningful definition of the concept of adaptability if we deal with an evolutionary process where macro environments and micro agents mutually interact and their properties endogenously change. And we must remember that actual socioeconomies are certainly such evolutionary process with endogenous change and path dependence. Consequently, we cannot ask which institution of CC is the best or the most effective because such a question is meaningless in the evolutionary process.

3.9 How can we evaluate CCs for evolutionary perspectives?

Then how can we evaluate CCs from the viewpoint of evolution? Under the present macro environments of capitalistic market economies, CCs are incredibly weaker in terms of survival and propagation than existing national currencies such as the U.S. dollar and Japanese yen, and thus CCs cannot spread or even continue to exist. Even under the unfavorable conditions for CCs, there must be critical situations such as acute financial crises, chronic economic recessions and devastating natural disasters where CCs can transform their weaknesses into strengths. Clearly, CCs must, at the least, become safety nets and complementary institutions utilized as emergency measures in such exceptional situations. But they are only temporary, not constant.

The aim of CCs is to control the negative effects of money as capital (Luhmann's diabolic generalization) and restore the stability and sustainability of socioeconomic livelihood by intentionally restraining money's universal validity with respect to space-time circulation, transaction objects and

participants. Is such an ideal of CCs only a beautiful fantasy or a real possibility?

As we have already seen, the powers of survival and diffusion of CCs change depending on the situation. Their weaknesses can be transformed into strengths in a different situation. If so, how can a situation become different? As we have also explained, in an evolutionary process where macro environments and micro agents interact, they would change themselves endogenously. Social reality is found only in such evolutionary processes.

3.10 CCs act as a catalyst on the meso level to help a new micro-meso-macro loop set in

If CCs could somehow survive without being weeded out in such evolutionary environments, they would be able to gradually affect the interests, values, norms, ethics and routines that determine the behavior of participants as micro agents. The influences are initially very small and grow gradually, but once the accumulated effects exceed a certain threshold, some positive feedback mechanism sets in and everything might rapidly change. If CCs could thus act as a catalyst on the meso-level and help a new micro-meso-macro loop to be self-organized, then macro environments change micro agents and micro agents change macro environments and the dual directed interactions drastically and cumulatively change both environments and agents.

Metaphorically speaking, therefore, CCs are similar to slow-acting Eastern medicine for improving overall wellness (e.g., acupuncture), rather than fast-acting Western medicine for symptomatic treatment (e.g., medication). Continuing the metaphor, CCs, by inserting microscopic exogenous material into the immune system or the nervous system of the human body, produce subtle changes in the phases between order and chaos at the region boundary of a system and, consequently, activate each cell in order to vitalize the body system as a whole. We will explain this point more analytically from the viewpoint of evolutionist institutional design in the next section.

4. EVOLUTIONIST INSTITUTIONAL DESIGN

4.1 The Difference between Evolutionist Institutional Design and Other Ideas of Designs

We proposed evolutionist institutional design (EID) as an applied policy method in evolutionary economics a decade ago (Nishibe 2002, 2004). It is a different approach from conventional economics and focuses on evolution of social institutions. EID tries to show an original and effective answer to the difficult modern problems for which conventional approaches cannot easily find suitable solutions.

As Keynesian macroeconomic control policy lost its effectiveness in the 1970s and the communist bloc comprising Eastern Europe and the Soviet Union collapsed in the 1990s, overconfidence in human reason was defeated. Hayek's criticism of 'the fatal conceit' (Hayek, 1988) that

targeted at constructivism and scientism had dominant influences since then. After Hayek, on the one hand, too much emphasis had been placed on fallibilism of rationality, and, on the other, libertarianism had been widely trumpeted. As a result, design came to be viewed negatively until the end of 20th century.

However, biological phylogenetic evolution that generated human beings as social animals involves emergence of such artifacts as tools and machines that are designed by humans. Although the concept 'design' in itself might imply artificial planning and construction, it is fairly possible to introduce a new way of 'design' in order to implement socioeconomic policies based on the natural, complex and non-deterministic properties of evolution.

Here, we present evolutionist institutional design as such. Firstly, it is quite different from constructivist institutional design where central governments or planners from the outset construct and manage a whole economic system based on a comprehensive plan for achieving a desired outcome in terms of efficiency and equality in socialist central planning as well as mechanism design such as in market socialism or mechanism design. Secondly, it is also different from operationalist institutional design where central governments or planners directly control the resulting performance of a whole economic system by adjusting macroeconomic policymaking parameters in Keynesian 'fine-tuning' of effective demand.

In contrast to such conventional approaches, evolutionist institutional design (or media design) is where agents consciously attempt to redesign platform media that are basic external institutions in order to regulate the evolutionary socioeconomic system so that dual directional causality between internal institutions such as habits, conventions and value on the micro level and the boundary and performance of whole systems at the macro level can be induced to change. We would like to present evolutionist institutional design as a new idea and method for policy-making practices.

4.2 Socioeconomic Evolution: Replicators and Interactors

Here let us introduce several basic concepts and ideas in evolutionary economics so that we can use them to clarify the aims and significance of evolutionist institutional design. What are similarities and differences between biological evolution and socioeconomic evolution? Biological evolution in neo-Darwinism is conceived as a complex phenomenon involving the following three mechanisms: 1)

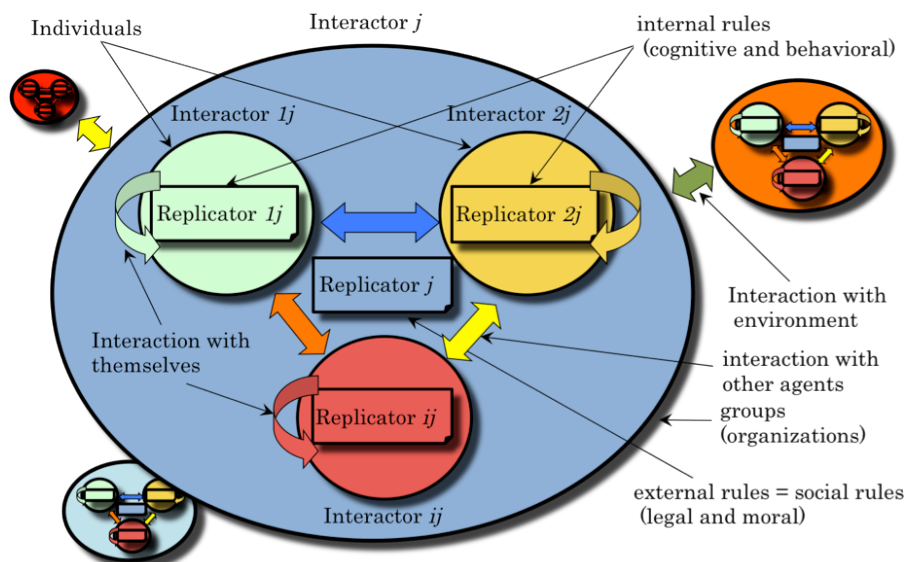


Fig. 2 Multilayered nested structures composed of replicators and interactors (Source: revised from Nishibe, et.al (eds.) (2010) p.80)

variance via mutation, 2) heredity and 3) natural selection. In the case of socioeconomic evolution, considering the peculiar ability of Homo sapiens to learn from and communicate with each other by using language and money, we need to make some important revisions to the aforementioned model of biological evolution, even if we have three similar mechanisms: 1) variance via natural and artificial mutation (innovation), 2) replication/transmission of knowledge/information and 3) natural and artificial selection (competition and cooperation). If we add 4) self-organization as another mechanism missing in neo-Darwinism in order to explain how order spontaneously emerges and grows, we now have four independent mechanisms of socioeconomic evolution.

Fig. 2 depicts an example of a multilayered nested structure. Three individuals (interactors 1j, 2j and ij symbolized by three small circles) with their own replicators as internal rules for cognition and behavior (replicators 1j, 2j and ij symbolized by three small rectangles in small circles, respectively) belong to an organization (interactor j symbolized by a large circle) with its own replicators (replicator j symbolized by a rectangle at the center of the large circle) as external rules for laws, norms and morals.

Evolutionary economics has two basic concepts: 'replicators' and 'interactors.' On the one hand, replicators in socioeconomic evolution that correspond to genes or DNA in biological evolution are institutions that consist of a bundle of if/then rules shared by a relatively large number of agents. Such institutions constituted as rules are classified from the viewpoint of agents into 'internal' (game strategies, frames of cognition, psychological biases and behavioral routines) and 'external' (game rules, laws, conventions, norms and morals). On the other hand, interactors—causal agents that correspond to organism and groups or populations in biological evolution—are individuals or groups of individuals who execute rules (act

according to both internal and external rules) and interact with themselves and others as well as external environments. Then we can visualize our socioeconomy as coexistence of a diverse array of rules and institutions that form mutually complementary and substitutive relations. We call such a dynamic system the 'institutional ecology' (Hashimoto & Nishibe 2012).

In most cases, replicators and interactors form multilayered nested structures. Whereas individuals are agents with their own replicators as internal institutions (rules), such groups of individuals as organizations (firms), markets, communities and states are also agents with their own replicators that are preferentially imposed as external institutions (rules) on individual members as long as they belong to those groups. If some individual members cannot fully accept all the rules of the belonging group, in other words, any of the internal rules of the individual members conflict with the external rules of the belonging group, they must leave or be kicked out of the group. For example, as long as individuals belong to any group of individuals, they must obey some necessary basic rules of the group. If any individuals cannot follow the rules, they cannot belong to the group. The relations of groups (for instance, firms) and upper levels of groups are similar. The number of hierarchical levels in the nested structures is logically infinite, but in reality there are usual only several.

4.3 Micro-Meso-Macro Loop

We now present a simpler model with three levels—the micro-meso-macro loop model—to describe dynamic characters of an evolutionary system as in Fig. 3. Symbolically generalized communication media such as language, law and money can be regarded as platform institutions (basic replicators) located on the meso level in Fig. 3. Individuals as interactors on the micro level have their own replicators composed of internal rules such as instincts, characters, habits, routines, motives and value. Such platform institutions as money, accounting, company and laws are regarded as basic replicators (rules) located on the meso level because, as outer institutions, they affect such inner institutions as common value, moral and consciousness shared by a certain number of micro agents on the meso level, and, on the other hand, determine such internal rules within micro agents as the routinized frames of cognition and habitual rules of decision/ action on the micro level so that agents can behave based on such frames and rules. In short, platform media as outer institutions on the meso level basically regulate how agents share their morals, values and beliefs on the meso level and behave and interact with one another on the micro level. Platform media mediate dual directional causal relations between socioeconomic performances and patterns on the macro level and behavior of agents based on internal rules on the micro level.

CCs are integrative communication media located on the meso level and mediate dual directional causal relations between socioeconomic performance and patterns on the

macro level and behavior of agents based on internal rules such as values motives and routines on the micro level.

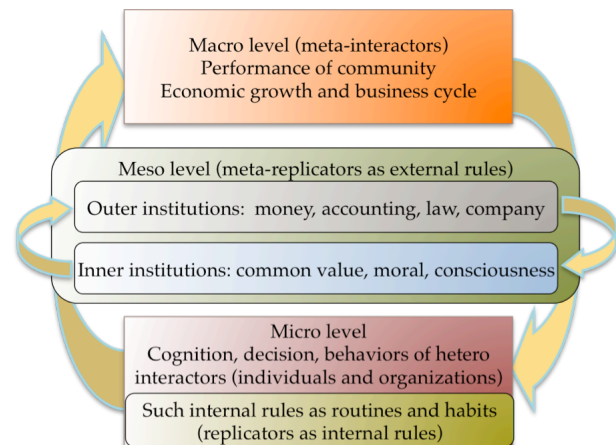


Fig. 3 Micro-Meso-Macro Loop
(Source: Nishibe & Kusago (2012))

5. CCS AS STRATEGIC PLATFORM MEDIA IN EVOLUTIONIST INSTITUTIONAL DESIGN

If we set new rules or revise some rules of CCs as platform institutions on the meso level, such a change would affect socioeconomic performance and patterns on the macro level because agents change their behavior in response to the change of external rules even though agents keep internal rules such as frames of cognition, motives and routines unchanged. Even though agents follow the same internal rules written as if/then statements, if any input conditions change in the conditional clause (if~) including any change in external rules, they might change their behavior as output in the main clause (then...) according to the change in the conditional clause.

But if any modification of external rules as platform institutions on the meso level changes internal rules such as values, motives and routines of agents on the micro level, they eventually have changed their 'ways of behaviors,' not 'behaviors as output' in the same internal rules.

For example, let us assume that you always behave as a utilitarian according to the rule of maximizing your utility, and if the criminal laws are amended to allow you to steal anything from others without penalty, you are supposed to start stealing things to maximize your utility, rather than to pay money to buy things. But if you were taught the moral standard that stealing is not right because it hurts others, and therefore refrain from stealing, you would ultimately give priority to the moral standard rather than the utility maximization rule and you would not behave as a utilitarian. This means that you would not change your behavior itself—you did not steal before or after amendment of the law; instead you change your internal rules, that is, your ways of determining how to behave.

After all, the change of external rules on the meso level can affect not only performance on the macro level but also internal rules on the micro level. Both constructivist and operationalist approaches of institutional design presume that such internal rules on the micro level are all fixed because such internal rules are given by optimality principles such as maximization of utility and profits. The constructivist approach, on the one hand, aims at constructing systems or structures on the macro level based on utilitarian behavioral principles imposed on agents on the micro level. The operationalist approach, on the other hand, makes macroeconomic models with several sectors and aims at social engineering to discretionally control such fluctuations and instability of the system, such as business cycles and inflation/deflation on the macro level.

However, different from those, the evolutionist approach thinks of internal rules on the micro level as variable, and tries to consider the effects both on performance and patterns overall at the macro level and on internal rules at the micro level; these effects arise simultaneously from changes in the policymaking regarding external rules embodied in platform institutions (e.g., media such as money) and from changes in accounting rules at the meso level.

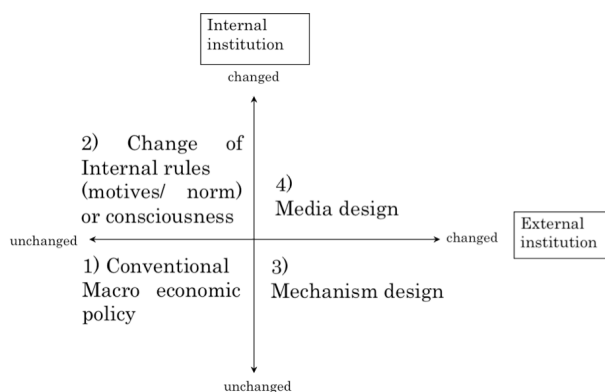


Fig. 4 Classification of four types of socioeconomic policies (Source: Nishibe (2010) p.249)

Fig. 4 classifies socioeconomic policies into four categories along two axes of changed/unchanged for internal or external institutions. Here, evolutionist institutional design corresponds to 4) 'media design' where both external and internal institutions are changed. In contrast, constructivist institutional design is understood as 3) 'mechanism design' in which only external rules are changed, and operationalist institutional design is depicted in 1) conventional macroeconomic monetary and fiscal policies where neither rule is changed. We can see 2) 'change of internal rules or consciousness' in ethical consumption, social investment and corporate social responsibility. These are all socioeconomic policies, but our focus is especially on 4) 'media design' based on evolutionist institutional design.

To make our socioeconomy more sustainable without the intolerable instability and turbulence of a financial capitalistic market economy, we can use media design as a policymaking tool to implement special districts, social experiments and local movements specifically in terms of money and credit as economic media on the meso level. But it is crucial to examine what set of rules of money and credit are better suited to accomplishing certain aims, for example, preventing excessive economic fluctuation and achieving socioeconomic stability by referring to modern experiments of various kinds of CCs.

Conventional national currencies are the platform institutions that determine the grand design (basic replicators) for the capitalistic market socioeconomy to evolve. In contrast, such currencies, CCs can be thought of as different kind of platform institution with different basic replicators that can gradually change both external and internal institutions of agents and can potentially evolve from a capitalistic market socioeconomy to noncapitalistic market economy. But even so, the reality is that CCs have only weak capabilities for survival and diffusion. We should thus examine in regard to media design what kinds of other external institutions can coexist with CCs or create a favorable environments for them in order to empower CCs.

6. STRATEGIC POLICYMAKING MODELS OF EVOLUTIONIST INSTITUTIONAL DESIGN: MEDIA DESIGN AND COMMUNITY DOCK

If we introduce CCs that possess the dual purposes and properties of both money and language, we can interpret it as revision of the replicators concerning external rules for money on the meso level. According to the aforementioned dynamic character of the micro-meso-macro level of the system, the introduction of CCs as platform media on the meso level affects both the performance and patterns on the macro level and the internal rules within agents on the micro level. In evolutionist institutional design, we need to consider both aspects at the same time, and implement media design of CCs so that they can improve the macro performance and become more viable from the perspective of business management. Furthermore, it would be desirable from the strategic viewpoint to recognize and evaluate the changes of participants' internal rule caused by the introduction of CCs, and make use of such feedback in order to improve the design of CCs that can induce further desirable changes.

Fig. 5 shows such strategic policy-making models for evolutionist institutional design. While media design is located on the upper level within evolutionist institutional design, community dock is located on the lower level. They form the nested structure of evolutionist institutional design.

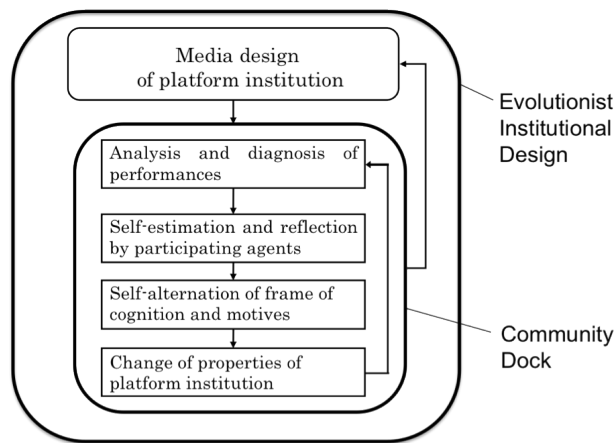


Fig. 5 The nested structure of media design with community dock (Source: Nishibe 2006a)

6.1 Media Design

When we use the term 'media design' in a broad sense as a synonym for evolutionist institutional design, it generally indicates a new idea and method of institutional design. So it concretely signifies policymaking methods (e.g., special districts, subsidies and reforms) in terms of media such as money, laws, accounting rules and sciences. But we can also use the word 'media design' in the narrow sense to indicate the process of design of any specific medium like CCs within the framework of evolutionist institutional design in Fig. 5. In this section, we will focus on the broad sense first and the narrow sense thereafter.

The constructivist institutional design known as 'mechanism design' considers internal rules within agents (consumers and producers) as fixed optimality principles (utility or profit maximization). In constructivist institutional design the market is understood to be the 'concentrated mechanism' precisely embodied in the 'price mechanism' in only an ideal sense and the market is evaluated accordingly in terms of efficiency of resource allocation and information transmission as well as incentive compatibility in order that the outsiders of the system can construct an optimal 'auction mechanism' based on the criteria.

In contrast to this, 'media design' conceives internal rules within agents as consisting of relatively simple routines, motives and values in order to provide satisfaction, not maximization, subject to realistic constraints such as irreversible time and bounded rationality of agents. Further, media design takes the market to be more realistically 'decentralized networks' of arm's length transactions for buying and selling mediated by money and accordingly evaluates the market in terms of reproduction, development and diversity of social and ecological systems, satisfaction of effective demand, and systemic stability and robustness of macro performance. Media design thus enables the participants of the system to design more desirable media as money, CCs, and the like. In other words, media design is not a phenotypic approach that attempts to directly construct (rather than design) the mechanism itself with de-

sired functions and properties, but rather a genotypic approach that designs media as institutions (replicators) that indirectly induce desired functions and properties which are manifested by themselves.

Let us now to take a closer look at the idea of institutional ecology to elaborate on the wider sense of media design. In the age of globalization, a commonly held notion is that money will move toward a single currency because of the effects of network externality in consideration of efficiency and convenience (Arthur, 1994). The dominance of the U.S. dollar as a key currency in the world economy is in many cases cited as an exemplification of the claim. However, the euro was created as a transnational currency to counter the U.S. dollar's dominance and the currencies of the BRIC countries have increased in value. In Japan, there are diverse currencies with specific properties and niches, such as national currency, corporate money (mileages and points), electronic money, local currencies and local coupons (gift certificates). Thus, a single dominant currency is not complete and the coexistence of various monetary institutions is currently observed just as institutional ecology suggests.

Monetary institutional ecology is an ecosystem where groups of monetary institutions and groups of users who strategically use multiple moneys co-evolve (Hashimoto & Nishibe 2012). Such modeling can better explain the stylized facts that globalization and localization of money simultaneously proceed and multiple species of money continue to coexist. And we cannot conclude that media design in term of multiple currencies including CCs will open a new field in socioeconomic policy until we can see the world from such a standpoint.

Under such a theory of applied policymaking, we do not necessarily have to recognize globalization and its problems as inevitable facts. Then we need neither to think that there are no other effective methods than to deregulate the market and open it to foreign countries, nor to patch over each problem temporarily by adjusting fiscal and monetary policies when financial crises and recessions occur. Instead, it would be wiser in the long run to conduct media design to encourage various CCs to emerge and to aim at building a sustainable and recycling-oriented socioeconomy from the perspective of reproduction rather than efficiency so as to improve modern socioeconomic constitution by redesigning platform institutions of money and credit. Next, we will focus on several examples using CCs for media design in the narrower sense.

Firstly, there have been many attempts to redesign the rules of CCs in order for them to be more sustainable. In the case of Eco-money, a Japanese CC that came into use in the late 1990s for only volunteer activities and mutual aid, there was a problem that currency circulation is hindered by such noncommercial transactions. If Eco-money could be used for commercial transaction for local shoppers as well as local firms, governments and nonprofit organizations, double circuits of CC driven by the complementarity of noncommercial and commercial transactions, wide cir-

ulation could be achieved more smoothly. In an experiment on a CC in Tomamae Town, Hokkaido, the velocity of the CC with the 'Double-Triangle Method' was found to reach 5.1 (first experiment, Oct. 2004 to Feb. 2005) and 3.5 (second experiment, Aug. 2005 to Jan. 2006) turnovers per year, which respectively correspond to about 6–7 and 4–5 times that of the legal tender at the time. These data support our claim that the CC of such a method can have significant economic effects in vitalizing local economies (Kichiji & Nishibe 2008).

Let us take another example of media design of CCs in which administration bodies attempt to change the properties of CCs by adjusting various parameters. During the 2000s in Japan, local coupons issued by local governments and chambers of commerce flourished. Many consumers were willing to purchase local coupons because they went for a premium between 2% and 10%, subsidized by local governments. At the time, the Japanese central government had created several special districts for CCs to deregulate laws that placed conditions on the issuance and circulation of such coupons. It also encouraged CCs to take the form of redeemable local coupons as in Tomamae Town's CC. In this case, media design mainly targeted how to adjust such parameters as the rates of premium, demurrage (negative interest) and redemption fee, in addition to the choice between note-type and account-type CCs. The higher the premium, the more willingly local consumers bought the CC. The higher the demurrage, the faster consumers spent the CCs, consuming instead of hoarding. The higher that of redemption fee, the more times consumers circulated CCs without redeeming them. Accordingly, it is effective to raise the rates of premium, demurrage and redemption in order to encourage supply, turnover and local circulation of CCs. If local governments issue CCs, they will have policymaking tools for adjusting the local money stock similar to the ones that a central bank has for a national money stock.

6.2 Community Dock

'Community dock' is designed as part of evolutionist institutional design for embodying a strategic and comprehensive method for integrating self-estimation of socioeconomic situations of the community and self-alternation of such internal rules as frames of cognition, motives, values and norms for participating agents of CCs. It was devised to be analogous to 'human dock,' which is a Japanese term that means a periodic complete medical checkup for early diagnosis and self-awareness of lifestyle problem, because lifestyle-related diseases are widely observed in many communities. Similar to human dock, community dock not only aims at accomplishing objective observation and data analysis of the present state, but also puts emphasis on participants' self-awareness, self-estimation and self-alternation (Nishibe 2006a, Nishibe & Kusago 2012).

Once policymakers or administrative agents establish external institutions of CCs in media design and participants conduct transactions using CCs, community dock will commence. It is composed of the following four processes: 1) analysis and diagnosis of current performance of the

socioeconomy of a community given data collected by third-party researchers and advisers, 2) self-estimation and reflection on the performance of the community and their own internal rules by participating agents, 3) self-alternation of frames of cognitions, motives, values and norms by participating agents, and 4) change of properties of CCs as platform media caused by alternation of internal institutions of participating agents.

The loop of community dock is encompassed by the whole processes of media design of CCs in Fig. 5. After sufficient numbers of repetitions of community dock with the same CC rules, policymakers or administrative agents might fine-tune or reform external CC rules based on accumulated experiences and updated diagnosis so that they can adapt the altered internal rules of participants and attain the initial goals more effectively. Media design in the narrow sense is thus situated on the upper level of community dock in the overall picture of evolutionist institutional design, that is, media design in the broad sense.

We conduct analysis and diagnosis in community dock by using both subjective data such as results of questionnaires, interviews and discussions and objective data such as details of transactions, turnover of money, and properties of the money circulation network among participants. While the economic effects of CCs can be ascertained from their turnover or network of circulation by using the data about each transaction (date, item, from, to), their social and cultural effects can be ascertained from the observed changes of participants' consciousness and values. For example, we conducted network analysis of CC circulation among agents and regions by using data filled in on the back of notes by participants in the Tomamae Town experiments (Nishibe 2005; Kichiji & Nishibe 2008).

Even though analysis and diagnosis are done by using objective data, whether such data can be obtained actually depends on whether participants are willing to provide them, that is to say it depends on participants' internal rules including frame of cognition, motives and values. It is thus significant to pay attention to the dynamic process created by implementing community dock. In evolutionist institutional design, the change of participants' internal institutions affects not only macro performance of platform media or external institutions but also its analysis and estimation. Its effectiveness thus depends on volunteer participation and the proactive attitude of agents. Community dock as a policymaking method is not top-down from policymakers, but rather bottom-up from participants.

The framework of evolutionary institutional design is thus established so that we can more deeply understand both theoretical and practical aspects of CCs from more realistic viewpoints of evolutionary economics. We believe that this framework can provide a more suitable method of self-management of CCs for their practitioners.

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International Journal of Community Currency Research

Volume 16 (2012) Section D 49-57

A COMPARISON IN TRANSACTION EFFICIENCY BETWEEN DISPERSIVE AND CONCENTRATED MONEY CREATION

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ABSTRACT

In this paper, we have compared concentrated creation of money with dispersive creation of money, and try to show, by using the results of computer simulation, the advantage of the method of dispersive money creation embodied into LETS in comparison with concentrated money creation. However, both ways of money creation have particular merits and demerits. We also estimate the effect of different rules for restricting the upper limits of debits of all participants in LETS on the rate of realized transactions in order to prevent free riding.

First, we give an overview of LETS. Second, we show, using a computer simulation, the advantage of the method of dispersive money creation compared to concentrated money creation. Finally, we have demonstrated the validity of the 'transaction indexation method' to set the rules of determining the upper limit of debits in LETS to avoid free riding and to enhance transaction efficiency.

ACKNOWLEDGEMENTS

We would like to thank two anonymous referees for their helpful comments.

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1. INTRODUCTION

The market is usually visualized as a 'concentrated' market with an auctioneer and tâtonnement (Walras 1874=1954, Arrow & Hahn 1971); however, the market where we really need the money as a means of exchange is not this kind but instead is a 'dispersive' market without such an auctioneer or an invisible hand. That is, it is a network of bilateral transactions, buying and selling, formed over a certain time. Most of the markets we face in daily life are surely of the 'dispersive' kind. Money matters in such a realistic market (Jones 1976, Kiyotani&Wright 1989, 1993, Matsui&Shimizu 2005).

The important function of money in such markets is decoupling: separating the buying from the selling of a commodity temporally or spatially as mutually independent processes. Thus, money holders can obtain the freedom to buy any commodity at any time and in any place or to keep on holding it without buying anything. Money thus establishes autonomy in the decision making of an economic agent. But 'Say's Law' which ensures equilibrium between supply and demand of all commodities does not hold in this situation; neither does the 'law of one price'

In a large-scale economy, all economic agents face bounds of rationality, so they have to decide the price and the quantity in such negotiated transactions as buying and selling, and then dispersively and sequentially execute transactions by using money for payment. They cannot start it over even though they may regret it later on. Accordingly, money is thought of as a communication medium (Luhmann 1984=1995, ch.4. sec.7-8) that reduces the complexity of external environments so that agents can make autonomous decisions and that conveys 'value' from a buyer to a seller. Money thus generates a dispersive market as a network of transactions (Nishibe 2006, Kichiji&Nishibe 2008).

Money usually reminds us of cash or banknote, but the main form of present money is deposit money based on bank credit. Banknote is monopolistically issued and controlled by central banks. We call such a method of banknote issue 'concentrated.' On the other hand, deposit money is created when banks make "loans." It is based on bank credit that is independently created by many private banks. Then we call such a method of creating deposit money 'dispersive'. We now have a classification of market and money creation (currency issue) as 'concentrated' and 'dispersive.' In a similar comparison, mutual credit clearing associations and LETS (Local Exchange Trading Systems) are thus classified as 'dispersive' money creation, and paper type of community currencies are classified as 'concentrated' money creation.

Money as an information medium can exist prior to its being a medium of exchange. The necessary condition of money is not its general acceptability as the means of circulation. Even if only a small number of people receive it as a stand-alone information medium or as a measure of value, we could call it "money". In this sense, each form of elec-

tronic money, shopping point, mileage, exchange coupon and community currency should be all called "money". We summarize the different types of money according to money creation or issue and other features in Table 1.

Community currencies (CC) have such features as i) negotiated transaction, ii) free negotiation of price and quantities, iii) relatively small sphere of circulation, iv) non-convertible or hard to convert into legal tender, v) freely issued and shared administrative costs by citizens, citizen groups or local government, vi) bearing zero or minus interest rate. i) and ii) are the features in common with legal tender observed in a large commercial sphere, and iii)-vi) are the general features of local currencies.

WIR (Wirtschaftsring) and concurrent currencies, however, are exempt from this classification. WIR-bank offers finance of WIR-money for registered SMEs at lower interest rates than normal loans. We find all features of CCs but vi) in WIR-money. On the other hand, concurrent currencies in a free banking system that Hayek (1976) proposed have common features of CCs but iv) and vi). So we locate WIR-money and concurrent currencies as intermediate configurations between legal tender and community currency.

In order to see the difference of circulation efficiency depending on the different types of money creation, we focus on comparing the two extremes, legal tender and community currency, in particular, banknotes and LETS, among these various moneys.

LETS stands for Local Exchange Trading System. This system represents one of the most popular account type CCs; it was initiated in 1983 by Michael Linton in Comox Valley, Vancouver Island, Canada. This is a mutual credit system based on dispersive money creation. Other than the account type, there are also paper money type CCs. Modern legal tender consists of cash and deposit money. Cash money is central banknote (as non-convertible paper money, or IOU) exclusively issued by central banks and subsidiary coin minted by governments. Deposit money is bank money created by the bank credit (credit creation) of private banks under the constraint of a reserve deposit rate.

CCs are classified into such paper money types as Ithaka Hours, based on concentrated money creation by an administrative committee and such account type as LETS, based on dispersive money creation by individual and group participants. Legal tender is also classified into concentrated money creation in the case of cash money and dispersive money creation by private banks in the case of deposit money. In reality, there is a big difference between community currencies and legal tender in view of their basic features; however, it cannot be denied that there is certainly an important similarity between them. The paper money type of CC is similar to cash money and the account type of CC, including LETS, is similar to deposit money in terms of methods of money creation.

Table 1: The compared characteristics of legal tender and community currency from the point of view of money creation

Type of Money	Banknote	Deposit Money	Concurrent Currencies	WIR money	Paper money type of CC (Ithaca Hours etc)	Account type of CC (LETS etc)
Issuer	Central banks	Commercial banks	Commercial banks	WIR-bank (Wirtschaftsring)	Administrative Committees	Participating individuals and groups
Circulation Sphere	Nationwide	Nationwide	Worldwide, Nationwide	Inter-SMEs	Territorial community; community of interest	Territorial community; community of interest
Type of Issue	Concentrated	Quasi-dispersive	Quasi-dispersive	Concentrated	Concentrated	Dispersive
User	National citizens	National citizens	Clients	Registered and non-registered SMEs	Community members	Participating individuals and groups
	Legal tender		Intermediate configuration		Community currency	

However, we are able to see a clear distinction between LETS and deposit money in table 1. In the case of LETS, issuers generally match users. On the other hand, in the case of deposit money issuers such as commercial banks don't match users such as national citizens. Thus we call such a method of creating deposit money 'quasi-dispersive'.

In this paper, we would like to compare concentrated creation of money and dispersive creation of money such as two extremes of legal tender and LETS in the view of money creation, and try to show, by using the results of computer simulation, the advantage of the method of dispersive money creation embodied into LETS in comparison with concentrated money creation. We also estimate the effect of different rules for restricting the upper limits of debits (negative balances or red ink) of all participants in LETS on the rate of realized transactions in order to prevent free riding.

First, we give an overview of LETS. Second, we show, using a computer simulation, that the ratio of realized transactions to attempted transactions under money stock constraints (budget constraints by money stock held) is determined by such factors as the ratio of agents initially holding money to agents holding no money, and the amount of initial money held per capita.

In more detail, when the distribution of the initial money held by each agent follows a uniform distribution, the amount of realized transactions increases with the initial money stocks held among all agents. Simulation results suggest that each agent has to hold an initial money stock of about 1.7 times as much as the average transaction amount per capita in order to realize all attempted transac-

tions. However, suppose the agents have no upper limit of deficit, in the case of mutual credit and dispersive money creation like LETS, the realized transaction ratio is 100% at all times, even if the initial money held is zero. Finally we show that LETS as a medium of exchange has superior transaction efficiency in terms of the ratio of realized transactions.

2. WHAT IS LETS?

LETS is one of the account type Community Currencies for whoever wants to use it. Transactions using LETS are recorded in each participant's account. Participants can buy and sell products and services from each other with specific terms of price and quantities on a peer-to-peer basis. LETS can only circulate within finite physical or virtual domains. If you have a positive deposit in your account, you will not gain any interest from your savings. If you have no money and you want to buy something, you still can buy it by going below zero in your account by creating money units. The money in LETS can be created by individuals without any limit or with a certain upper limit according to the rules of each LETS. This is completely different from conventional money issued based on the value of commodity as money or the authoritative power of governments as issuers. LETS has properties similar to those found both in money and credit. It is money in the sense that it can function like conventional national currencies, as a means of circulation to mediate exchange, as a measure of value to provide the standard for exchange, and as a means of hoarding to store value.

In the case of a transaction of 1000 dollars, the account of a seller is recorded plus 1000 dollars and the account of a

buyer is recorded minus 1000 dollars. LETS adopts an accounting system that credits black to a seller and debits red to a buyer on each transaction, so that the sum of all participants' accounts constantly equals zero. Because of the zero sum principle, money exists only in the accounts with credit as black at the micro level, but does not exist in the association as a whole at the macro level. Besides, the accounts (both black and red) bear no interest.

As for the paper money type CC, an administrative committee has the exclusive right to issue CCs. Therefore, participants have to hold more CCs than the total amount of payment to buy some goods or services in the same way as when using cash money. In contrast, each participant of LETS has the right to create money freely so that he/she can buy goods or services even if his/her account balance is zero or negative. This is the advantage of LETS. Current money creation (cash money and deposit money) is synonymous with issuing an IOU. Conventionally, a buyer has to pay pre-existing money stock to a seller in order to purchase goods and services. If the seller is willing to accept credit from the buyer, the buyer incurs a debt to the seller. The debt is generated on the side of the payer. When the central bank issues central banknotes, it gives a certificate of indebtedness stating that I (the central bank) owe you (a recipient). Thus legal tender is called an IOU.

However a buyer is not directly in debt to a seller in LETS. Rather, the buyer is thought to be in debt to the community, composed of all the participants in the LETS. The buyer should have an ethical responsibility to repay the debt to the LETS community. In such systems as LETS, debts and credits do not bilaterally but multilaterally balance out. That is to say, LETS do not adopt bilateral netting but multilateral netting. Then we call this kind of money as in LETS, not an IOU but an IOC, which signifies "I owe Community".

Under these circumstances, the larger the community of LETS becomes in terms of the number of participants, the more the degree of anonymity will increase and the harder it will be to maintain trust among the participants in it. Then there is some potential risk of moral hazards that, if there is no limit to the maximum amount of debit, some participants are apt to expand their debt as much as possible and create too large an amount of money to repay. We call them 'free-riders'. Thus the size of a sphere of circulation of an "IOC" depends on the extent to which each participant can have an ethical responsibility to the community smaller than that of an "IOU". Thus each LETS should set up its own rules in order to constrain the volume of money that each participant can create and prevent free riders from being parasites on the community. This rule should clarify how to determine a certain upper limit of debit for each participant. It may vary, and the simplest rule is that the upper limit may be fixed to a uniform amount. There is also a rule which sets the upper limit determined as a linear function of a participant's total volume of transactions during a certain period. The merit of "IOC" is that unrealized transactions caused by money con-

straints can be reduced or eliminated, even if a buyer has no currency stock to pay to a seller.

Accounts in LETS bear no interest, so participants have no incentives to be in the black or to avoid being in the red. LETS is interest-free and issued freely by participants, and then since there is no such thing as transactions motives, precautionary motives and speculative motives for holding money that originated from 'The General Theory' written by John Maynard Keynes in 1936. Therefore, there is no demand for money depending on liquidity preference, so such real demand as consumption and investment demand should be encouraged. As a result, speculative financial transactions apart from real demand or self-propagation of capital for accumulation are hard to generate in LETS. This is quite a big difference between current legal tender bearing positive interest and LETS, and it is another merit of LETS.

3. ACCEPTANCE AND MARKET AREA

Money with higher acceptability circulates in a wider sphere. The reason why money is accepted by people varies with each type of money. In the past, the acceptability of convertible paper currency was ensured by convertibility into gold coin or bullion. The acceptability of present inconvertible money is self-sustained by people's expectation of the maintenance of its future acceptability and people's belief in the continuance of its past acceptability, and it is finally secured by (1) the financial solvency of central banks and the financial policy for stable money value, and (2) mandatory circulating power by cabinet order or government decree so that it should keep circulating in a nation-wide area.

In contrast with this, the acceptability of LETS based on mutual credit is ensured neither by convertibility into any good nor mandatory circulating power, but by mutual trust that other participants would accept the currency of LETS as long as they belong to the community or confidence in the continuance of the community itself. At present, it circulates in a relatively small sphere, but the communities vary in value and interest, and their numbers are large.

In order to maintain the acceptability of any type of money, including legal tender, community currencies, and so on, it is indispensable for issuers not to invoke the moral hazard of excessive money creation. If a central bank and a government are unified, the seigniorage is vested in the government by way of the central bank. In this case, the government tends to insist that the central bank should buy deficit-covering government bonds for financing the budget deficit. As a result, the central bank is apt to be exposed to strong pressure from the government to issue excessive money. However since excessive money creation causes the side effect of destabilizing money's value, leading to inflation, the central bank has to resist pressure to create excessive money and, in order to do so, needs independence from the government.

Table 2: The compared characteristics of legal tender and community currency

	Acceptability	Availability	Moral hazard	Countermeasures against moral hazard	Circulation sphere
Legal tender	High	General	Government banks	Laws, acts, fines, punishments	worldwide, nationwide
Community currency	Low	Specific	Administrative committee, participants	Ethics, norms, reputation, expulsion	Local area, community

Because the right of issuing money belongs to the participants in LETS, there is the danger of a debtor issuing excessive money and never trying to repay and escaping from the community. Such an individual would eventually ruin the trust of creditors in the community and encourage unfair treatment of participants so that the participants might dislike it and withdraw from the community. Such a problem could knock the bottom out of a mutual credit system in the community. In the case of paper money type of CC, excessive money creation by an administrative committee reduces its money value, so that it would blemish the participants' trust in the money and the community. As shown above, there is a possibility that both CCs and legal tender could invoke moral hazard, but the method of preventing it should vary for different types of money. For legal tender, rigid government rules or laws prescribing fines and punishments are supposed to regulate moral hazard. In CCs, such inner disciplines as ethics and norms, and such outer disciplines as rumor/ reputation and expulsion/ ostracism are expected to softly control any moral hazard. The different ways of preventing moral hazard makes a difference in their circulation spheres. Anonymity in legal tender is high, but participants in CCs make much of face-to-face relationships. We summarize the different characteristics of legal tender and community currency in Table 2.

4. A COMPARISON OF LEGAL TENDER AND LETS AS MEANS OF PAYMENT USING RANDOM NETWORK SIMULATION

In this section, we draw a comparison between legal tender and LETS from the point of view of the transaction efficiency of means of payment. Legal tender plays two roles, both as a means of exchange and as a means of payment. Settlements of transactions are made in two ways. In the first phase, the settlements between debits and credits are made between individuals by private banks and, in the second phase, between private banks by a central bank.

Private banks and the central bank can settle the accounts with less money than the total amount of transactions by using netting. But the settlement using legal tender needs money (cash or reserves) in advance. Due to the lack of money stock in advance, we often cannot make the necessary transactions. In comparison with legal tender, accounts of LETS ideally have no constraint to create money, and thus participants can realize all the necessary transactions because they equally have the right to freely issue money. Next, we investigate, by using computer simulations, the ratios of the realized transactions to the attempted ones using legal tender¹.

We study the transaction efficiency of legal tender as the means of payment using random network simulation in a simple model. Firstly, we would like to confirm the technical terms of network theory. A network is a series of points interconnected with lines. The points and lines are called 'nodes' and 'links,' respectively. We assume the firms or individuals in transactions act as nodes and the transactions between firms or individuals act as links.

In the simulation, we select a buyer and a seller at random from K nodes every period and then the buyer pays the money for a good or service of the seller. We model a T period setting, where T is the number of total transactions. We assume, for simplicity, that the volume of all transactions is set at 1 and the price of the goods or service is set at 1. Time is represented by t . However, if the selected buyer has no money, the transaction cannot be realized. In this case, we select a new pair of buyer and seller randomly until they can settle. We call the number of selected transactions 'the number of attempted transactions' and the number of settled transactions 'the number of realized transactions,' respectively. We also define 'the ratio of realized transactions' as the ratio of the number of realized transactions to that of attempted transactions.

¹ In this article, we don't mention "demurrage". If we introduce the idea of "demurrage" into our simulation, the results don't change in LETS. In the case of legal tender, the rate of realized transaction goes down by introducing "demurrage". Since the purpose of introducing "demurrage" is to enhance the velocity of money and expand the volume of transaction, this is different from our purpose in this article. We would like to focus on the transaction efficiency. Introducing "demurrage" into LETS needs attention. We put "demurrage" on both debit and credit in the simulation. In the case of no upper limit of debit and credit, even though the volumes of debit or credit decrease by "demurrage", the rate of realized transaction is constant because of freely issued money by participants in LETS. On the other hand, when we regulate only the upper limit of debit, the participants who have debits are likely to commit moral hazard by depreciating both debit and credit.

Table 3: Distribution of initial money holders and rate of realized transactions (the aggregate money stock is constant)

Ratio of initial money holders	100%	50%	25%	10%
Aggregate money stock	100	100	100	100
Initial per capita money stock	1	2	4	10
Number of attempted transactions	1000	1000	1000	1000
Number of realised transactions	550.9	518.6	472.7	335.2
Ratio of realised transactions	55.1%	51.9%	47.3%	33.5%

We performed simulations with a random network model of 100 agents (nodes) by varying the uniform distribution of initial money holders who possess the same amount of money. If all agents have 1 unit of money in the initial condition, the aggregate money stock amounts 100. We define 'the ratio of initial money holders' as 'the ratio of the number of initial money holders to that of all agents.' The ratio of initial money holders represents how equally money is distributed among all agents in the initial condition. If the ratio is 100%, the money distribution is completely equal and as the ratio approaches 0%, the distribution becomes most unequal.

We examine the changes in the ratio of realized transactions by decreasing the ratio of initial money holders gradually from 100% to 50%, 25% and 10%. In the simulation, when we keep the aggregate money stock at 100, the initial per capita money stock increases from 1 to 2, 4 and 10. We repeat the simulation 100 times so that we can obtain the ensemble average. Table 3 shows the average results.

According to Table 3, as the ratio of initial money holders decreases, the ratio of realized transactions decreases. We thus find that the distribution of the initial money holders strongly influences the realization of attempted transactions.

Next, we examine the effects of the changes of aggregate money stock on the ratio of realized transactions keeping the per capita initial money stock constant as 1. In the simulation, as the aggregate money stock decreases from 100 to 50, 25 and 10, the ratio of initial money holders decreases gradually from 100% to 50%, 25% and 10%. We repeat the simulation 100 times so that we can obtain the ensemble averages. Table 4 shows the average results. Keeping the per capita initial money stock at 1, as the ratio of initial money holders decreases, the ratio of realized transactions decreases sharply.

According to Table 4, the average results are influenced by both the inequality of the initial distributions and the decreasing aggregate money stock. The results show that the ratio of realized transactions decreases as the ratio of initial money holders decreases.

Finally, we estimate the amount of the initial per capita money stock required to realize all the attempted transactions.

In order to keep the number of per capita attempted transactions constant as 10, although the number of total participants increases from 100 to 250, 500 and 1000, we need to increase the number of attempted transactions from 1000 to 2500, 5000 and 10000 in the simulation. We show the results in table 5. In the case of 100 participants,

Table 4: Distribution of initial money holders and ratio of realized transactions (initial per capita money stock is constant)

Ratio of initial money holders	100%	50%	25%	10%
Aggregate money stock	100	50	25	10
Initial per capita money stock	1	1	1	1
Number of attempted transactions	1000	1000	1000	1000
Number of realised transactions	550.9	358.1	206.0	92.5
Ratio of realised transactions	55.1%	35.8%	20.6%	9.3%

Table 5: Number of total participants and initial per capita money stock required to realize all attempted transactions²

Number of participants	100	250	500	1000
Ratio of initial money holders	100	100	100	100
Number of attempted transactions	1000	2500	5000	10000
Number of realised transactions	550.9	358.1	206.0	92.5
Ratio of realised transactions	100%	100%	100%	100%
The initial per capita money stock required to realize all attempted transactions	15	16	17	17

to realize all the attempted transactions, each agent has to hold 15 units of money stock in advance. As the number of total participants increases, the initial per capita money stock increases to realize all the attempted transactions. However, its rate of increase gradually diminishes towards 0 as the number of total participants increases to 1000. As a result, the initial per capita money stock required to realize all transactions is saturated around 17 units of money on the condition that the number of per capita attempted transactions is 10. This result shows that each agent has to hold 17 times the money stock in advance as each transaction value, or 1.7 times the money stock in advance as the total per capita attempted transactions. In normal transactions using legal tender, agents have a great amount of money buffer to fulfill all necessary transactions. The initial per capita money stock required to realize all transactions increases, but the rate of increase of it diminishes as the number of per capita attempted transactions increases.

Table 6 is created by taking the first column of Table 4 in order to show the comparison between legal tender and LETS in terms of the ratio of realized transactions. The total number of participants is 100 people, and the number of attempted transactions is 1000 times. The initial per capita money stock is 1. In LETS, the ratio of realized transactions is always 100% if there is no rule to restrict upper limits of debits of accounts so that there can be no constraints of money to hinder all attempted transactions from being realized. According to the table, it is 1.81 times as high as that (55.1%) using legal tender. We can now understand that a certain amount of money buffer in advance is necessary for the dispersive market to function smoothly with a 100% ratio of realized transactions. But such a high ratio of realized transactions is almost impossible in the case of legal tender because the reality is that a non-uniform and

uneven distribution of initial money holders makes the ratio of realized transactions lower, and that a shortage of effective demand in consumption and investment in a period of depression, which is intrinsic in the dispersive market, reduce it, though the increases of per capita money stock in hoarding or saving is supposed to have the effect of increasing it according to the discussion above.

Table 6: The comparison of the ratios of realized transactions between legal tender and LETS

Type of money	Legal tender	LETS
Ratio of realised transactions	55.1%	100%

We can see from Table 3 through Table 6 that LETS need much less of a money buffer than legal tender. LETS thus exhibits high transaction efficiency. On the other hand, however, because every participant has the right to freely issue money, there are naturally some who might not be able to resist the temptation to create excessive money or even others who might be ill-intentioned to do so from the outset. Such risk of moral hazard invoked by a part of participants restricts the circulation sphere to a relatively small area.

It should be noted, however, that, even though such free riders in the community should be ethically criticized, it does not really cause devastating damage to LETS as a monetary system because participants cannot tell the

money created by free riders from other ordinary money. Accordingly, such money, which becomes shared by all participants, can circulate exactly in the same manner as other money in LETS.

Nevertheless, administrators of LETS would be well-advised to set a certain rule to restrict upper limits of debits (negative balance) to prevent such side effects caused by such moral hazard as loss of confidence in LETS and the community, expansion of a feeling of unfairness and the withdrawal of participants².

5. THE NECESSITY OF DESIGNING THE RULES TO RESTRICT THE UPPER LIMIT OF DEBIT OF AN ACCOUNT FOR EACH PARTICIPANT IN LETS

The simplest rule to restrict the upper limit of debit in LETS is to fix it to some constant value. For instance, the limit could be completely fixed as, say, minus 100 green dollars for every participant all the time³. But this merely wastes the merit of LETS since it is not so much different from the case of uniform distribution of initial money stock for legal tender discussed in the last section, except for the ways of money creation. There are other such rules that effectively utilize the advantages of LETS so that it can increase the rate of realized transactions such as: 1) the step-by-step alteration method and 2) the continuous alteration method. The step-by-step alteration method alters the upper limit of debits depending on the duration of membership or the distinction between provisional membership

and full membership. An example is to set minus 100 green dollars for a provisional membership of less than a year and minus 200 green dollars for a full membership. Such a method is realistic and easy to adopt, but too approximate to make the most of the merits of LETS. Then it would be desirable to design and adopt more sophisticated rules to determine the upper limit of debits as long as it is practicable, so that it can utilize the data that administrators are supposed to possess and estimate the difference of each participant in their past performance and activate total transactions as much as possible.

Now we will explain the ‘transaction indexation method’ as such a possible method. The upper limit of debit of an account is calculated according to the following linear equation where R: is the upper limit of debit, z: is the aggregate transactions of a participant, a: is the variable factor of the upper limit of debt, and b: is a constant factor.

$$R = - a*z - b \quad (1)$$

Let us here observe how the ratio of realized transactions changes as only the parameter b is altered with the parameter a held constant and compare two cases (a = 0.2 and a =0.05) on the condition that the total number of participants is 100 and the number of attempted transactions is 1000, that is, the number of per capita attempted transactions is 10. Table 7 and Table 8 show the results of the two cases as the ensemble average of 100 times experimentations.

Table 7: The ratio of realized transactions and alteration of parameter b (a = 0.05)

Parameter b	1	2	5	10	15
Number of realised transactions	747.41	853.17	967.47	998.88	999.98
Ratio of realised transactions	74.7%	85.3%	96.7%	99.9%	100.0%

Table 8: The ratio of realized transactions and alteration of parameter b (a = 0.2)

Parameter b	1	2	5	10	15
Number of realised transactions	750.88	853.86	981.06	999.46	1000
Ratio of realised transactions	75.1%	85.4%	98.1%	99.9%	100.0%

2 In the following section, we argue the rules that regulate the upper limit of debit. In case of random matching simulations as in the present section, if we regulate the upper limit of credit, the results obtained will almost show no difference. But in the actual non-random transaction, there is the possibility that some participants will commit moral hazard of holding enormous debit balances. That is why we consider the upper limit of debit. But the big debit itself will not necessarily cause systemic breakdown if it is treated as credit creation when the enormous credit is transferred to the common account. Furthermore, we don’t think that the enormous credit balance of some participants must be the fatal factor for maintaining LETS.

3 There may be an opinion that regulating the upper limit of debit in LETS to fix it to some constant doesn’t violate principle of social equality. On the other hand, altering the upper limit of debit depending on the duration of membership or volume of total transaction violates it. However, in the case of altering the upper limit of debit, equality of opportunity is present in the sense that the upper limit is all the same to participants at the start point and they express approve of the rules even if equality is not present.

First, we take a look at the first columns of Table 7 ($a = 0.05$, $b = 1$) and that of Table 8 ($a = 0.2$, $b = 1$) in order to compare these with the results in Table 6. It is conceivable that the case for legal tender can be now interpreted as the case of the equation (1) with $a = 0$, $b = 1$. To set the parameter a at some positive value instead of zero in the 'transaction indexation method' can drastically increase the ratio of realized transactions from about 55% to about 75%. The increase of the parameter a from $a = 0.05$ as in Table 7 to $a = 0.2$ as in Table 8 only makes a small increase (0.4%) in the ratio of realized transactions. These results show that the 'transaction indexation method' that prevents moral hazard as to the excessive creation of money can remarkably enhance the ratio of realized transactions with a relatively small parameter a as long as it is positive. The initial per capita money stock required to realize all transactions can also be reduced to around 10 from 17 for legal tender. This case study exemplifies that such institutional design of rules is essential for community currencies including LETS to function well enough to attain their original goal.

6. CONCLUSION

In this article, we have examined and compared the characteristics of dispersive and concentrated money creation observable both in community currencies and legal tender, rather than just having contrasted community currencies and legal tender. Both ways of money creation have particular merits and demerits. Concentrated money creation causes the problem of restricting transactions by the need for money stock in advance, and it requires a larger money buffer to realize transactions smoothly. Concentration of money creation can prevent free riding and have a broad sphere of circulation, and it creates maneuverability for the monetary policy of a central bank. At the same time, its arbitrariness might lead to a great danger of excessive money creation. On the other hand, dispersive money creation without any constraint exhibits transaction efficiency as in LETS with no upper limit of debit, but it can bring about the moral hazard of free riding taken by some participants. Finally, we have demonstrated the validity of the 'transaction indexation method' to set the rules of determining the upper limit of debits in LETS to avoid free riding and to enhance transaction efficiency. We simultaneously presented the possibility of the institutional design of money by this exemplification.

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International Journal of Community Currency Research

Volume 16 (2012) Section D 58-69

DOES DEMURRAGE MATTER FOR COMPLEMENTARY CURRENCIES?

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ABSTRACT

Currency with demurrage is a theoretical concept for a reform of the monopolistic issued state money originated by Silvio Gesell. Until now it has never been implemented the way it was originally intended. Based on the theory of Irving Fisher and the practical experiences during the Great Depression a demurrage-based CC could be helpful as a temporary steering instrument during economic depressions to stimulate economic activity by increasing the velocity of money (of CC and indirectly of conventional money), probably only if issued state-wide. The level of the demurrage-rate of the local issued depreciated money seems to be (based on the available data) not crucial for the economic results within the meaning of usage, turnover and velocity.

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INTRODUCTION

“Demurrage” (defined as built-in reduction over time in the intrinsic value of a currency) is a remarkable feature of complementary private currencies since the Great Depression. The idea of “rusting” money with a built-in depreciation is based on the “free money” theories of the German monetary reformer Silvio Gesell. Although the concept was developed as a monetary reform for the state-issued (monopolistic) currency, self-help initiatives took over the idea for local currencies during the Great Depression in Germany, Austria, Switzerland, USA and Canada. Most of these demurrage-initiatives were based on cash, scrip notes with stamps to be affixed (“stamp scrip”). In Europe most of the pilot projects were prematurely stopped by legal actions of the monetary authorities. However, the demurrage-based and other local money initiatives in the USA were not hindered by serious legal constraints. The era of Depression Scrip in the USA was an interesting experimental field of different concepts for local money. Some of them were very successful, others failed shortly after start.

After 70 years we see a renaissance of demurrage within complementary currencies not surprisingly again in Germanic countries. Many of the so-called Regiogeld-experiments are in some way based on demurrage. But even some local money initiatives in France and the UK picked up the demurrage idea (eg. Abeille and Stroud Pound). So again we have to consider the theoretical and practical validity of the reasons behind demurrage. Is demurrage an essential feature of a complementary currency to ensure the optimal circulation and to prevent hoarding?

DEFINITION

“Demurrage” in the context of Complementary Currencies (CC) is meanwhile a current expression for the built-in pre-programmed depreciation of the nominal value of a currency. The depreciation process should be durable in time, like a negative (not compound!) interest. Usually the depreciation rate is a fixed amount as a percentage of the original nominal value, e.g. 1% per month. It is set by the issuer as a revenue (if the money is issued by a certain institution) and should be immediately assigned to the holder of the money. The depreciation is to the detriment of the money-holder for the whole time of holding the money or at the date of depreciation, if there is no continuous depreciation (intervals without depreciation).

CONVERSION

The depreciation should be – as ideal solution - a continuous process on a daily (or even shorter) basis like interest on a savings account, which is feasible in case of scriptural money (book money; bank money, deposits) or digital money stored on an electronic device (e-money).

In case of other traditional means of payment, like coins or paper money it is more difficult to implement an efficient depreciation. The issuer of coins could use a built-in chemical process which decomposes the metal or other material

like iron which will be rusted by the end of the issuance period. It must be difficult and it has never practiced in the past. However, with paper money it is much easier to implement depreciation. The issuer could print a time table on the backside of the note with the dates of depreciation of the nominal value. This way every user (payer and payee) can check the value of the note at the moment of usage for payments. This kind of “table money” is not very convenient, because the payer and payee have to solve the problem of change. They need a different medium of payment with lower value denominations, based on the incremental amount of the depreciation rate. Within a CC environment this problem was usually solved by using the small-value coins of the state-issued money. The table money concept is based on an ongoing depreciation of the nominal value of the note.



Figure 1: Table money “Tauscher” (issued in Germany 1931)

The most common way to implement the depreciation was “stamp scrip”. The nominal value remains constant only if the holder has to pay a ‘liquidity fee’ related to the depreciation dates. The holder could restore the nominal value of the note by affixing little stamps on squares which are corresponding with the periodical depreciation dates, printed on the backside of the note. The holder of the note has to buy the stamp (from the issuer or his agency), of which the value was exactly the depreciation rate. Within the intervals the holder of money was not charged and he could use the note at par value. Without paying the fee, the nominal value of the note was depreciated at the rate of the value of the missing stamp(s). The only differences between the two concepts are the fee revenue stream to the issuer and the possibility to restore the nominal value in case of stamp scrip. This so-called time-based stamp scrip is practised since the private currencies of the Great Depression until today by several CC-issuers in the Germanic countries (“Regiogeld”) and recently also by issuers in France and the UK. The liquidity fee is usually not paid by CC but with the state currency, so the CC-money supply remains unchanged and the issuer uses the fee income to cover the costs of the system. Within a nation-wide monetary system based on stamp scrip, the issuer (monetary authority or central bank) should prevent the shrinking of the money supply by permanently issuing fresh money in value of the fee income, like Gesell suggested in his Free Money system.

Some observers (like Rösl, 2006) are including scrip with a limited period of validity (e.g. one year) - combined with a remarkable discount if the user wants to redeem the note to the central bank money - within the concept of demurrage-based CC (Cf. Rösl 2006:9). Today a lot of private currencies have this mechanism and even in medieval German-speaking areas a state-issued monetary scheme was based on this concept ("bracteates"). The reasons behind this concept of "expiry money" and practical effects could be the same as depreciative currencies (preventing hoarding, increase of velocity), but there is no pre-programmed ongoing depreciation declared to the users, even if the possibility of redemption at the expiry date would be lacking. Only within a theoretical case of full transparency to the users of these notes the market will anticipate the not-communicated depreciation rate during the period of validity of the note. Without this condition the notes could (and would probably) be used at par value until the expiry date and only the last remaining unlucky holder may have the financial loss. Therefore this kind of money is not considered within the context of demurrage-based CC of this paper.

SYNONYMS

Besides the temporary expression "demurrage-based" money many other expressions are used to label this special kind of money: Free Money (Gesell), rusting money (Gesell), shrinking or shrinkage money (Gesell), melting money, disappearing money, stamped money or stamp scrip, cost-bearing money (Suhr), neutral money (Suhr) and anti-capitalistic money (Gesell). Gesell did not coin the term "demurrage", as often as it is disseminated by CC-researchers. The depreciation rate is also named negative interest, carrying costs (Keynes), ambulatory tax (Fisher) or demurrage fee. Within the concepts mentioned above there are slight differences, the quintessence is the same: pre-programmed, built-in and periodical depreciation during the circulation time.

Although the expression "demurrage" (or "demourage") and "demurrage fee" is now common within the CC-context, it is not exactly covering the principle as described above. The term "demurrage" is used in the transport industry, especially commercial shipping, for the time a transport equipment in excess of the contracted laytime (to load or unload cargo) is used. A demurrage fee (usually paid per hour) has to be paid as a penalty fee for the extended period. The intention of demurrage-based money is similar; a penalty fee for the laytime by not using money for payment transactions by hoarding money. But the mechanism is different. The demurrage fee within the transport industry will not be levied within the contracted period of laytime ("hoarding") and can therefore be evaded. Within the monetary circulation the fee is from a theoretical perspective levied anyway to all users as continuous revenue stream to the issuer, theoretically only evaded by an immediately passing on to the next user (infinite velocity).

THEORETICAL BACKGROUND

The German monetary and social reformer Silvio Gesell (1862-1930) was the first person who proposed the idea of a monetary concept (Free-Money) based on a built-in depreciation and also made a practical suggestion for implementation. The German economist N. Johannsen analysed the negative effects of savings activity within an economy during crises and proposed - like Gesell - a built-in depreciative currency (as table money) too, but he published his depression theory a few years later in 1903 under the pseudonyme J.J.O. Lahn (in Germany and in the USA). In 1913 he proposed his currency reform named "Marktaler" as table money. (Cf. Lahn 1903a/1903b and Johannsen 1913. See also Suhr 1989:100). The principle of a hoarding fee for money was practised before Gesell but without transmitted concept. The giro system in Ptolemaic Egypt (322 - 30 BC) was probably the first demurrage-based monetary system backed by grain storage. The depositors could transfer their claims of grain without using the grain directly as medium of exchange. To compensate the natural loss of the grain in the storehouse (mould & mice), the holder had to pay a storage fee (Godschalk 1986:64). Within a context of money, backed by goods with a natural intrinsic depreciation rate over time, demurrage is a logical consequence, a theoretical concept is superfluous. If money is backed by stable and durable goods like gold (as the case Gesell started 1891 his first reflections about shrinkage money) there is no systemic need anymore for the money supplier to levy a depreciation fee on the outstanding money. "The purpose of Free-Money is to break the unfair privilege enjoyed by money. This unfair privilege is solely due to the fact that the traditional form of money has one immense advantage over all other goods, namely that it is indestructible." (Gesell 1958:273). "Only money that goes out of date like a newspaper, rots like potatoes, rusts like iron, evaporates like ether, is capable of standing the test as an instrument for the exchange of potatoes, newspapers, iron and ether." (Gesell 1958:269). But even in case of monetary system based on fiat money - as today - money does have per definition a superiority compared to goods, based on his intrinsic liquidity attribute, created by social agreement of all its users or by coercion of the state (legal tender). Only assets with a certain liquidity can be money (economists would say "money is what money does"). Keynes stressed later this liquidity-premium of money in his General Theory as basic point of his interest theory (Cf. Keynes 1936: 225-244). If money should play a neutral role as facilitator of economic exchange processes of supply and demand of goods the liquidity benefits of its holder should be equalised by a durable depreciation rate or liquidity fee (like Gesell suggested) or goods should have the same degree of liquidity as money (jumping-off point of Proudhon's concept of exchange banks). Therefore Keynes supported the idea of carrying costs of Gesell explicitly ("the idea behind stamped money is sound" (Keynes 1936: 357)), although he criticized "many difficulties which Gesell did not face" (Keynes 1936: 358) (e.g. the rise of money substitutes (near money) with a lower liquidity-premium than the stamped currency, like gold, silver, cigarettes, lunch vouch-

ers etc.). The pros and cons of the need for carrying costs from a theoretical point of view is already often discussed in literature (Cf. Suhr 1989, Myers 1940) and recently brought on the agenda as solution for central bank policy by economists like Buiter, Goodfriend, Mankiw and others (Cf. Buiter 2009, Buiter & Panigirtzoglou 2003, Goodfriend 2000, Mankiw 2009, Ilgmann & Menner 2011), but it is not subject of this paper.

So the reason behind the original concept of Gesell was a reform of the monetary system of a national economy and not the introduction of a demurrage-based complementary currency besides the conventional currency. A central currency-office should issue the new currency as paper money without any gold or other asset backing. The issuance volume should be linked to price index numbers to prevent inflation. Gesell and today also some of his "hard-core" disciples are still convinced that only cash is representing the real money stock, so the concept of Free-Money only considered cash and not bank money (deposits) (Cf. Myers 1940: 36). The state was supposed to issue notes but no coinage. With an exclusive status of legal tender, the notes could be able to edge out the former gold and silver coins as medium of exchange. His initial suggestion for the depreciation rate was about 5% annually, which would be a regular revenue stream ("tax on hoarding") to the Currency Office besides the seigniorage-income. To avoid the depreciation the money holder could deposit the notes on his savings account.

Gesell advocated a single and homogeneous money, paper-based and issued by the state and got its de facto monopoly by legal coercion as legal tender. A dual monetary system (one or more complementary currencies besides the conventional state-issued money) or even competition between denationalised currencies (Hayek) would be rejected by Gesell and is rejected until today by dogmatic Gesellians. During lifetime he did not support early activities of some followers to initiate CC based on his ideas. So Gesell can really not be seen as "Spiritus Rector" of complementary currencies. So why is his idea of depreciating money still popular within CC-initiatives since 1926 until today? The motives for the feature "demurrage" of the historical CC were varied. Historical CC were initiated

- to demonstrate the expected positive effects of demurrage at a limited (local) scale as additional practise-based argument for monetary reform at national level,
- to start Gesellian monetary reform already at local level as grassroot pilot projects in order to become a mass movement,
- as (temporary) self-help project during an economic depression.

Under the assumption that the need for a CC is not a temporary instrument to change a single conventional system A into a new single homogeneous system B, only the third reason is important for the theoretical relevance of demurrage for CC. Here the American economist Irving Fisher (1867-1947) delivered some theoretical foundations. To understand Fisher's point of view, we have to be aware of his previous perspective of stamp scrip within the Great Depression. During this period (especially in the year 1933) a huge variety of private local money (called "Depression Scrip") entered into release as result of the shortage of conventional money, which was hoarded. People and communities tried new ways and products. One "basic" innovation in the early period of depression scrip was stamp scrip (first trial was probably in January 1932 in Anaheim/California), but it was the so-called transaction-based stamp scrip without any Gesellian characteristics and probably without any origins with European stamp scrip (see appendix).

Fisher was aware of the idea of Gesellian stamp scrip and the European projects especially by his later German assistant Hans Cahrssen, an immigrant and follower of Silvio Gesell¹. Fisher and Cahrssen observed the phenomenon of the "wrong" stamp scrip in the USA. They tried to steer it into the "right" direction by editing a kind of manual, how to issue stamp scrip in the "right" way (with demurrage), reflecting the former European experiences (Cf. Fisher 1933). As remedy against the crisis they turned the American stamp scrip into Gesellian stamp scrip by replacing the trigger for sticking the stamp from "transaction" into "date". Before the lobbying activities of Fisher/Cahrssen no time-based stamp scrip was found in the USA. The result was a really "american-sized" self-liquidating scrip with a total loss of value (!) after 1 year (weekly depreciation rate of 2% of the face value) compared to the moderate rate of 5.2% as suggested by Gesell. So the main reason behind the high level of demurrage was the funding of the scrip by conventional cash within a year and not the prevention of hoarding, which could be reached by a lower level. Fisher did not address the key differences between the American and European demurrage-based stamp scrip. For him it was the same idea, "invented in Europe and now spreading in America" (Fisher 1933: 7). With this (new) concept of demurrage based stamp scrip in mind, Fisher proclaimed this monetary innovation as instrument of economic policy. Tax on hoarding would increase the velocity of circulation of money in times of depression, stimulate economic activity and elevate the price level (in case of deflation). The effect of depreciating money on the velocity of money circulation was already recognised by Gesell (E.g. Gesell 1899: 278), but more as a permanent operation than a "supplementary means of monetary control" (Fisher 1934: 133)

1 Cahrssen published in August 1932 an article about the German stamp scrip trial "Wära" in the US journal The New Republic of 10th August 1932, which attracted the interest of Irving Fisher. Cf. Warner (2010), p. 34. But Fisher had already knowledge of the Gesellian stamp scrip idea before his first contact to Hans Cahrssen. Fisher suggested a time-based stamp scrip with a moderate demurrage-rate of 1% per month in his book "Booms and Depressions" which was issued in summer 1932 (Cf. Fisher 1932, pp. 227-230). To the role of Fisher within the stamp scrip movement see also Gatch (2009).

and temporary instrument to steer velocity (“speed control”).

Unlike Gesell, Fisher regarded stamp scrip as a temporary measure due to a crisis, to be issued as a complementary currency at national (state) level. “It could be used to help forestall the great emergencies by being periodically applied and withdrawn in normal times, like other money regulators.” (Fisher 1934: 103) Stamp scrip could be issued in a small volume. “Its ultimate usefulness is not its own volume or even its own speed, but rather its eventual effect on the credit currency which has gone dead. The scrip, as it were, primes the pump of the credit currency.” “What the scrip does is to furnish the business men with the spectacle of customers walk in.” (Fisher 1934: 103). Not only consumers will be discouraged from hoarding cash but it will also “discourage the banks from hoarding cash – “to keep liquid”, as they prefer to express it.” (Fisher 1934: 168). Unlike Gesell, Fisher proposed to extend the demurrage-principle to bank money (deposit currency).

So for the first time, with Irving Fisher we have a theoretical background for the usage of demurrage within a CC-environment.

DESIGNING OF DEMURRAGE BY GESELL

During his lifetime Gesell changed his mind about the concept for implementation of his Free-Money by improving the efficiency of the practical money handling. His initial idea (1891) was table money where a table printed on the front side shows the relevant value for every week of the year after issuance. He improved this concept 1911 slightly by replacing the value list by a list of surcharges to be paid by the payer to the merchant, who has priced its goods usually at round amounts. At the same time multiplication-tables should be delivered to merchants and other payees to calculate the total surcharge-amount at the till. The depreciation rate is a fixed amount per week of 1‰ of the nominal value, which results in a 5.2% loss of value at the end of the year. The notes expired after one year and had to be re-issued. If the depreciation loss is a fixed amount per week, the holder has to be aware of a compound negative interest effect. At the end of the first week of January (issuance at January 1) the loss of value is 1‰, in the last week of December the loss is 1.054‰. Gesell was aware of this effect (Cf. Gesell 1906): 97).

To solve the problem of change, he introduced several concepts, like the print of small value notes (instead of coins) and in series with different colours (“series money”). Each year one colour was chosen (by lot). This series lost its total value immediately. Another solution for change has already the characteristics of stamped money. The lowest denomination of the currency unit (1 Mark) was issued as two different notes. One note was like the other denominations (with a depreciation table), the other note was equipped with 100 gummed squares of 1 Pfennig, which could be cut out as change money. The merchant could affix the unnecessary “stamps” on a special sheet for completion

of the stamps again to 1 Mark for redemption at the issuer (within a year against a 5% discount).

Years of publication	Depreciation Method	Change money solution
1891, 1987, 1899	Table Money with shrinking value list	Series Money
1906	Table Money with shrinking value list	Additional sheet of lowest denomination with 100 gummed squares
1911, 1916	Table Money with a list of surcharges (based on the idea of Gustav Simons)	Additional sheet of lowest denomination with 100 gummed squares
1916	Stamped Money (based on the idea of Gustav Simons). Stamps can be obtained as part of the low-value notes; no separate stamp selling	Not clearly specified. The low value notes would have a kind of stamps section
Since 1919	Stamped money Additional selling of a stamp sheet with different stamp denominations	Usage of the stamps also as change money

Table 1: Evolution of Gesell’s concept for practical implementation of Free-Money

During the search-process of practical implementation of the Free-Money-idea Gustav Simons (1861 – 1914) played an important role. As one of the earliest followers of Gesell, he was his sparring partner in finding a practical solution during the period between 1911-1914, where both Gesell and Simons were living in the co-operative community of Eden-Oranienburg (near Berlin). As baker he had to be not only familiar with the practical issues of change money as well as with the discount-stamps which became very popular in Switzerland and Germany exactly in the same period of the first design of stamp scrip as specimen for the Swiss Franc note, published by Gesell in 1916 in Switzerland. Gesell stated fairly that it was Simons’ idea to improve the

table money by listing surcharging rates (Cf. Gesell 1911: 153) and to change the concept from table money to stamped money (Cf. Gesell 1916a: 91). By taking over the stamp-idea of Simons, Gesell expected a higher acceptance in those countries where discount stamps were common: "The concept will encounter less resistance in countries where people are used to such sticking practices for other purposes" (own translation (Gesell 1916a: 91)). At that time (1916) Gesell probably advocated the stamp idea only for such countries. In the first and second edition of his principal publication "Die natürliche Wirtschaftsordnung" (1916), Gesell still proclaimed the table money solution (Cf. Gesell 1916b: 98-105). As Minister of Finance of the few days existing Bavarian "Räterepublik" during the revolution of April 1919, Gesell prepared the issuance of a new currency issued by the Bavarian state as stamped money (Cf. Gesell 1919: 280). From 1920 onwards Gesell changed in later editions of "Die Natürliche Wirtschaftsordnung" definitely to the stamped note, however without mentioning the originator of the stamp idea, Gustav Simons. Notes would be issued in the usual denominations of the currency unit (e.g. 1, 5, 10 etc.), so different denominated stamps were needed to be distributed as a postage-stamp booklet ("Kleingeldzettel"). These stamps should also replace the coinage (nickel or copper money) for all low-value transactions. So the search for a solution of the change money problem lead to the evolution of table money to stamped money concept, inspired by the contemporary discount stamp hype in Switzerland and Germany.

Within a decimal currency and with an expiration period of 1 year for each note, a depreciation rate of 1‰ per week (5.2% loss p.a.) as suggested by Gesell could be realised by 52 squares for stamps of 1 sub-units (like Cents or Pfennige) on the backside of 10 Unit banknote. For lower denominated notes a weekly depreciation would only be possible by issuing stamps below the value of the sub-unit of the currency or by a depreciation-free period longer than a week (e.g. five times a year for a one-currency-unit note, as suggested by Gesell). But the introduction of different depreciation-free periods between the denominations would lead to disparity within the concept. A fixed rate of 1% (of the denominated value) per week and a rate of 4% per 4 weeks would result to the same loss of value at the end of a certain period (e.g. 48% after 48 weeks) if no stamps are stuck. But for the holder(s) of this note, who have to pay this tax, the net present value (NVP) of the tax burden decreases if the depreciation period increases². As already discussed, from a theoretical point of view a short or even no depreciation-free period would be optimal, but a daily sticking of a stamp on each banknote is not very convenient. Another restriction is the space available on the backside or inside (folded scrip) and the minimal size

of the stamps. The shortest depreciation-free period in the history of (dated) stamp scrip was a half-week (Cadillac/Michigan USA 1933). Another extreme was the state-wide issued stamped 1 dollar note of Alberta (Canada 1936) with squares for 104 tiny stamps of 1 cent per week (expiration period 2 years).

Since the latest design of stamped money by Gesell there are no basic improvements or amendments of the concept or even new ways to realise the idea of shrinking money for paper-based currency. The concept of Table Money has not gained acceptance. Only a few examples during the Great Depression are known. Partisans introduced a depreciation list on their notes during 1945 in Montenegro (Yugoslavia). It is interesting to see that the first movers within the recent demurrage-based CC in Germanic countries started again with Table Money³, but Stamped Money prevailed again.

HISTORICAL IMPLEMENTATION OF DEMURRAGE

For the original purpose as single state-issued national currency, the idea of depreciating money of Silvio Gesell has never been put into practice. It is a fascinating theory, but without practice. Most of his followers are still waiting for an implementation, although the chance is not very realistic.

As already mentioned during the Great Depression demurrage-based CC became popular as emergency money, first in Europe (Germany, Austria, Switzerland, France) and later in the USA and Canada (Onken 1983). In Europe most of the issues had a depreciation rate of 1% per month, which was much higher than the 1‰ per week, proposed by Gesell. In the USA most of the time-based stamp scrip initiatives introduced a demurrage rate of 1% per week in order to make the scrip self-financing after 1 year (see appendix). Although the rate in the U.S. was four times higher than in Europe, the level of depreciation had obviously no significant impact. On both sides of the ocean we see success stories and failures. In some cases some empirical data relating to the economic relevance are available. For example, the economic results of the scrip issuance (hybrid version) of Mason City/Iowa (1933-1934) of an additional local GNP of 0.5m US Dollar, generated by stamp scrip, was quite comparable to the famous economic revival of Wörgl in Austria (1932-1933) (Godschalk 2001: 15-16). It seems that the level of demurrage was not crucial. All demurrage-based scrip projects of the Depression era were terminated sooner or later. The issuance of private stamp scrip was prohibited in Germany and Austria (not in Switzerland!). In the USA the local projects were usually terminated after the redemption of all scrip, which was initially issued. An issu-

2 The effect is depending on the assumed interest rate for liquidity. Gesell did not perceive this difference or neglect this effect because within a Gesellian monetary economy interest as liquidity premium would disappear. But it will play a role, if the tax (stamps) has to be paid within a CC-environment.

3 The first „contemporary“ demurrage-based CC was the „Phoenix“ in Arnstadt, issued during a few months in 1999. Another Table Money named „Roland“ was realised in Bremen since 2001. But the Roland initiators removed the table money scrip after a few years and transformed the system to an account-based LETS although the demurrage was maintained (1% per month on positive and negative balances).

Location	Santa Cruz	Okmulgee	Mason City	Carmel
State	California	Oklahoma	Iowa	California
Type of stamp scrip	tx-based	tx-based	hybrid	tx-based
Total issuance (No. of 1-Dollar-notes)	1,050	3,000	10,000	1,200
No. of samples	76	66	44	21
Samples in % of total	7.2%	2.2%	0.4%	1.8%
First day of issuance	April 11 1933	Febr. 1 1933	May 6 1933	Febr. 2 1933
Last day of issuance	June 10 1933	Apr 30 1933	July 1 1933	July 28 1933
Total stamps needed (max. no. of transactions)	50	35	52	36
Transaction fee (USD Cents)	2	3	2	3
Av. no. of transactions	48.7	33.3	52.0	32.6
Av. no. of days of circulation	365.9	204.6	320.1	229.8
Av. sales turnover per year (USD) = VELOCITY	51.8	97.1	60.6	56.6

Table 2: Empirical evaluations of some stamp scrip projects in the USA (1933), based on original scrip notes

ance as a continuous long-term process was not focused, although the economic depression was still there.

The demurrage within the local private money schemes in Europe and in the USA could have increased its own velocity as primary effect, stimulating local economy during a period where traditional money was hoarded. The level of the demurrage fee obviously played a negligible role. Since the money was never released to any significant extent in a larger region (e.g. state-wide), the secondary effect of stamp scrip as macroeconomic steering instrument Fisher had hoped for had not been empirically demonstrated.

DOES DEMURRAGE MATTER?

The question is therefore legitimate whether demurrage has ever played a crucial role at all in economic relevance, in terms of sales volume generated by CC.

More than 500 towns issued private money during the Great Depression era in the USA. Also in Europe other private money (without depreciation) was issued, like the J.A.K.-notes in Denmark (1931-1933) or the depression scrip in Hofstetten in Switzerland (1933). Was time-based stamp scrip more successful than other local scrip?

Within a CC environment it is difficult to measure the economic activity of paper money, if the scrip is not immediately redeemed after each transaction, but used by individuals as means of payment in a long transaction chain from hand-to-hand. In this case there are only indicators, such as the acceptance in stores, the wear of the used notes, the duration of the project, the testimony of contemporaries, etc.

The transaction-based stamp scrip was an ingenious idea to build up reserve funds for redeemability after the circulation period, but not an implementation of the Gesellian demurrage concept, by taxing transactions instead of a time-based liquidity fee. But some of these “self-liquidating” scrip projects are delivering unique information by tracking all the transaction data, documented on each note. If the first date of issuance and the date of redemption was written on the stamps or printed on the

note, the sales turnover generated by this note and its velocity are exactly tracked. The notes are even showing the initials of the persons and shops during the whole transaction chain. Some of the initiatives of stamp scrip did not destroy the redeemed and cancelled notes, but sold them to collectors. A relatively high number of still existing notes, which are fully or nearly fully affixed by stamps, could be an indication for a successful project. Evaluation of velocity is possible for the stamp scrip issued during the Great Depression, which was successful and a certain number of notes are still available, like the notes from Santa Cruz (California), Okmulgee (Oklahoma), Mason City (Iowa) and Carmel (California).



Figure 2: Front –and backside of the scrip issued in Mason City (1933)

In Santa Cruz and Mason City the value of the stamp was 2 cents, so the fee was 2% of the nominal value of the one-dollar-scrip. After 50 (or 52) transactions the scrip had to be redeemed at the issuer for one “real” US dollar. In Ok-

mulgee and Carmel the initiators had chosen a higher fee of 3 cents, limiting the number of transactions at 35 or 36. The scrip issued in Mason City was (as result of the publications of Fisher & Cohnsen) hybrid (time- and transaction-based), so the stamp had to be affixed with each transaction or each week. Analysing its velocity the results are comparable to the transaction-based only scrip issuances. Although the transaction fee was 50% higher (3 ct. compared to 2 ct.) the velocity of the Okmulgee scrip accelerated to almost 100 almost twice as high as Santa Cruz or Mason City. During the Great Depression the velocity of the dollar (M1) decreased dramatically from 3.42 (1929) to 2.19 (1933) (Cf. Friedman & Schwartz 1971: 493ff.). A velocity of transaction-based scrip of 50 or even more indicates that this kind of local scrip worked very well in these areas compared to the striking conventional money during this economical crisis. There are no hard facts available about other local scrip. Maybe its results would be the same, better or worse. Besides price conditions, other parameters have basically influenced the economic results of the CC. From a theoretical point of view the scrip subject to an additional fee load for each transaction would not be an optimal initial condition for success. But in some locations it obviously worked very well.

CONTEMPORARY IMPLEMENTATION OF DEMURRAGE

After the wave of LETS (1993 – 1998) became more saturated in Germany, a new wave of CC based on paper-money came up at the beginning of the new millennium. The Bavarian Chiemgauer (started 2003) was not the first one, but its successful concept and marketing became a benchmark within the "Regiogeld"-movement and the concept was taken over by a lot of following projects. The Chiemgauer is stamped money, issued against the exchange of Euros with a demurrage fee of 2% per quarter. The origin of the implementation of demurrage at the Chiemgauer with stamp scrip was the theory of Silvio Gesell and the success of Wörgl in Austria (1932-1933). The depreciation loss of 8% per year was pragmatically chosen. This rate results into a round sum per quarter and it is an average value between Gesell's proposal of 5.2% and the historical rate of 12% of Wörgl. At the time being about 55% of the approx. 40 German Regiogeld-initiatives⁴ had taken over the demurrage-concept of the Chiemgauer. Most of them implemented the 8% demurrage rate of the Chiemgauer. The new German concept of demurrage is already exported to Austria ("Waldviertler"), France ("Abeille") and UK ("Stroud Pound"). Within the Chiemgauer, which is not only issued as paper money but also as bank money (current account), the demurrage is also implemented to the cashless Chiem-

gauer accounts with a fee of 0.02% per day (with a negative-interest-free period of 90 days).

The reasons behind demurrage are safeguarding and stimulation of the money circulation in order to generate more local business: "Money that never slows down circulation"; "The advantage is that everybody keeps money going"; "The velocity of money or the speed of money is faster." (Gelleri 2009: 69). Demurrage or other ways to safeguard the circulation is promoted by the German Regiogeld-Association. Every initiative, which is member of the association, is committed to the quality criteria. One of the criteria is: To support a sustainable financial system by determining and controlling the amount and velocity of the money issued.

The velocity of the Chiemgauer (yearly sales turnover divided by the average outstanding money stock) is estimated at 10.6 (2009). Although after the introduction of the Euro no domestic figures are available anymore, the velocity will be much higher than the velocity of conventional money (M1), which was approx. 3.5 of the former German DM in 2000 (before the introduction of the Euro). Figures of the velocity of other German CC are rare. The velocity of the "Langenegger Talente", a local CC without demurrage in Austria (Vorarlberg) is estimated at only 4 (2009). However, the velocity of the traditional "Bethel Geld" (without demurrage), issued in Bielefeld as CC since 1908, is approx. 14 (Cf. Godschalk 2008: 198). The empirical data does not yet allow conclusions on the effects of implementing demurrage on the velocity within the Regiogeld-scenery in Germany. However, the velocity of CC is probably much higher than the "speed" of traditional currency.

THE SWISS CHW (WIR FRANKEN): A SUCCESSFUL CC WITHOUT DEMURRAGE

Although the implementation and handling of demurrage at a cashless currency (by a negative interest mechanism) is much easier compared to a cash-based currency, the account-based Swiss WIR-system still has and never had demurrage (except for a tiny experiment of issuance of low value stamp scrip notes during 1938-1948). The WIR was set up in December 1934 by Werner Zimmermann and Paul Enz, who were followers of Silvio Gesell, but the concept is not based on his idea of shrinking money. The origins of the Swiss WIR were the so-called "Ausgleichskassen" (compensation schemes) in Germany. The Ausgleichskassen (later also called "Arbeitsgemeinschaften") were local cashless credit systems within a system of closed-loop accounts of the participants (Cf. Godschalk 1986: 71-73). Contrary to traditional barter exchanges the creation of money (positive balances on the accounts) was not generated by over-

⁴ It is difficult to draw a clear boundary line between contemporary Regiogeld and other private issued means of paper money in Germany. A criterion could be the membership of the Regiogeld-Association ("Regiogeld e.V."), but some initiatives are not member. The numbers mentioned here are based on initiatives, who are issuing paper money in more than one denomination, which should be long-term used as means of payment from hand-to-hand. So for example local gift vouchers are not included. Within the Regiogeld different concepts are used. Most of them are issued against the exchange of Euro (backed by Euro); others are issued by the participants as credit backed by their products and services (backed by output). Some of the Regiogeld-issues are based on time instead of Euro as unit of account and exchange.

drafts of member accounts (like traditional barter exchanges or LETS, where the total balances are zero), but by initial loans granted by the system to some participants as debtors. The local Ausgleichskasse acted like a central bank issuing its own cashless money by granting zero-interest credit to its participants (SME, farmers, unemployment & relief initiatives, private persons). The system was closed-loop without a possibility to exchange the CC into the national state-issued currency. These CC-systems were quite successful in Germany during the Great Depression since 1931. After the success of the first Ausgleichskasse in Rendsburg (started in summer 1931) these cooperatives expanded rapidly throughout the German Reich. At the end of 1932 approximately 40 Ausgleichskassen were listed as registered cooperatives and other legal entities in Germany. The German government tried to stop this “subversive” money creation by several laws. In the end the national-socialist regime was successful by a specific law in 1934, which definitely stopped this “abuse of cashless payments” by the Ausgleichskassen. The basic idea was exported to other European countries, like Austria and Denmark. In Denmark the issuance of private scrip notes of the J.A.K. co-operative (Jord-Arbejde-Kapital), practised since 1931 was just prohibited by law in 1933. The J.A.K.-founder Kristiansen looked for alternative solutions, picked up the idea of the zero-interest credit clearing of the Ausgleichskassen and started its cashless currency of the J.A.K.-clearing “Afrengningscentrale” in the beginning of 1934. The WIR-founders visited Denmark twice in 1934 to study the J.A.K.-clearing system before starting their own system at the end of 1934. Their main goal was interest-free loans and deposits and not Gesellian melting money. Therefore, the initiative was not supported (and even criticized) by the Swiss organisation of Gesell followers (SFB), whose target was a nation-wide monetary reform based on “Freigeld” and not a regional (later nation-wide) CC-project (Cf. Schärer 1983: 201-205).

The WIR system is a cashless account-based circuit. In 1938 it started a dated stamp scrip (WIR Verrechnungsschein) in a small denomination of 5 WIR-francs as additional medium of exchange only for small-value payments between participants and for payments to non-participants without an account. This scrip should attract non-members to join the system. The demurrage fee was 2% per month. It was not successful and eventually terminated in 1948. There is no information available about the volume, but it must be edited in a very small volume and neglectful compared to the cashless monetary volume of the WIR. Studer (1998: 16) suggested that demurrage was generally implemented within the WIR system until 1948 by a misleading statement. Demurrage was only relevant for a small amount of additional scrip notes. In the late 40s the WIR board discussed the introduction of demurrage on the WIR-Franc balances, but it was never realised. The basic idea of Gesell of shrinking money played a neglected role in WIR’s history. So the WIR as system was never a Gesellian institution as suggested by Studer (Cf. Studer 1998: 18). Its roots go back to the anti-interest theories of the mutual exchange socialists and the cash- and interestless systems

of the Ausgleichskassen in Germany of 1931 – 1933. Since 1929 the followers of Gesell were involved in several demurrage-based stamp scrip projects in Germany, Austria and Switzerland (eg. Wära, Tauscher), but without personal or ideological connections to the parallel movement of the Ausgleichskassen in Germany. The Ausgleichskassen and the Gesellian stamp scrip projects were at that time two parallel strings within the history of practical monetary reform projects in the Germanic countries.

CONCLUSIONS

Currency with demurrage is a theoretical concept for a reform of the monopolistic issued state money originated by Silvio Gesell. Until now it has never been implemented the way it was originally intended. Based on the theory of Irving Fisher and the practical experiences during the Great Depression a demurrage-based CC could be helpful as a temporary steering instrument during economic depressions to stimulate economic activity by increasing the velocity of money (of CC and indirectly of conventional money), probably only if issued state-wide. The level of the demurrage-rate of the local issued depreciated money seems to be not crucial for the usage, turnover and velocity.

A theory behind the implementation of demurrage within a durable CC without the evidence of an economic crisis is lacking. Its main goal is to prevent hoarding and to increase the velocity of the issued CC. Until now there are no hard figures of contemporary CC proving this effect compared to other CC without demurrage. The Swiss CHW (WIR Franken), the oldest and most successful CC in the world, is a currency without demurrage. Demurrage probably does not matter if the usage, turnover and velocity are the benchmarks.

Based on historical and contemporary experiences, the velocity of CC is usually much higher than the conventional money. Even a CC with an additional transaction fee can not prevent its extremely high level of velocity.

The main driver behind the higher level of velocity of CC is probably Gresham’s law: Bad Money drives out good money (if they exchange for the same price). Most CC are issued with a fixed exchange rate to the national currency. Due to its restricted liquidity CC is per definition “bad money” compared to the conventional state-issued money as legal tender within the whole territory of issuance. From a user’s point of view a demurrage-based CC (if paper-based) is more complex and less convenient. By fixing stamps at the right time the transaction and information costs seems to be higher than other less complex CC. On the other hand demurrage could be a revenue source besides seigniorage. In the Depression era the revenue stream of demurrage fee could even create a reserve for 100% backing of the CC by conventional money.

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APPENDIX: TRANSACTION-BASED STAMP SCRIP IN THE USA

The original stamp scrip issuances in the USA were quite different from the Gesellian concept and issues in Europe. Stamps had to be affixed with each transaction (without time-based parameter) by the user (seller or buyer). The scrip note, fully filled with stamps, could be redeemed at its face value against traditional cash. The redemptions fund is automatically built up by the revenues of the sold stamps. The stamps had to be paid in cash by every user in the transaction chain, who benefitted from the additional trade turnover. At the end of the day the scrip, initially issued as fiat money, was 100% backed by conventional money ("self-liquidating" or "self-financing" scrip). Usually the value of the needed stamps exceeded 100% in order to create a small surplus for coverage of the handling and printing costs of the scrip issuance. This transaction-based stamp scrip has (besides the sticking of the stamps) nothing in common with the basics of the Gesellian time-based stamp scrip: depreciation and preventing hoarding. Even the effects are contrary: instead of a built-in depreciation as incentive for quick usage, the payer (or payee) has to pay a fee for usage. Contrary to the shrinking money concept of Gesell we see a credit note, which becomes over time more valuable after each transaction by the rising of the funds for redemptions. About the origin of this American-type of stamp scrip-idea there is rarely any indication. Like Irving Fisher, the Gesellians in Europe believed that it was a misunderstanding or deliberate modification of Gesell's idea. Charles Zylstra was the great promoter of transaction-based stamp scrip in the USA (first issuance in Hawarden/Iowa in October 1932 as transaction-based scrip, changed by Zylstra to time-based scrip in April 1933), but he was not the first one and therefore in any case not the (first) inventor of the idea. The first (not very successful) launch of stamp scrip in the USA was probably in Anaheim (California) in January 1932, initiated by Joe Elliott. "Elliott himself claimed that he had thought up the idea of stamped money himself, but its similarity to Gesell's ideas makes one wonder if there might have been some (possibly unconscious) awareness of Gesell's work" (Warner 2008: 310). The second town that followed the concept of Anaheim (1 Dollar-note with 25 stamps of 4 Cents) was probably Merced (California) in August 1932 (see figure 3).

The mechanism of a certain target amount to be reached by collecting and affixing stamps was popular at that time within discount stamps schemes and savings plans. It is likely that the idea originated more here.

Stamp scrip and other scrip with depreciation (like table money) were issued (or planned, but not issued) in at least 133 towns and regions within 28 states of the USA during the Great Depression. The majority (72%) was still transaction-based, taking over the original idea of Anaheim or the concept of Zylstra. Usually transaction-based scrip was 100% self-financed by the stamps to be affixed. Within a few scrip issues the users were not obliged to affix a total number of stamps corresponding with the nominal value of

the note, like the "self-liquidating" scrip. These issues had only a few stamps, therefore called "limited stamp scrip" (e.g. the well-known scrip of Fostoria/Ohio). Only 7 towns realised a purely time-based scrip according to the Gesellian inspired ideas of Fisher/Cohrsen. Especially in Michigan the hybrid type was very popular by combining both ideas (stamps had to be affixed per transaction or per week).



Figure 3: Front- and backside of the early transaction-based stamp scrip issued in Merced (1932)

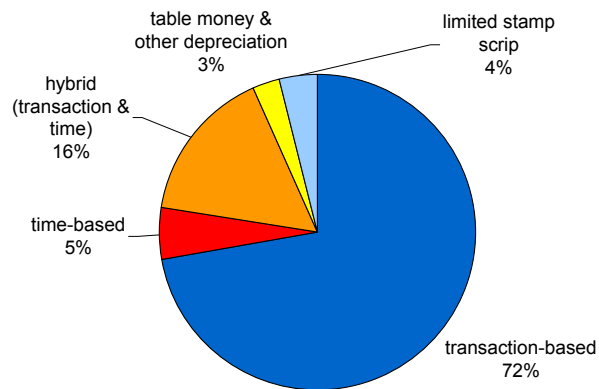


Figure 4: Stamp scrip and other scrip based on depreciation, issued in the USA during the Great Depression (based on Mitchell & Shafer 1984)

The last USA issued transaction-based stamp scrip during the Great Depression period was probably issued in San Luis Obispo (California) or in Chicago (United Trade Dollar Exchange) in 1939. It seems that this ingenious idea was never picked up again although it could be an interesting concept for CC, where a backing in the conventional currency is an important condition for acceptance by avoiding a prepaid way of issuing.

Stamp Scrip during the Great Depression	Transaction-based (USA)	Time-based (Europe)
First issuance (as far as known today)	January 1932 (Anaheim/California)	1926 (WARA) (Germany)
Booming period	1933	1930-1931 (Germany) 1932-1933 (Austria)
Legal pressure	No prohibition	Prohibition in Germany and Austria (not in Switzerland!)
Fee (stamp)	Per transaction (usually 2% or 3% of face value)	Per time unit (usually 1% per month)
Product variety	Time-based scrip and hybrid variations (time & transaction) after lobbying of Fisher & Cohn	Table money (e.g. Tauscher in Germany 1931)
Funding/Backing	Self-financing	Usually backed by conventional money
Redemption into conventional currency	Usually after full term (all stamps affixed); sometimes a clearing house was installed for premature redemption against a discount by payees (retailers)	In most cases, but with disincentives (e.g. redemption against discount)

Table 2 : Stamp Scrip during the Great Depression era



International Journal of Community Currency Research

Volume 16 (2012) Section D 70-79

ECONOMIC ACTIVITY WITHOUT OFFICIAL CURRENCY IN GREECE: THE * HYPOTHESIS

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ABSTRACT

Historical study has not been within the scope of the research project titled “Exchange networks and parallel currencies: Theoretical approaches and the case of Greece”. However, this proved to be a deficiency of the project and the present paper is an attempt to formulate a hypothesis, with the intention to see at least within such a historical perspective, how scheme members with both their discourse and action challenge our perceptions about important issues in economics. There is no name or title for this hypothesis (yet). We believe that it is too early to name it. It seems that the schemes studied are the surface of an economy or economies which never ceased to exist, as both material spaces and experiences in people’s histories. It is about viewing all this activity as setting a different agenda for economics than what capitalist and anti-capitalist discourse can offer.

ACKNOWLEDGEMENTS

I would like to thank Dr Efthymia Kanner, historian and teacher of the course “Nation-Creation in Balkans” at the Department of Turkish & Contemporary Asian Studies (University of Athens), for her insightful advice to me on choosing an essay topic to work on at a moment that I could not see any connection between her course and my research, but also for the literature advice she provided me with, and mostly for her comments and encouragement. I would also like to thank Prof. Bernard Lietaer (Center for Sustainable Resources, University of California at Berkeley) for having sent to me his articles and book chapter concerning economic sustainability and Prof. Dina Vaiou (School of Architecture Engineers, National Technical University of Athens) for educating me about being careful with terms like “rural” and “urban” areas, especially when I use them in my research analysis. Finally, I am indebted to Dr Jérôme Blanc (Université Lumière - Lyon II) for his comments and advice, to blogger Stathis Stasinou (<http://techiechan.com>) for his critique and creative comments, as well as to two anonymous referees for their advice on literature and their insightful comments on a previous version of this paper. All deficiencies of this paper remain a responsibility of the author only.

This research has been co-financed by the European Union (European Social Fund – ESF) and Greek national funds through the Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF) - Research Funding Program: Heracleitus II. Investing in knowledge society through the European Social Fund.

An earlier version of this paper has been presented at the 2nd International Conference in Political Economy “Neoliberalism and the Crises of Economic Science” held on 20-22.05.2011 in Istanbul, Turkey.

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"...why do people hear the message at a particular moment, so that they can then say they have just learned what has always been known."

Maria Todorova (2004:4)

1. INTRODUCTION

1.1 The Research Project And Its Scope

The entire research project is titled "Exchange Networks and Parallel Currencies: Theoretical approaches and the case of Greece" and studies economic activity without the use of any official currency, which takes place beyond charity or family-friendship circles. The project examines parallel currencies, exchange networks and free bazaars, most of which emerged the last years in Greece and still emerge and develop, especially since 2009 onwards. Moreover, some sui generis initiatives have been included, despite the fact that they cannot be categorised into any of the already mentioned scheme types (Sotiropoulou 2010:1-6, 2011a: 6-29).

By the term "exchange networks" I mean structures which facilitate non-monetary exchange (barter) for their members and they are either of general nature or specialised in one sector of activity. The term free-exchange bazaar (χαριστικό-ανταλλακτικό παζάρι) is the one used for bazaars where people can bring things (clothes, petty machines, shoes, toys, books, CDs, furniture, etc.) to exchange them or just give them away and take anything they believe it is useful for them. The free networks are online only; their members notify when they want to give something away for free or when they need anything that might be available but not yet announced online, and they get instantly notified when something is disposed by any network member.

By "parallel currencies" we mean any currency used by people in transactions, without this being official in any country. A parallel currency might have only a virtual or digital appearance (f.ex. units credited in a computer database) or it might take a physical appearance in notes, issued by the currency users. The important feature of parallel currencies is that they have no (positive) interest rate, so loans are without interest payments and currency accumulation is not encouraged.

The project had not been designed to integrate historical research and it is, instead, focusing on the actual economic activity, i.e. the activity taking place since the beginning of the project in February 2009. Moreover, at the beginning of the project it had been chosen that the research findings would not be really placed within a historical perspective. The reason for this decision was that such an attempt would require original historical research which would be beyond the scope and the time-schedule of the project. So, it seemed that it would be better to do the historical research within the framework of another future project.

1.2. Methods and Hypotheses

So, the project started in February 2009, with the researcher following qualitative research and/or ethnographic methods: observation, observation by participation, free discussions, text analysis, then open-question interviews with scheme coordinators or members with somewhat global view of the activity (Sotiropoulou 2010: 13-14).

It seemed that this decision of keeping my attention to the present was more or less well-working during the first two years of the research. This does not mean that the research findings did not include hints or evidence about older exchange and barter practices. Research participants themselves often pointed out in several cases that their activity is not something new but something that existed, at least some decades ago. In some cases, even specific non-monetary contract names have been mentioned to me, to educate me that this activity was quite formal at some point in the past, even if the contracts were not acquiring a written-material form. However, I carefully kept all information aside as it seemed "irrelevant" to the scope of the research project.

Therefore, the first hypotheses constructed to be examined within the project were more or less unhistorical (Sotiropoulou 2010: 14-21). This means, that the first three hypotheses used in the project could "nicely" be "placed" within any other economic context and still be negotiable even if we did not discuss anymore Greece since 2009 onwards. This might not be inherently bad and I have not discarded those hypotheses, given that they seemed not to be disproved but to shed light on several important aspects of the activity studied. In fact, the hypotheses were attempts to explain the activity studied in terms that could cover the entire activity to some satisfactory extent. In other words, the researcher avoided the monetary theories that leave completely outside the discussion on non-monetary activity, which was the major part of the subject-matter of the project.

1.3. Research Findings Show The Impasse

The impasse of the project itself emerged after the maps of scheme membership have been constructed in late December 2010. The project, between the qualitative (first) and the quantitative (second) phase of the research, included an interlude phase of mapping the schemes with respect to their membership dispersion within Greece. The findings of this mapping were amazing, not only because they showed that this activity is well-dispersed throughout the country (although there are disparities among regions) but mostly because the quantity (many thousands of people) and the dispersion (all over the country) of the schemes was questioning the idea that this activity is completely "new", i.e. a phenomenon emerging since 2009 (Sotiropoulou 2011a).

Several questions were raised, which could be summarised as following: is it possible that all this activity is completely new, or that people have shifted suddenly their choices into joining all those schemes in hundreds or thousands? Is it

possible that all this activity, for which no literature exists, be so quickly acquired as knowledge by so many people who can “miraculously” coordinate themselves without really many instructions? Is it possible that all this activity is a random choice or just an activity invented because of the new communication technologies available to most people? Can this be just a fashion or just a temporary shelter against economic crisis and as a fashion or temporary solution it will fade out once mainstream economy will recover?

Even if I wanted to use the first three research hypotheses I had previously adopted in my research project, those could not explain the extent and the dispersion of the phenomena studied. Moreover, There has been a first attempt to evaluate the “crisis argument” by checking scheme participation in comparison to unemployment increase rates the last two years (2008-2010). The first indications acquired out of this attempt have been inconclusive (Sotiropoulou 2011a: 32-33). Then, another explanation was needed, at least to complement the other hypotheses of the research.

One more question was imminent. The existing literature from all over the world is being oriented towards the study of parallel currencies, while exchange networks and free bazaars are almost inexistent for both academic and non-academic authors, as the literature review has shown (Sotiropoulou 2010: 9-13). This peculiarity of literature had already made difficult for the author to comprehend and analyse the vast part of the research subject-matter (exchange networks, free bazaars and networks, sui generis schemes). A very first hypothesis could have been that exchange networks, free bazaars and other non-monetary schemes are just a Greek originality – but this hypothesis did not have any sound reasoning because we have no research publications from other countries to verify whether any similar activity exists there or not. Plus, it seemed too easy to be verifiable or too difficult to be discarded, because the researcher could not extend the research to other countries.

The only information we have till now about non-monetary transactions that take place nowadays is the information published through the video of the research project “Homenatje a Catalunya II”¹, which started in 2010 in Catalunya, Spain, by Joana Conill, Manuel Castells and Alex Ruiz.. Moreover, there is some information about barter fairs and the anonymous markets (mercados anónimos – very similar to free bazaars) of Venezuela² and some really vague information about direct barter and countertrade contracts among businesses in Argentina (Sitrin 2011:34). Nevertheless, the question of uniqueness remains and there is no point to discuss whether all this activity is a peculiarity of Venezuelan countryside, Catalunya, Argentina and Greece (although, I admit, this would be a fabulous assumption). There are also some studies on business

countertrade in the Anglo-saxon countries where the phenomenon is studied as coeval and not as “an emergency or haphazard way of conducting business” (Marvasti & Smyth 1998: 1087, Birch & Liesch 1998, Neale & Shipley 1987), but this literature is still rather limited.

So, the burning question in January 2011 had been formed like this: We have possible explanations for personal or collective motives for joining a scheme, for establishing a parallel currency or an exchange network, but we have no explanation how this can be done so quickly, with so numerous membership and so extended geographical dispersion, with little scheme-education for new members, with no real support by public authorities (apart from some rare cases) and with this variety of schemes (it is weird that in Greece we have so many types of schemes and in other countries we have just parallel currencies). If this is not a peculiarity of Greek society, then what is really happening?

1.4. When History Revisits The Research Project

At this point, in January 2011, there (re-)appeared the historical question: what if this activity needs to be placed within a historical perspective? What if all those findings, particularly the findings of the mapping process, show that my choice of “keeping focused on here and now” was a vain attempt not to discuss “here” and “now” and everything that this “here and now” meant for the research subject-matter and for the research participants themselves. It is important to note that research participants definitely do not seem perplexed at all with the activity of their fellow scheme-members nor of the other schemes nor do they seem to feel that their activity is of less importance if it is not mentioned in academic literature. They behave but also comment on their activity as something “normal”, “natural” or “common sense”. Moreover, the choice of leaving the historical framework outside of the research project has been proved not only vain, but also impossible: it seemed that research findings, for reasons we cannot explain yet, “demand” their place in time, actually in time and space altogether, even if the researcher had herself made other options for her project.

The preparation of an essay concerning the views of Karl Marx and Friedrich Engels on the Eastern Question (Sotiropoulou 2011b) was the crucial point for the researcher to realise that...everything might have been wrong so far with the project. Of course, it was not a disaster but on the other hand, there was no chance within the specific project to do the historical research required to gather all data necessary to evaluate all the findings and have some definite or at least, satisfactorily verified conclusions. However, it is possible to raise questions and construct one more hypothesis, which will have the features needed to direct the examination of the above mentioned questions into some interesting routes.

1 The research team has published a video with information gathered during research, at <http://www.homenatgeacatalunyaii.org/en>.

2 Information on this has been gathered from personal communications with people who work on barter economy in Venezuela. There is also a print leaflet “Manual de Trueke” (Barter Manual) published by the Municipality of Caracas.

2. THE HYPOTHESIS THEMES

Further study showed several points that were of major importance concerning this research design mistake. One can discern some major characteristics on scheme members' activity which, at the same time, challenge our perceptions about several major issues in economics. Although those characteristics and the views challenged are inter-linked, I distinguish them for analytical purposes only into a series of "themes challenged and revisited", so that they are easier compared to related literature:

2.1. The 'Deficient' Nature of Transactions Without Official Currency

Transactions without official currency are considered to be full of disadvantages (Fayazmanesh 2006: 46-51, 84-88). This holds for both the economies where multiple currencies circulate and for economies where barter or non-monetary mechanisms exist. Multiple currency economies are considered an irregularity and a situation just prior to the final prevalence of one of the currencies. Even Irving Fisher (1933), who promoted the idea of stamp scrip during the Great Depression era, made clear that this solution is only temporary. The idea that barter cannot be but an emergency solution that will fade out once the capitalist economy recovers is also refuted by academics who empirical findings from the ex-Soviet countries where non-monetary or alternative monetary transaction modes show that this activity might be something more than a reaction to market dissolution (Carlin et al. 2000, Aukutsionek 2001).

In addition, barter and non-monetary activity is of much lower status, as they are considered to be "non-economic" and "obviously" inefficient. However, inefficiency of multiple currencies and/or of barter and non-monetary transactions has not been proved. Quite the contrary, there is evidence that they might be much more efficient and efficiency-creating within an economy than the one-currency systems of the mainstream economy. This discussion about inefficiency is a long one and even if one does not want to accept its notion as set by Taussig, who perceives efficiency from the point of view of the majority (poor people), therefore in a political economic way (2010: 83-92) or by Gregory, who questions efficiency as to which person or group it refers to (1997: 125-126), one cannot ignore the theory by Lietaer, Ulanowicz et al. (Goerner, S. et al: 2009a, 2010) where efficiency of a single currency economy might not be under question as such; however, efficiency of a system without resilience is disastrous for the system itself as well as for its components. Therefore, even if one perceives multiple currencies and non-monetary schemes as non-efficient, one should consider whether this variety of transaction modes works towards the resilience of the economy and the stability of the livelihoods of people who participate in it (Lietaer, B. 2010, Goerner et al. 2009a & 2009b, Kocherlakota 1999: 345). Particularly about the theory of economic sustainability by

Lietaer and Goerner et al., although it is about multiple currencies only, it seems easy to be extended to include non-monetary exchange and all various schemes which exist nowadays in Greece. Of course, the question raised is whether this variety is sustainable itself and to what extent.

Moreover, transaction tools (currencies or any other mechanisms) are much easier managed on local and/or community level rather than on vast areas of a country. This happens because problems, like lack of currency velocity and liquidity, are quickly drawing attention on local level and possible solutions might be applied in time, before the aggravation of the problem³. One would add that currency users proximity in material and/or virtual space also makes it difficult for the financially strong community members (who have collected the most of income) to keep on their own and deny to participate in the common solutions of their community's transaction mode problems.

Apart from efficiency, there is the general discourse about modernity and how this multiple-currency or non-monetary systems idea is out-of-date, a relic of the past, which even if we do not want to abandon in the modern economy, it will be abandoned as time goes by. This stance had been even adopted by K.Marx (Hodgson 2001:70). The most important element of this view is that it usually avoids to consider this multiple economy as co-existent or coeval to the mainstream economy (Gregory 1997:7-9, 37-38, 304-312). First, barter or multiple transaction tools are considered to be already history or that they existed very far back in the past. Second, when economics faces a modern phenomenon of this type, if it is not possible to attribute it to "primitiveness" or "badly-integrated peasant economies", then the temporary-emergency argument arises: when there is a crisis, such modes of transaction emerge to cover the money market failure and when the latter recovers, they fade out. Last, but not least, economics has pushed multiple transaction modes into limbo, and when it is faced with them, it prefers to leave them for scrutiny by another discipline, usually sociology or anthropology.

2.2. The Transactions Without Exact Measuring and Without Linear Perception of Time

Of course, it is not only a theoretical choice that economics deny to study anything but the official currency transactions. It is also a practical one: economics as we know it, is unable to study anything without exact measuring and without using equations (Fayazmanesh 2006: S. 102, 125-126) and the fight over qualitative methods is about their real economic use for research. So, even in cases of multiple currencies, where it is supposed to be easier to "measure" the subject-matter of research, economics have no real tools to evaluate such an economy. There are exceptions to this stance of course (Martin 2006, Goerner, Lietaer & Ulanowicz 2009b), but most economists do not work on such

³ Based on a comment by Stathis Stasinou.

models, so methodology for a multiple currency economy is not very elaborated or refined.

Things are much more difficult when it comes to the non-monetary transactions, where economists try to measure values (usually in terms of official currency, while the entire transaction might be structured in a quite different way), while people transacting do not care about measuring⁴. Nevertheless, people care about not being cheated or mostly, about not cheating the other party of the exchange, as research participants have pointed out in their discussions and/or interviews. In other words, what research participants say verifies that they know very well the unequal nature of exchange, as described by Fayazmanesh (2006).

In other words, economics have no tools, not even concepts, to understand how people in real economy can perform economic transactions without exact measuring of values, sometimes not even of volumes of the products or work exchanged.

The other major problem economics have is that their perception of time is linear, while people in schemes have no problem to think of time in a cyclical way or to "count" time with the work or task performed and not vice versa. The time might be social time, well far away from clock time (Taussig 2010: 3-12), and after this "estrangement", economics are unable to understand the world from the viewpoint of the schemes.

We are used to read about not-measuring values in exchange and about non-linear time perception when studying literature on "native" people in countries of Africa, Latin America or Asia. We are not used to accept that people who might transact this way live in the same economy with us. It is not clear whether this denial is unconscious, i.e. it stems from our education in an economic-social system which praises both exact measuring of everything and linear time perception, or whether it is conscious, in the sense that we deny to accept that our perceptions are already questioned in this economy we live in. It might be possible that abstraction of labour works directly towards making time homogeneous so that linearity is the only possible form of it (Holloway 2010: 135-140).

2.3. The Disdain Against Rural Communities and Their Economic Structures and the Modern State

One more feature that most literature reveals is that barter is considered to be an element of a peasant-rural economy and not appropriate for urban economies (apart from emergency moments in history). This appropriateness of a

single official currency for the urban centres has not been constructed with the view, at least, that people in the countryside might have the option to have another or a parallel economic system. Quite the opposite: what is appropriate for the big city is appropriate for all communities, especially for rural communities, which anyway are "backward", "ignorant", "primitive", "late in participating in the capitalist economy, and need to accept the "appropriateness" perceptions as transferred from cities (Schumacher 1974: 160-171).

There is also the view that even in western countries, the construction of the modern state and its economy has been a process of internal colonisation, performed by the centre metropolis at the expense of the regional cultures (Hechter 1974). Greece could not have been exempted from this process and actually it is one more example of the polarisation between "primitive" regions and "progressive" centralised state (Peckham R.S. 2004).

Therefore, to construct a central economy with a centrally-managed currency needed an entire perception of rural communities and their economies as non-important, as keeping economy "behind" and as structures which not only need to be eliminated but also reveal the lower educational, social and economic level of the countryside people. Barter has been associated with poverty, naivety and lack of economic mind.

Of course, those mentalities have been directly connected to the effort to establish a capitalist economy within the framework of a nation-state. To create a national economy, the state could not possibly afford to have several transaction modes, much less to have people who transact without the use of the official currency or without the use of currency at all. To ban multiple currencies might be possible, although it is not easy to chase all those people who would continue to use other currencies parallel to the official one. To ban barter and non-monetary transactions is impossible because of the nature of the latter and actually, it might need such a tremendous mechanism of surveillance that such suppression becomes completely unaffordable. So, disdain and labelling seem to have been preferred to suppress barter or to suppress the explicit manifestation of it.

Obviously, we do not know whether such policies have been practically successful. What we know is that their success was definitely one of appearances: people in Greece the last years before 2008 and for sure, before 2000, would not dare to publicise bartering or non-monetary activity, as this would label them as "peasants, poor, uneducated, etc". The appearance of course, has several important practical implications: people do not know

⁴ There are historical precedents in other countries during the Middle Ages, where the exact measures approved by the authorities were well neglected by the people who preferred to use "generous measures", i.e. to give more than what they were supposed to (See for this Gemmill & Mayhew 1995: 81-109) or to... mint forged petty coins with more (!) silver than the one the officially minted coins contained (Gullbekk 2005). Both cases are well connected to economies where multiple currencies are used, including commodities for (measuring) payments and where there is vast circulation of black (low value metal) money (Gemmill & Mayhew 1995: 110-142, Gullbekk 2005). However, my lack of expertise in this fascinating field of economic history prevents me from making any effective comparison of those medieval economies to the actual phenomena I study.

about the transactions taking place, so the majority believes that non-monetary transactions are already history. In case they want to learn more, sources are difficult to find. This holds for researchers as well as for the author herself.

Economists however, apart from facing difficulties in acquiring information about the non-monetary economy, they are the first victims and bearers of the mentality which neglects activity without official currency. It is amazing how even the Marxist side of economic analysis has also been neglecting or disdaining the economic structures of the peasants, or in general, of the traditional economies. Particularly, the peasant economy is the cause of all deficiencies of the peasants and of the peasants' inability to participate in the marxist revolutionary project (Hammen 1972: 700, Szporluk 1988: 45, 65, 190, Todorova 1994: 470). In that sense, Marxist texts have not been different in promoting more or less the same attitude, as the mainstream texts, toward the variety of transaction modes and the people who preferred them⁵.

This disdain and a certain perception about barter and multiple currencies go hand in hand with a certain perception about the urban centres and their economy. It seems that urban centres in Greece are not behind at all in multiple-monetary and non-monetary modes of transaction while we know from the economic theory, that there is no need for this to happen, because official currency tends to concentrate in urban centres. Apart from the discussion whether modern official currencies or the currencies of the western-european-anglosaxon world are all international currencies (therefore, they are often drained from cities as well, or at least from smaller cities or from the poorest areas of the cities), there is also the question: what has made economic theory to assume that multiple currencies and non-monetary activity are not expected to exist in urban centres? There is no reason for such a peculiarity, even if one could discuss whether city dwellers join the schemes for same or different reasons than countryside habitants do.

Moreover, this idea of modern cities transacting in official currency is something that stems from the form cities have taken in certain western countries the last 200 years, where capitalism first has been well established. However, we still do not know many things about even those cities and the development of their local economies. Therefore, we cannot even use them as models for the cities in other countries and in other historical contexts. What cities should I compare the Greek ones with to assert whether

economic activity without euros in Greek cities is "peculiar" or "normal" or "based on urban economic structures"?

The perceptions about urban and rural areas and their economies are also linked to the phenomenon of tradition and traditional cultures. While central economic authorities were not really in favour of rural economies and directed urban economies to where it seemed "appropriate", they, at the same time, created a museum version, i.e. an institutionalised perception of traditional cultures, both of rural and of urban centres. This version became the "official" "national" one, at the expense of the variety and plurality which traditional cultures themselves bring with them. It has not only been "dehydrated" and "mummified" but it has also been separated from the entire socio-economic context within which this variety has been created. The way folklore and folkloric studies have been constructed and used by the Greek state to eradicate the local culture and replace it by what centrally was decided to be the "authentic" Greek peasant (Peckham 2004: 49-58) could not but have deep implications for local economies. Therefore, people wear folk costumes in folkloric fairs, but they do not know how they are made, or how the traditional way of clothe making was a miracle of economic structures who needed to find rare materials, economize them, create beauty out of them but also solve practical issues the clothe user would have: for example, to take care of the garment, not to create waste or unnecessary waste during clothe production, etc.

In other words, traditional economy has been under elimination process, while the culture it had been creating was promoted as "traditional civilisation". Is there any traditional civilisation without its economy? Is it possible that any culture created within a certain (socio-)economic setting is reproduced "as it was" in another economic setting than the one which created that same culture?

The distance from institutionalising tradition towards commodifying it is not long (no doubt, the modern "traditional costumes" are made out of massively produced materials and usually they are also massively produced themselves). The economy which has produced the culture is inexistent (at least for central authorities) and the centrally "planned" tradition is produced just like any other stuff in a modern economy: in a capitalist way, to be consumed in a capitalist manner, far from educating people to or from becoming the way/the proposal of life that it was.

At this crucial point there come the schemes studied within the research framework to represent a completely different view (or different views) of peasantry, of countryside civi-

⁵ It might seem absurd, but concerning societies like the Greek one, or at least, like the communities of people who lived in the southern Balkan peninsula (which today is the area of the Greek state), both Engels and Marx have expressed a really "bourgeois" and "orientalist" attitude. No matter how they tried to face the bourgeois ideologies and social structures within the societies they themselves lived in; when it came to the people living in the Balkans, they uncritically thought of the latter in the same way as their contemporary bourgeois thinkers did. The idea that the urban-bourgeois western civilisation is anyway superior to the cultures and civilisations of the people who lived in the Balkans was explicitly expressed in their writings. See Engels & Marx 1985: 95-96, 353, 383-384, 387, 439, 448-452, 457, 465, 473. I am grateful to Dr Efthymia Kanner (Dept. of Turkish & Contemporary Asian Studies, Univ. of Athens) as she vastly contributed to this comment by discussing on 21-3-2011 about Marx and Engels' views concerning the Eastern Question.

sation and of urban culture, but also of the economy that those views presuppose as the material expression of this same culture. As a consequence, economics is challenged by scheme members' activity, because at least mainstream economic ideologies and theories are all based on this internal colonisation idea to be necessary for "progress".

2.4. The Idea That 'Small Is Beautiful' But Inefficient

Small production is typical in rural and urban communities and it has been typical in Greece till nowadays. Sole producers and practitioners are or have been the rule for Greek economy, even the last decades, even in big urban centres, which are considered to be the most capitalism-integrated of the entire history of the country. This does not mean that small producers do not face severe competition by big producers, mostly companies; quite the opposite.

However, it seems that once a person has a chance to try the small production mode, that person will try to survive under this choice instead of succumbing immediately to the "big players" of the economy. It is obvious that multiple currencies and non-monetary transactions favour small producers and their produce, as producers can find a "market" where the throat-cut prices of the big companies have no meaning at all. Therefore, by changing the transaction mode, small producers acquire an economic advantage that within a big, "national", economy with a hard-to-find single currency, cannot have (Lietaer 2010: 19). Small production is not favoured by the banking system and it is not either favoured in terms of taxation, lobbying power, etc.

However, small production seems to be much more sustainable than "big" production, not only in economic terms but also in terms of its environmental impact and of better quality of life for poor people. This is not only stated by E.F. Schumacher (1974) but also by Taussig (2010: 41-92, 112-139, 155-159, 214-232), who conducted field research in Latin America for many years and could compare the results for people and for the environment of both capitalist production (large) and traditional production (small) in both agricultural and mineral-extraction sectors.

One would point out that "then, small producers are creating serious problems to the economy, if they avoid competition by the use of transaction mechanisms beyond the official currency". It seems, though, that this argument is not founded on evidence. If the hypothesis that small production is more efficient and/or resilient than the mass production mode (Taussig 2010: 83-92), then one could better wonder whether "big players" play efficient and receive profits at the expense of small producers of their sector. In other words, it is possible that big producers can have profits as long as there are small producers drained from their efficient results throughout a mainstream market unfavourable to the small producers. As long as small producers are economically or financially destroyed and led out of the mainstream market, then big companies might also have serious problems, as at this case, they are "on their own" (Goerner et al. 2009b: 78-80).

Therefore, the entire perception about the deficient or counter-competitive nature of small production is an ideology that assists large companies to demand for assistance in any case, even in times when a crisis proves them to be not efficient at all. In that sense, small production finds shelter in multiple transaction modes, because it is obvious that small producers do not care to fight against big companies but they do care to survive (it is another story if on the other side of the... marketplace, it is big companies or the national-economy idea that they have to negotiate with).

2.5. The 'Dark Otherness' of Peasant Economies and the 'Freedom That Money Gives'

One more idea which is very common in economic literature, is how our monetary system is a system of freedom for all, given that money gives freedom of choice to anyone who holds it and wants to spend it. The contrast is made with peasant economies, which are stigmatised as feudal or semi-feudal or, even if a community has no feudal structure, with all problems an economy might have: inequality, exploitation, women's suppression, superstition, enmity towards new ideas, prevention of a person to get rich out of his/her own inventions, etc. This idea is deeply connected with the disdain toward the traditional-old ways of transactions and the people who performed them. It is not a coincidence that a vast part of Simmel's *Philosophy of Money* is dedicated to this view (Simmel 1978-2009: 283-428).

Therefore, economic structures that are, at least theoretically, associated with peasant economies, like barter or the multiplicity of transaction mechanisms, are considered to be tools of all this unfairness and injustice. Of course, no-one has ever said - and I am far from believing - that a peasant economy might be an ideal one or that barter might be itself the path to fairness and justice. However, I am also far from accepting the assumption that one mode of transaction is completely "bad" and another mode of transaction is inherently "good". Quite the opposite: money following certain rules and within certain social setting might be a tool for redistribution in favour of the lower income groups or it might be redistributing income from the poor to the rich. The same holds for non-monetary structures: they might embed in economy several hierarchical and exploitative practices or they might deliver to their users, especially those with lower incomes, chances for improving their living conditions in both economic and social terms.

Therefore, our inability to see multiple currency systems and non-monetary transactions as possible positive political-economic tools, stems from our idea that a monetary economy with one currency only is the best social option, especially compared to other economies where a variety of exchange mechanisms exists. However, even if a monetary economy with one currency only has been under certain circumstances the best social option, this might change through time and space and according to the change of circumstances - which means that if nowadays

this social option is not the best anymore, we need to re-consider it as such.

2.6. The possibility that we see what we are ready to see

One would say, after the above, that it might be possible that all this activity in Greece without official currency has emerged because it became visible due to the new information and communication technologies. Schemes use new technologies to announce their gatherings and their activity (due to easiness and zero-cost of publicity) but also to make members communicate among themselves, discuss issues, make decisions, disseminate news, manage accounting, etc, without much effort and in a very open, public manner. Therefore, technology might be a reason for “making known-making material” these transaction modes.

However, the research has shown that there are groups in Greece which do not use internet or social media software that much. Or, even if they use new communication technologies, this use is rather limited; which raises again the question, whether technology just facilitates and does not create the economic activity we see through it (the technology). Therefore, material conditions which permit diffusion of information and facilitation of transactions might be important a feature but not the decisive one for the ability of the schemes to be visible but also for the ability of the observer or the researcher to “see” them.

Another possible explanation would be that material conditions (both economic and social) might be to... blame for this and not information-communication technology only. It might be that people in the society of Greece (or perhaps in other societies as well), are adapting rapidly to an all-changing economy. This rapid change is not a new thing. Mark Mazower (2002: 65-98, 214-218, 221-227) mentions this for the peasant communities of the Balkan peninsula who were facing monetisation and capitalisation of the economy in late 19th - early 20th century. However, he also mentions how rapid change in peasant economies coincided with rapid change in capitalist economy and how the former change was perceived as inexistent while the latter change was perceived as the real change at the same time, concerning economy and society.

Therefore, it is possible that nowadays, economic-social changes are making people, either scheme participants or non-participants, either academics or the (student) researcher herself “see” transaction modes which some years ago were believed to be inexistent. In other words, we “see” this economy of variety because we asked “does it exist?” instead of saying “it does not exist”, or because we thought “let’s re-examine our perceptions in economics” instead of “we have clarified our perceptions in economics”. Lietaer (2010) shows how discussion between the neo-liberal and marxist schools left beyond scrutiny the idea of monopoly of national currency.

The research does not cover but transaction modes; nevertheless, transaction modes cannot be separated from production modes. It is impossible to know details at this stage and within this research project about the production modes which are supporting-using-intertwining-with the transaction modes we study. There is, however, one main characteristic which can not be neglected: it seems that those transaction modes favour small production, as it has already been mentioned.

It is usual in economics to talk about small property production mode, meaning production methods chosen by people who own a small lot of land. Actually, small production seems very connected to the owning of small lots and to the agricultural production of small scale. However, research shows that small production does not exist only in this setting: transaction modes reveal that small scale agricultural production is just one aspect of production supported and undertaken through the schemes. There are people who live in cities and might own just the apartment they live in or they might have neither land nor real estate property rights at all. However, they still produce within the networks and might be also quite active in economic terms (although their skills and produce might not receive such warm reception within the mainstream economy).

Moreover⁶, the chance the scheme members have to share or give-away things among each other reduces the need for mass production of goods that can be easily shared within a network. It is possible that for most non-consumable goods (like clothes, particularly children clothes), people do not need to keep them all the time in their closets, cupboards and warehouses. Tools and small machines are circulating within the schemes just like books and clothes. In that sense, small production is enough for the scheme members, and on the other hand, small consumption is also enough for them, as they can cover their household needs through interchanges without needing hard-to-find extra income in official currency. In addition, one would assume that this support to small production would help heavily the environmental cause, already mentioned by most of the schemes, particularly the free networks and the groups who organize free bazaars.

Therefore, one more possibility exists: the phenomena studied might be not only one more adaptation of small property production modes (which of course is possible to be happening) but also an overall adaptation of small production modes in general, to new economic conditions. The urban setting, or the no-land-property setting proves to be a factor that does not prevent small production as such. It probably directs small production not only to small city agriculture or gardening, but also to a variety of sectors which economics had not paid attention to so far.

3. THE * HYPOTHESIS

There is no name or title for this hypothesis (yet). It might seem absurd to write this, after the previous pages of stat-

⁶ This idea and observation point is based on a comment by Stathis Stasinou.

ing one hypothesis after another, but it is impossible to gather them and represent them in just one phrase. I believe that it is too early to name it, given that it seems that our way of perceiving all the phenomena mentioned above but also the notions which concern them and we have been taught so far, do not permit us to construct a wording that would not limit us to the traps we try to escape from. Even this distinction between rural and urban centres or the categorisation of all countryside communities as rural and of all city communities as urban is a false one⁷, well stemming from the same mentalities and ideologies this paper tries to question. Let alone, that to give a name to this hypothesis right now would lead the researcher to make the same mistake as the one probably done by those who do not “see” transactions if the latter do not look like the ones described in books.

It seems that the schemes studied are the surface of an economy or economies which never ceased to exist, as both material spaces and experiences in people’s histories. They were, however, dismissed, disdained and even disreputed and the first texts that easily accepted this “I do not see for I do not want to see” attitude have been the academic ones, even if we would expect exactly the opposite from them. Particularly about economics, which claims to be the most “scientific” among social science disciplines, the inability to “see” was much more intense than in other disciplines (like anthropology or sociology) which, however, could not substitute economics, but only criticise its stance.

Finally, the entire discussion is not about naming the schemes studied as modern or old, pre-capitalistic or post-capitalistic, parallel or resisting to capitalist economy. It seems that if one gets into such type of discussion, then one is obliged to use the same analytical tools that prevented us from “discovering” this type of economy till the last years. Labelling is handy under certain conditions, but it is not useful if one searches to answer questions like the ones stated in this paper.

Therefore, we might need to view all this activity as coeval to the so-called capitalist (Hodgson 2001: 71-78) or monetary or conventional economy and as raising a different agenda for economics than what capitalist and anti-capitalist discourse can offer. This does not mean that I dismiss any conflictual feature or conflict element that this activity might have, not only toward the mainstream economy, but also among the people who participate in this activity. Using another transaction mode does not change the economic and social power of the scheme participants. It just gives them one more option to use that power within another setting.

It is not possible at this stage to know what this power might be and how this economic option turns people’s stance toward economy and their fellow members of the economy, both those who participate and those who do not participate in the schemes. It becomes evident, however, that the schemes enable their members, while transacting

without official currency, to challenge economics here and now, or... once more, if we accept the idea that this challenge has never ceased to exist, even if we have not much information about it.

INSTEAD OF CONCLUSIONS

It is probable that if I started my PhD programme today, I would design it to be completely different. Obviously, I would insist more on gathering findings concerning the “history” of the subject-matter. I mean with “history” the whole meaning of the word: research-knowledge-narration (Dimitrakos, D. 1936: 3478). It seems that transactions without official currency might have never stopped being part of the economic history of Greek society, no matter whether academic research has been done on them or not. To learn about this, it may be worthy of a future project on its own right.

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⁷ This questioning of “rural” and “urban” is based on a comment by Prof. Dina Vaiou (National Technical University of Athens).

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International Journal of Community Currency Research

Volume 16 (2012) Section D 80-90

SUSTAINABILITY OF THE ARGENTINE COMPLEMENTARY CURRENCY SYSTEMS: FOUR GOVERNANCE SYSTEMS

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ABSTRACT

The Redes de Trueque (RT) thrived during the economic crisis of 2001 in Argentina but fell sharply after 2002. Some networks, however, withstood the downfall better than others. These differences in the decline cannot be attributed to external factors, which were basically the same across the Trueque, but to the various governance systems that the leaders structured as the scheme grew in scale and sophistication. Following an institutionalist perspective, this article assesses the sustainability of the governance systems in the RT in relation to input legitimacy, rule enforcement, resource synergy and transaction and organisational costs. None of the governance systems structured in the Trueque in Argentina scored highly on the four accounts. The largest networks managed to be sustainable by resorting to a hierarchical structure that violates the principles of participation and self-reliance of complementary currency systems. In the other extreme, the smallest ones achieved sustainability but with a low economic impact.

ACKNOWLEDGEMENTS

Part of this study was funded by WOTRO/NWO, Grant WB 46-494. I wish to thank the insightful comments of the two referees and the participants who kindly gave their time and dedication to make this research possible.

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INTRODUCTION

The Argentine Complementary currency systems, the *Redes de Trueque* (RT) thrived during the 2000-2002 economic crisis. They fell apart shortly after the demise of the national economy and most of them disappeared, but some still survive and support the consumption of several thousand households up to 2010. The unequal rise and decline of the RTs, in spite of sharing the same context, origin and evolution, begs an explanation. Why were some of these complementary currency systems more resilient to the fall? What were their rules of governance and sustainability?

'Sustainability' is defined here as the durability or resilience of governance systems in which the rules of action and their compliance cannot be assumed a priori because none of the actors has the means to enforce them. Institutions are designed, legitimacy is constructed, compliance is obtained through voluntary decisions and negotiation. Similar governance problems are observed in situations in which regulation by the state is not possible, desirable or cost-effective and it is done by non-state groups, either within the private sector or civil society (Rosenau and Czempel 1992, Streeck and Schmitter 1985). In relation to the RT, sustainability refers to the resilience of the various networks to the general decline of the Trueque.

This paper will focus on their decline period around and after 2002 and how they relate to the general rules of governance and sustainability of non-state institutions. Since the question is not why they declines, but some of them declined less than the others, the study will discuss the conditions inside the governance systems of the Trueque and not at the context, which was basically the same for all of them. The research uses data gathered in two periods of fieldwork in Buenos Aires, Rosario and Mar del Plata, three major cities in Argentina. The first period was between May and December 2004 and the second in November and December 2006. Data was collected through interviews with the main leaders, who provided lists of the *Clubes de Trueque* (CTs) in their networks. A total of 44 CTs were visited across the three cities mentioned and combined a variety of conditions: large and small cities, wealthy and poor neighbourhoods, old and new CTs and so on. Eighteen CTs were then selected in relation to the geographical area, the relative poverty in each location, their number of participants and the RT network they linked to. A survey with a semi-structured questionnaire was conducted among participants in these CTs chosen at random while they queued to enter the marketplaces or after they had finished their trade. A total 386 responses were obtained, with samples of 15% of the participants in CTs with less than 50 members and 8-10% in those with more than 50 members. Such extensive coverage is a novelty in research on the Argentine RT.

The next section will categorise governance systems as institutional arrangements and discuss the characteristics that contribute to their sustainability. Section three describes the evolution of the *Redes de Trueque*, the Argentine complementary currency systems, and section four

focuses on their rapid but uneven fall. Section five analyses various aspects of governance and sustainability presented in the analytical framework.

FACTORS OF SUSTAINABILITY OF GOVERNANCE SYSTEMS

The concept of governance is used in different contexts and disciplines with some divergence of meaning, but it always implies giving up a top-down approach to ruling and including a multiplicity of actors in either the economy or the polity (Hirst 2000). It refers to a particular kind of governing: 'sustaining co-ordination and coherence among a wide variety of actors with different purposes and objectives such as political actors and institutions, corporate interests, civil society, and transnational governments' (Pierre and Peters 2000). It is conceived as a process combining negotiation, accommodation, cooperation and alliance formation rather than coercion, command and control.

One of its derived concepts is that of governance systems, which are defined in the economy as 'the totality of institutional arrangements –including rules and rule-making agents– that regulate transactions inside and across the boundaries of an economic system' (Hollingsworth et al. 1994). That is, a cluster of mechanisms for co-ordination of economic activities so that individual economic action may become predictable and stable. Related concepts are 'mode of regulation' coined by the French Regulation School (Boyer 1990, Jessop 1997, 2001), and 'models of social order' (Campbell et al. 1991, Streeck and Schmitter 1985).

How are institutions and organisations brought together in a governance system? A possible explanation stems from the principle of "reconstitutive upward causation" (Hodgson 2002, 2007) or "cumulative circular causation" (Berger and Elsner 2007), by which elements of a lower ontological level engage in a process of trial and error and create rather stable institutions that reflect what is feasible at each point in time. Bob Jessop adds that the process is not continuous but happens in phases related to the economic cycle (Jessop 1997). In periods of crisis and/or transition, actors seek to define new modes of regulation or governance systems through trial-and-error search processes that contain a considerable element of struggle and chaos. In periods of stability, the structural coherence of complex institutional forms prevails and confines economic action to the reproduction of the economic system. All in all, the evolution of institutions is pushed by factors such as political struggle, changes in social values and the search for improved efficiency, while stability is achieved when changes become consolidated in new institutions.

An early attempt to theorise on governance systems in which the state is not the central actor was made by Streeck and Schmitter, using the concept of social orders in their path-breaking book *Private Interest Government* (Streeck and Schmitter 1985: 11-15). They argued that governance systems are built around a 'central institution which embodies (and enforces) their respective and distinctive guiding principle' of coordination and conflict ar-

eas. They identified four social orders: community, market, bureaucracy and associations. They suggest that 'it might be more accurate to label them according to the principles that coordinate each: spontaneous solidarity, dispersed competition, hierarchical control and organisational concordance'. In a community, actors are interdependent, their preferences and choices are based on shared norms and jointly produce satisfaction; sustainability is tied to the satisfaction of mutual needs and keeping a collective identity. In an ideal market, actors are competitors and in principle independent. Entrepreneurs seek to maximise their profits, and by virtue of dispersed competition they share with consumers the material benefits of technical progress. There is a basic conflict of interest between sellers and buyers (supply and demand) which is reflected in prices. Sustainability is tied to the capacity of markets to clear in spite of the uncertainty and risks inherent in compliance and incomplete information. In a bureaucracy, actors are dependent upon hierarchical coordination and their choices are asymmetrically predictable according to the structure of legitimate authority. Allocation decisions are made by hierarchical centres and carried out by agents rewarded by career advancement and stability. Sustainability is tied to the effective capacity to control action via hierarchy. In an associational order, actors are contingently interdependent: the actions organised collectively can have a predictable effect on the satisfaction of others, which induces them to search for stable pacts. Collective actors are defined by a common purpose to defend and promote functionally-defined interests and mutually recognise the status of competitor organisations. Sustainability is tied to preventing fragmentation into rival communities, competing for resources and securing compliance from members.

This four-type taxonomy was based on ideal types of governance systems that are rarely present in reality. For example, a market regulated by a public or private regulator is still a market but it has elements of hierarchical control, so it is not driven by dispersed competition alone. Hollingsworth and Boyer later presented a more flexible categorisation of governance systems, based on two criteria: the action motive (what disposes individuals to behave in a certain way) and the coordination mode (how their economic actions are made compatible with each other) (Hollingsworth and Boyer 1997). This framework allows identification of several subtypes of market systems, for example, according to their mix of institutions: competitive, cartelised, state-regulated and cooperative markets embedded in long-term relations. The market as a multilateral setting for exchange is still the core of these governance systems, but non-core institutions matter, too. Self-interested behaviour is more or less typical of all markets, but coordination at a social level is also achieved through state coercion and civil society organisations. Hence, the strong dichotomy of hierarchies versus markets loses appeal, as markets are ensembles of institutions.

The categorisation of governance system proposed by Hollingsworth and Boyer (1997) offers an entry-point to analyse what factors make various governance systems

sustainable. This question is critical in systems in which rules have to be created and enforced by actors without the monopoly over means of violence as the state. Referring to regulation regimes, Jessop (Jessop 1997) claims that their life expectancy (sustainability) is given by the compatibility (coherence) of their mediation mechanisms (institutions). Boyer and Hollingsworth (*ibid*) follow a similar path and assert that governance systems are 'viable' as long as the set of institutions that form them are coherent or "compatible" with each other. However, how is this coherence constructed and how can it be observed?

A few issues, which are directly or indirectly related to non-state actors' setting of rules, stand out as critical to the durability of governance systems. The first dimension is the acceptance or legitimacy of rules (Van Kersbergen and Van Waarden 2004). The concept of legitimacy is further categorised as input and output legitimacy (Scharpf 1999, Thomassen and Schmitt 1999). By input legitimacy, the authors mean the process by which rules have come about and account for provisions to modify them in the future. It represents an *ex-ante* analysis; input legitimacy is created along the process of rule definition. It may involve shared values and idealism. On the other hand, output legitimacy represents an *ex-post* generation of legitimacy based on the 'success' of the governance systems: the capacity to deliver results, solve problems and resolve conflicts.

The second dimension sees actual behaviour. Policing functions are problematic because the *ex-ante* acceptance of rules does not mean *ex-post* compliance. The latter is an actual event, the real behaviour of agents, while the former is a disposition to act. Actual compliance is achieved by monitoring and enforcing rules even against resistance from agents (Ronit and Schneider 1999).

Thirdly, the benefits delivered by governance systems are evaluated in relation to the costs for the actors involved. The capacity to deliver results, solve problems and resolve conflicts within the economy means achieving 'resource synergy' (Jessop 1998) or building the ability to coordinate material interdependencies among internal and external agents, which is especially critical when resources are scarce (Cashore 2002).

On the other side of the ledger, there are the costs of running the system, generally referred to as transaction costs. In a system where the state is not available as a low-cost rule-maker, these are mainly of two types. First, the costs associated with uncertainties, risks and information asymmetries (Williamson 1975). Second, there are the costs of sustaining collective action, setting rules, making decisions, and redefining objectives when necessary; these are organisational costs. While these are costs, the process of organising and making rules supports the construction of a common identity that are captured under input legitimacy (first item). These four factors will thus be analysed in the context of the *Redes de Trueque*.

THE DECLINE OF THE RT

The first seed of the *Redes de Trueque* started in 1995, as one of the income-generation schemes that were launched in reaction to the neoliberal structural reforms of the nineties. It quickly appealed to the unemployed and disenfranchised middle class, who were attracted to a scheme that entailed producing goods at home and selling them to neighbours in one of the nearby marketplaces. It allowed them to make a complementary income with which they could, at least partially, protect or improve their lifestyle.

The marketplaces grew in scale and number, and by 2002 they had multiplied in every neighbourhood across the country and incorporated other segments of society, mainly the structural poor. Their offers expanded equally rapidly until there were hardly any goods or services that could not be obtained with the various complementary currencies used in the *Redes de Trueque*. Each individual marketplace and its community of producers-traders was called a *Club de Trueque* (CT) and with other CTs they formed networks (*redes*) that operated at the local, regional and national level. Each network used a currency and defined its own rules of conduct and standards of monetary regulation. The RTs functioned as circuits of economic activity in which their governance depended entirely on its members and there was barely any government intervention or legal protection. For a while the main networks were articulated under a single umbrella organisation in which common rules were agreed on, but this broke up in 2002.

The CTs got a definite boost with the crisis of 1998 – 2002, when they allowed an estimated 2.5 million households to trade in about 5.000 marketplaces (Ovalles 2002). Evidently, they had to build governance systems from below that would transcend the community level, but like other institutions stemming from civil society or the private sector, this was problematic. The organisers tried to find functional equivalents to the state as regulators of economic activity but limited resources and capacities, they mostly failed. At the peak of their scale the RT began to crumble, barely months before the regular economy began its recovery.

In the period of 2000-2002, all the networks shared similar challenges and in many of the thousands of nodes with thousands of members across Argentina the situation looked like sheer anarchy (Abramovich, 2003; Gonzalez Bombal, 2002). Squeezed by the economic crisis, the structural poor kept pouring into the nodes with barely anything to offer and desperate to meet their basic needs. The *Trueque* was not really a solution to poverty, as Leoni found when she studied nodes dominated by the structural poor (Leoni 2003). The author described it as the 'dictatorship of homogeneity'. The services most frequently offered were cleaning and gardening, for which there was no demand. Services such as electrical and plumbing work were in demand and some had the skills but no pesos to buy parts. The offer of basic necessities like food was insufficient for all who wanted them.

An underlying class conflict then appeared in most nodes. The scheme was initially made popular by the unemployed and disenfranchised middle class, for whom the *Trueque* was a good way of getting some value for their small-scale production, goods made as hobbies (paintings, knits, hand-made dolls) or those accumulated in better times (toys, suitcases, small furniture). Many had a small amount of working capital to buy inputs in pesos, which they either resold or processed into products for sale in the nodes. Others just resold food products bought in supermarkets with pesos, which violated the principle of presumption but was tolerated because there was dire need of them in the nodes. In contrast, the structural poor joined the *Trueque* later, pushed by the crisis. They had no accumulated assets, no income in pesos and no working capital. What they could sell in the nodes was their own labour and second-hand goods such as clothes, shoes and toys that came from charities and donations.

Large-scale CT were the sites of many abuses, among them by the coordinators who were supposed to organise them, as was also found by Peter North (North 2005; 2007) and Susana Hintze (Hintze, 2003). Excess demand for basic food products gave rise to inflation. When prices were too high, coordinators advised members to refrain from buying. However, people needed the products desperately and the nodes became fertile ground for speculation and exploitation of those who had no pesos by those who did. That often meant exploiting the structural poor, who had less choice. In addition, excessive issuance of complementary currency rekindled inflation. The *créditos* were used to pay for all sorts of expenses: wages to the *Trueque* employees, gifts to friends and local politicians, self-awarded wages of coordinators, cleaning and maintenance of the market venues, and refurbishment of buildings. The final blow was large-scale forgery of the *créditos* in the second quarter of 2002 (North, 2005). It will perhaps never be known who was responsible for the forgery and the suspects range from normal criminal gangs to political brokers. Participants in a group interview arranged in Billinghamurst, a western suburb of Buenos Aires, recalled in August 2004:

You could see people selling packs of forged vouchers near the entrance of almost every large node. You could even buy them in the nearby kiosks. We wondered many times who has the capacity to do that. Printing costs money and these criminals must be making money. For me, the politicians were behind it because they didn't like the *Trueque*.

Whatever the origin, members soon found out that it was easier to buy a pack of forged *créditos* than to produce goods to obtain them. The sharp inflation that resulted can be seen in the price of a litre of cooking oil in a node, which rose from one *crédito* in December 2001 to 3,500 *créditos* in December 2002. In October 2002, the RGT, the largest network in number of members, estimated that ninety per cent of the circulating notes were counterfeit (Clarín, 17 October 2002). They then implemented a plan to collect all

the créditos in circulation and weed out the fake ones. The scheme was too burdensome for coordinators, many of whom got fed up, split from the network or closed their CT. The governance system did not have sufficient resources and provisions to enforce such control over the money and its failure damaged the credibility of the system as a whole (Gonzalez Bombal, 2002, 2006; Hintze, 2003).

Two additional factors contributed to the collapse. First, in May 2002 the government decided to implement a welfare policy giving 150 pesos to each unemployed head of household with children at school. The government grant did not immediately cause a steep fall in the number of members but reduced membership over the medium term (Hintze, 2003). The second factor was the recovery of the regular economy after 2003, when many of the Trueque members could gradually return to regular employment.

By the middle of 2002 all the RT networks started a sharp decline in terms of participants. Of the 5,000 nodes in April 2002, it was estimated that half were closed by December 2002 and only 1,000 were still open by July 2003; around 300, barely ten per cent of the number in its heyday, were operating in December 2006. The Trueque in general became a corrupt “ugly duckling” nobody wanted to be involved with.

A coordinator in the city of Mar del Plata said in an interview in November 2004:

The sequence was as follows. In the beginning, you met your neighbour in the street and she asked you where you were going. ‘To the node’, you’d answer. And ‘what is that?’ she’d ask. Later she’d ask which one you attended and what that one was like. In the end she’d stare at you and would ask whether ‘that’ still existed.

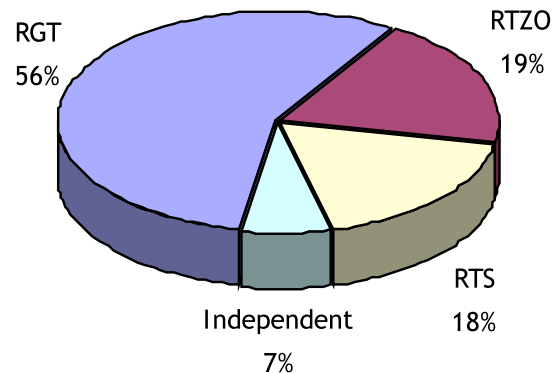
GOVERNANCE SYSTEMS OF THE RT NETWORKS

To some extent, the collapse of the Trueque could have been foreseen, given the explained facts of both the context and the RT themselves. Several authors have explained why the Trueque has declined, like Gómez (2009), Hintze (2005), North (2005, 2007, 2008), Pereyra (2006) and Saiag (2008). However, some groups and networks resisted the fall better than others and while some networks have almost disappeared, others continued to operate and even experienced some periods of recovery. These differences in their fates deserve an explanation, as they were all affected by similar problems but did not suffer the shrinkage equally.

Some sub-networks disappeared or declined sharply and at the time of the fieldwork for this study in late 2004, a total of 700 nodes were estimated to be operating. Follow-up fieldwork at the end of 2006 found that about half of them had disappeared, while others reached their nadir in 2004 and recovered after 2006. Four groups emerged out of the break up of the RT around the turn of 2001. An estimation

of their size is given in Figure 1. This study will argue that the explanation for this variation lies in the governance systems that each network had structured and not in the contextual factors, which were more or less the same for all of them.

Figure 1: Number of participants by sub-network, beginning of 2002



Note: Estimation by the author based on interviews with the leaders of the various Trueque groups. Percentages are calculated on 2.5 Million participants

The largest RT network was the Red Global de Trueque (RGT), led by the group that initiated the Trueque and extended across the entire country. It was the main one to be affected by the counterfeit créditos, the one to receive the most media and public exposure, and the first to fall apart. This caused a knock-on effect on other networks, too, because the majority of participants were unclear about the differences between networks beyond using a different currency. From the start it set a high priority on expanding the number of CTs using their complementary currency and designed a system of “social franchise” to facilitate this expansion. Through this method, any individual or group interested in opening a CT could contact the RGT, get the necessary information brochures and buy the desired amount of vouchers for a few pesos. After that, there was hardly any subsequent control or communication between the RGT leaders and the nodes, so the RGT relied on spontaneous coordination. There was no strict control structure across the network, only basic ground rules that operated as voluntary guidelines. Participants within and across CTs would coordinate primarily via price mechanisms, like any market system, although embedded in a specific social setting. In the dimensional categorisation of Hollingsworth and Boyer (1998), the RGT roughly corresponds to a regulated market governance, with atomistic and spontaneous coordination between participants and clubs and self-interested behaviour as broadly accepted action motive. The second largest network was the Red de Trueque Solidario (RTS), which operated mainly as an umbrella association of regional and local networks. Each region had its

own complementary currency system, identified with common logo. A watch-dog of the principles of reciprocity and solidarity, it advocated for an alternative economic system based on self-reliance and face-to-face relations at the local level. As a matter of principle, it was a staunch enemy of the RGT and its "social franchise". It implemented a system of training (*capacitación*) to initiate new members to the system and the principles of solidarity, which was gradually abandoned as RTS grew beyond its capacities to train new members. So it was arranged along the lines of an associational model, with multiple CTs converging into a decision-making / negotiation forum that coordinated. When the Trueque declined, the sub-networks that formed the RTS continued independently and the RTS disappeared as umbrella organisation. Self-interest as a behavioural principle was constrained by the bonds of reciprocity the RTS promoted through its permanent training mechanism, while peer control was expected to sustain solidarity.

The third largest network was the Red de Trueque Zona Oeste (ZO), organised and managed by former entrepreneur Fernando Sampayo. It was also a regional sub-network covering the densely populated and impoverished western suburbs of Buenos Aires. Although it suffered the decline of the Trueque, it fell the least of all the networks in the RT. It had a similar system to the "social franchise" to expand its number of CTs, but there was a relatively tight control structure over its franchisee nodes. Members contributed a small amount to a collective fund in pesos to finance the costs of the ZO and the development of social enterprises that supplied food into the nodes. The plan of building a supply chain of social enterprises to supply the nodes was never fully accomplished and was interrupted by the decline of the Trueque. The CTs worked as markets coordinated by price-mechanisms but the supply of some food products was centrally organised, planned and delivered. The ZO was a loose hierarchy in which there was one main centre for decision-making, rule-setting and enforcement for the network: its leader, Fernando Sampayo.

There was also an undetermined number of CTs that have always been or became independent from the networks after the decline. They traded using their own vouchers and had no contact with other nodes. They typically operated as closed groups such as schools, churches or cultural groups. They roughly correspond to the model of communities or clubs, closely reliant on relations of reciprocity and obligation to abide by the rules, typical of small communities. There were no standard organisational structures for coordination. For example, *Comunidades Solidarias* was started by a group of parents in a community school for mentally handicapped children. Another group, the *Grupo Poriahju*, was organized by teachers who, inspired by Paulo Freire, started a self-help group in a slum with a library, a civic centre and a cooperative for scavenging and recycling waste. By the end of the nineties they launched a CT because they saw its potential for generating an income for the poor. All decisions were taken collectively by a committee. A different example was that of *Feria Rouchon*, located in a slum that suffers flooding during rain. Between 200 to

300 people participated in the market every day, trading with the left-over vouchers of any network, currently in bad shape. They had no organisers; coordination was purely spontaneously. Decisions such as the schedule were made by consensus by those present.

SUSTAINABILITY IN THE TRUEQUE

This section analyses the governance systems of the Trueque in relation to the factors that make governance systems sustainable, which were highlighted above. The first one is input legitimacy: willingness of the actors to abide by the rules. It is assessed by the management of the currency systems, the mechanisms to replicate CTs, the handling of pesos, and the negotiation with other actors such as local governments. The second factor of sustainability is the set of mechanisms of rule compliance and enforcement, even against some resistance. In the RT, it meant having the means and capacities to monitor the behaviour of coordinators and participants and impose compliance at the level of the CTs. The third factor supporting sustainability is the benefit for agents based on achieving resource synergies, which in turn feeds into output legitimacy. In the period analysed, basic food products were the critical resource across all networks in the RT. The fourth factor supporting sustainability are the costs of running the system, like transaction and organisational costs of managing a non-state currency system and keeping the CTs articulated as a network.

The benchmark network of the Trueque was the Red Global de Trueque (RGT). The rules were set by the central leaders, but the willingness of members to comply with them was not really checked; it was just assumed that they agreed by virtue of their membership. In fact, during fieldwork the author established that most participants (as much as 90% in some CTs) had not read any rules or did not know they existed. The coordinators of the nodes were asked to report on their activities, but in practice none of those interviewed did and the reports were never requested. They only contacted the RGT leaders when they needed more créditos, for which they paid in pesos and often received by mail. The rules were thus poorly communicated and there was no provision to change them in ways that would generate legitimacy later. Rule compliance was assumed to happen by virtue of membership, rather than checked or promoted. It was expected that the coordinators would supervise and enforce rules of appropriate behaviour but, given the massive scale of the nodes, this was impossible. Moreover, some coordinators took advantage of the chaos and it became common practice to charge members significant amounts of pesos to enter the markets or, aggravating the scarcity of products, in exchange for créditos without the corresponding products on sale. Members paid them out of desperation and the RGT leaders were too overwhelmed with 5,000 daily applications to be able to control these abuses. The RGT leaders did not have the infrastructure, the means or the capacity to monitor what was happening in the CTs and there were no accepted institutions to impose compliance. In fact, the leaders did

not see compliance as their responsibility because 'the coordinators are accountable to the participants and not to us', one of the leaders argued in an interview in November 2004. However, most coordinators were not qualified or did not see it as their responsibility either.

In relation to creating resource synergies, in the RGT hardly any specific actions were taken to obtain more basic food products. With some exceptions, the actions to increase the supply of food products were left to the nodes to take. Some nodes established an entrance fee, using the pesos for pool-purchasing of basic foods, but these responses met a minimal fraction of the needs of the participants.

Transaction costs derive from trading with a non-state currency. The RGT promoted the use of a single currency across the entire RT to reduce the transaction costs for participants of having to use different currencies in the various networks. They never succeeded in this, but they had by far the largest network and their currency circulated across the country. While this helped participants to move across regions and networks with the same currency, it also made forgery more attractive and easy. So, while the intention was to reduce transaction costs, the practice of a single currency across the country increased its vulnerability significantly. Organisational costs were also intended to be minimised through the system of rapid multiplication of nodes. One or two persons instituting themselves as coordinators were normally enough to do it in less than a week. However, no long-term relations of mutual accountability were established in the process, as the RGT ignored that fact that the time spent in organising collective action represents an investment in the building of a common identity too. So, while organisational costs were indeed low, in the long run this loose structure made them very high.

In the framework presented above, the RGT represents an regulated market governance system based on individualistic action motive and loose coordination structures with top-down rules that were hardly ever enforced. The leaders assumed that coordinators and participants would act 'responsibly' under peer pressure, so they did not prepare a tighter coordination. The assumption of legitimacy without effective control capacities was a formula for disaster, which eventually happened. The RGT model was barely sustainable and this was particularly problematic because it was the largest network of the RT and the one by whose performance the general public judged the Trueque.

The second largest network in number of participants depicted a hierarchical governance system centred on the figure of a social entrepreneur as main decision-maker and was called Red de Trueque Zona Oeste (ZO). It used a similar system of rule-setting as the RGT but implemented it differently. Its leader defined the rules for the ZO and exercised strong leadership, which others accepted because of his skills and personality. 'He knows how to do it,' was repeatedly heard about him in several of the CTs visited in 2004 and 2006. From its early days the ZO invested in computerised databases and hired workers for data entry

to keep up-to-date membership records. No new member received fifty new créditos before being registered and checked. This bureaucratic structure was financed through a small membership fee. The autonomy of the nodes was limited to decide practical matters such as schedules; the rest was decided the social entrepreneur and his collaborators, a practice that apparently went unquestioned. Input legitimacy was far from participative and relied on the skillfulness and reputation of its leader.

In relation to supervision and enforcement of rules, the nodes of the ZO were kept more or less in check. The leader could not control over 400 coordinators but he showed up unannounced in CTs at random and started trading incognito. If he found the rules of the franchise being violated, coordinators were asked to explain the lapse. Participants were also allowed to file complaints against the coordinators and at the level of the nodes, the ZO advised coordinators to have a team of assistants to supervise and enforce the rules, expelling trespassers if necessary. A few cases were found in which this had actually occurred. All in all, enforcement of rules in the ZO corresponded to a traditional franchise system in its hierarchical implementation methods.

The hierarchical style of the ZO proved quite effective in achieving resource synergies, and in this respect the ZO built quite distinctive mechanisms. It structured a supply system of products negotiating deals with firms in exchange for services such as transportation, cleaning or a share of the production performed by participants. The ZO established collective factories and vegetable gardens with the labour of participants, who were rewarded accordingly. For instance, it organised a flour commodity chain: a mill would pay municipal tax arrears in flour, which the municipality would exchange with the ZO for maintenance of public spaces, or bread for schools, which would be baked by ZO participants in collective ZO bakeries; flour was sold in the nodes. For transportation, a team of ZO mechanics cannibalised several broken-down municipal trucks and assembled five trucks out of the parts. These were used to transport goods from one CT to another and the local governments received the use of ten hours of transportation a week as payment. With similar arrangements, the ZO obtained wood for furniture, land to plant fruits and vegetables, and warehouses to store goods.

The transaction costs of using a complementary currency were kept under control. The vouchers of the ZO were also forged but its leader's quick reaction was to replace the counterfeit ones as soon as they had become a threat. However, the cost of maintaining the hierarchical system of the ZO was high and had to be paid for a collective fund of individual contributions, so the ZO was successful as long as members financed the costs.

To sum up, the ZO created legitimacy based on charismatic leadership, had a fair enforcement of rules, remarkable resource synergies and manageable transaction costs. It structured a hierarchy centred on a social entrepreneur, whose reputation and skills were known. These arrange-

ments constructed a sustainable governance system, but they are blatantly inconsistent with the promotion of community participation and self-reliance promoted by most CCS around the world.

The third type of governance system in the Trueque was that represented by the Red de Trueque Solidario (RTS). It included the wealthiest, most ideologically minded and best-educated participants. Unlike the RTS and the ZO, the legitimacy of central institutions resulted from the participatory process of rule definition. Rules resulted from lengthy discussions to build consensus, after which they were transmitted downwards to the nodes. These were autonomous and local, but exchanging goods with others was encouraged. Each CT could use its own or its region's currency, provided that statements on its issuance and distribution were controlled collectively in the network's monthly meetings. Negotiations with local governments were left to the regional sub-networks and nodes. As a result of the process of rule definition itself, input legitimacy was high.

In the RTS, autonomy of the clubs was jealously guarded and accountability of coordinators to members and peer control were seen as sufficient to guarantee rule compliance. A regional leader assured the author in October 2004: 'The Trueque belongs to the people and it is up to them to keep it under control. That is how it works: local, democratic, and transparent'. In practice, peer control was not obvious and supervision relied mostly on the coordinators, who complained in September 2004 that rule enforcement fell on them and that participants 'often do not behave responsibly with us or each other'. Some coordinators took their supervision roles flexibly and their CTs looked as chaotic as the ones of the RGT. Thus the enforcement of rules in the RTS was variable and idiosyncratic.

In terms of resource synergies, the official position in the RTS was that coordinators should arrange with members the actions to increase the supply of food products. Some CTs asked for a contribution in pesos so they could buy from wholesalers, later giving purchasing priority to those that manufactured foods for the CT with those ingredients, but again the results varied. Where coordinators took up the task of pooling purchases, it worked fairly well. In other cases, it came to nothing. Some also tried to trade basic food products with local governments, as the ZO did, with varied degrees of success. The achievement of resource synergies in the RTS thus depended on specific coordinators and their strategies, but did not appear significantly higher than in the RGT.

The reduction of transaction costs related to using various regional and local currencies were the origin of a system of checks-and-balances in which all nodes inspected the currencies of the others. This required monthly meetings that made the means of payment reliable and their printing transparent. However, cross-checks entailed organisational costs that eventually proved burdensome in terms of time and money and too slow when responses to the crisis were needed.

To wrap up, the strongest network in ideological terms was the RTS and could be described as an associational model in the framework of Hollingsworth and Boyer (1998). It was more sustainable than the RGT because it had high input legitimacy based on participatory rule-setting, fair enforcement and low transaction costs. However, it had minimal mechanisms to achieve resource synergies and organisational costs were high. It was particularly weak in its voluntaristic reliance on the goodwill of coordinators, whose capacities were not always sufficient. Besides, the mechanisms for decision-making and checks-and-balances were sometimes distracted by political intrigues, with factions often fighting each other. While ideological affinity kept it together during its construction, it blocked the capacity to respond quickly to the demise of the Trueque. It eventually died, mired in negotiation and discussion.

The fourth governance system in the Trueque was the community or club model. It was represented by a large and undetermined number of local and independent nodes across the country. They were based on small closed communities, in which joining the CT amounted to sharing an agreement with the rules made in common. The organisers often made an effort to make the definition of rules participatory and democratic, as it was usually a population in which members knew and trusted each other from before. Divergent opinions and interests were probably accommodated, but whether the interests of the majority prevailed should be assessed case by case. Rule enforcement was easier in the local CTs because of their smaller scale and pre-existent ties among members, as argued by North (2005). Coordinators and members alike were part of a community beyond the node, so peer pressure kept members in check. This was especially clear in the poorest neighbourhoods, where shared poverty glued participants together. 'We all need to make the most of our exchanges in the CT but when the market is done we need to go back to the same slum together. And anyway, we are all poor, what can we squeeze out of each other?' a participant in El Campito in Rosario said in November 2004.

Due to their small scale, local nodes had scarce resources for achievement of synergies. Relatively less products were traded and the overall economic benefit on participants' lives was weaker than in the large-scale nodes of the other networks. They tried to increase their resource synergies and they sometimes obtained donations from various sources. Pooling purchases was also tried, as were raffles. In Comunidades Solidarias, for example, members ran a grocery shop in the school and opened every afternoon to sell goods bought with a common pool of funds and sold for pesos and créditos. Local and independent nodes were well organised and ruled by reciprocity but they were not as large as the nodes of the RGT, for instance, which many participants preferred because they could find most basic necessities on offer in spite of the chaos. The relatively low economic benefits to participants, except where local governments supported them, were the main weakness of local nodes while their peaceful atmosphere was their strength.

In the local nodes, transaction costs of using non-state means of payment was not really a problem and most participants understood the complementary currency as a system of mutual credit, which was also observed by Saiag (2008). 'You can only remember a certain amount of persons that owe you or to whom you owe things, so when there are vouchers to pay, it is much easier to exchange', a participant in Feria Rouchon explained in August 2004. Making decisions was relatively easy and costless, given the reduced scale of the groups and the fact that most members knew each other from before.

In short, the governance system of the local and independent nodes seems more sustainable than the other three and is how community currency systems around the world are typically organised. It ranks high in rule legitimacy and their enforcement and low in transaction and organisational costs. Its Achilles heel lay in the lack of resources with which to achieve synergies and create an income, though perhaps still significant in terms of poverty alleviation. Some local nodes were able to ease shortages by involving local governments and donors to support the scheme, then becoming a sustainable option to combine the participation in a social network with income generation.

CONCLUSION

The leaders across the Trueque tried to combine their perceptions of the motivation of their participants and the coordination structures organise governance systems bottom-up. That is, define the institutions to coordinate and regulate economic action within their large-scale networks. To various extents, all the RT networks had insufficiently developed supply chains, which led to scarcity, inflation and eventually chaos among thousands of members trying to satisfy their basic needs. The Trueque declined, further depressed by the recovery of the regular economy from the worst crisis in its history. However, some networks were more successful than others in structuring sustainable governance systems and did not lose as many nodes, coordinators, and participants.

A comparison of the four types of governance systems that emerged in the second half of 2001 is compiled in Table 1 below. In the first three rows, higher rating expresses more sustainable systems. In the last two rows, lower ratings indicate higher sustainability. At the risk of oversimplify-

ing, the table shows that all the networks had some weaknesses in terms of the sustainability of their governance systems. More importantly, it highlights the trade-offs in each type of governance systems for CCS.

On a national, large scale, there seems to be no sustainable governance system for a CCS. After all, that is what the state is, not just an actor that has monopoly over means of violence but also the bureaucracy that spreads all over a territory to regulate the economy with an acceptable level of legitimacy. The analysis showed that a hierarchy worked best at a large scale (a region) but it needed a skilful leader at the top capable of building the infrastructure and sustaining legitimacy and resource synergies so that members would finance it. On an intermediate scale, an associational governance system was sustainable as long as the commonalities were clear enough to continue negotiation and avoid tearing the network apart through internal politics. On a small scale, independent local groups appeared to be a sustainable option but they need to increase their resource base from other sources. When that was achieved, they constituted the leading case for CCS.

The combinations of strengths and weaknesses in terms of governance and sustainability of CCS provokes further reflections. The RT had grown to a scale that by 2001 resembled a parallel state, containing one third of the economically active population. The volume of trade, number of CTs and amount of participants demanded a system of governance that was beyond the logic of small groups and local communities that characterise civil society initiatives in general and CCSs around the world in particular. An economic system of the scale of the RGT or the ZO requires a functional equivalent of the state that did not really exist - there is no functional equivalent of the state because a state accepts no substitutes, by definition. If a large scale is a goal of a CCS, this comes at the expense of participation and self-reliance. In the other extreme of the local and independent CTs, the resource synergies were too low to reach a significant economic impact. Many CCS around the world share the characteristics of this governance system within the Trueque, as well as the criticism expressed by some researchers on their limited scope (Aldridge, 2002). However, they gain sustainability on account on their input legitimacy, rule enforcement and low transaction and organisational costs. North (2005) discusses the problems of

Table 1. Sustainability of governance systems in the Trueque, 2002

	RGT	ZO	RTS	LOCAL
Input legitimacy	Low	Fair	High	High
Rule enforcement	Low	Fair	Fair	High
Resource synergies	High	High	High	High
Transaction costs	High	High	High	High
Organisational costs	High	Fair	High	High

Notes: RGT = Red Global de Trueque; ZO = Red de Trueque Zona Oeste; RTS = Red de Trueque Solidario.

scale in alternative economic practices and reaches similar conclusions in a comparison with LETS schemes in the UK. Governance systems built with no state participation, therefore, may not grow beyond certain limits if they want to preserve their essence as alternative economic spaces.

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International Journal of Community Currency Research

Volume 16 (2012) Section D 91-96

MORAL MONEY - THE ACTION GUIDING IMPACT OF COMPLEMENTARY CURRENCIES: A CASE STUDY AT THE CHIEMGAUER REGIONAL MONEY

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ABSTRACT

This paper investigates a special form of a community currency, the German Regiogeld System, which is a private monetary system with a regional validity and a non-profit-agenda. The focus of the sociological study is on how this special money effects actions of consumers. After some general information to the Regiogeld system, it therefore describes why people use this limited and costly form of money at all, how exactly they use it and for what special patterns of usage they adopt the regional money as their own. As a result it can be demonstrated that money is evaluated concerning its functionality and its symbolism. Since Regiogeld attempts to be an efficient monetary system and a moral symbol at once, it develops a structural problem which restricts the Regiogeld' expansion.

ACKNOWLEDGEMENTS

This paper is a revised and partly extended version of the working paper "The German Regiogeld System and its handling in everyday life" presented at the International Conference on Community Currencies "Thirty years of community currencies – what next?" (February 16-17th, 2011, Lyon France). I thank the anonymous reviewers for their useful comments.

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INTRODUCTION

For 30 years now the phenomenon of complementary currencies (hereafter, CC) spreads around the world. This is quite remarkable considering the enormous efforts that were made since the 19th century to form money into a national and standardized legal tender (Zelizer 2000: 317). Nowadays with our globalized and interlinked economy, such small scale monetary experiments seem to be quite antiquated. But contrariwise CC's are potentially very modern, because – despite of all their differences – in their quintessence they are a reaction to current economic and social developments: A rapid social change destroys traditional social networks, a globalized economy causes unemployment, impoverishment and inequality in many places and the modern financial system is more and more hazardous and instable (Bourdieu et al. 1993; Beck 1999; Boris et al. 2000). Different social groups notice these problems and respond to them with the creation of special monies. Depending on their focus, different versions of CC's are generated: For example, Local-Exchange-and-Trading-Systems (LETS) want to offer a system of economic self-help and establish a “moral economy of paid favours” (Williams 2004). Time Banks try to encourage volunteerism (Seyfang 2002). Gold-backed currencies like the Liberty Dollar reflect scepticism about national fiat currency (Hayek 1977). Many other examples could be mentioned – after all there are thousands of different CC-Systems worldwide (Kennedy/Lietaer 2004: 73). They all have one thing in common: They want to solve economic, social or ecological problems by constructing currencies with special behaviour stimuli. In other words: CC want to program money. This intention is in some ways interesting: In a theoretical respect, because the use of money is said to be egoistic, calculative, profit-maximizing. Is it really possible to create “social”, “nonprofit” or “ecological” money? In an applied respect, because the CCs offer this alluring idea of having a new and simple behavior shaping tool. But what do they effect in practice and not on paper?

This study sets out to investigate these question, focusing on a special CC, the German Regiogeld (the German short form for regional money). First it provides some general information regarding the Regiogeld system. Then it illustrates how this special money actually works in daily life: It describes why people use this limited and costly form of money at all, how exactly they use it and what special patterns of usage the Regiogeld offers to them.

THE GERMAN REGIOGELD – DEFINITION AND FOREGOING CONSIDERATIONS

Regiogeld is a special form of a community currency. It occurred around 2001 and spread rapidly all over Germany. These unofficial tenders are called Ammerlehtaler, Bürgerblüte, Dreyecker, Elbtaler, Gwinner, Havelblüte, KannWas, Landmark, LechTaler, Nahgold, Roland, Stern-taler, TauberFranken or Zschopautaler. Regiogeld can be defined as a private monetary system with a regional validity and a non-profit-agenda which is accepted by multiple

participants. It usually occurs as voucher and is provided with a demurrage (negative interest). This constant loss in value (5-12 % per year) is either realized via certain tokens which have to be purchased and glued on the vouchers every 3 months or via the chargeable replacement of the vouchers every (3 up to 12) months. With these vouchers the consumers can purchase goods the businesses associated with the system. The payee can either use it for his/her shopping or give it to the Regiogeld organization and receive the value in Euro currency in return. For this re-exchange most Regiogeld organizations demand a fee of 5 to 10 %. Part of this covers their expenses and the rest is donated to community charities. With this special way of constructing a currency the Regiogeld pursues certain objectives: it wants to bind the regional purchasing power, strengthen the local economy, create more cooperation, increase sponsorship for non-profit-organizations, encourage the regional identity, help solidify social ties, reduce transport, enforce a sustainable and responsible consumers' behaviour and so on.

There is a socio-scientific interesting aspect behind those objectives: A lot of these things can be seen as commons. Commons are collectively owned and everybody can use and benefit from them. But if everybody takes as much as he can, the common good will be ultimately depleted. If everybody buys in the discount stores, the small inner-city shops – and with them good local amenities – will disappear. If nobody gets involved in social life, there will hardly any community activities. If nobody cares for the (local) environment, it will be messed up. For a long time economists thought this will happen inevitable, just because of the human self-interest. They called it the “tragedy of the commons” (Hardin 1968). But according to current research, commons can in fact be managed in due consideration of general public interest and sustainability (Ostrom 1990). Therefore the respective communities need appropriate rules. The regional money systems try to establish such rules with its construction (see below) in order to govern the mentioned regional commons. But does this work in practice?

COMPLEMENTARY CURRENCIES IN PRACTICE – A CASE STUDY

For this case study the most successful Regiogeld project in Germany, the Chiemgauer, has been chosen. Using qualitative social research methods, data has been collected with participant observations and narrative interviews. There has been discussion with consumers, businessmen and Chiemgauer-practitioners, with friends and foes. In the following the results are presented beginning with a short description of the Chiemgauer Regiogeld.

The Chiemgauer Regiogeld – a short introduction

The Chiemgauer Regiogeld is located in the southern part of Germany (Bavaria), in two administrative districts named Rosenheim and Traunstein. It is a quite well-off region: first due to its scenic beauties it attracts a lot of tourists, and second it has a solid economic structure with

several large firms (wood, chemical industry) and a lot of medium-sized businesses. Also it is still a quite traditional area with many functioning social networks. For sure these are determining factors for the success of this CC.

The Chiemgauer was founded by Christian Gelleri, an economy teacher at an anthroposophic school in the Bavarian village Prien. Since his adolescence he was interested in monetary theory, especially Freigeld-theorists like Silvio Gesell, Dieter Suhr or Rudolf Steiner. In 2002 he decided to test his concept of a regional Freigeld within a school project. In 2003 Gelleri and six students emitted 2,000 Chiemgauer (equivalent to Euro). Thanks to the dedication of the students' parents the Chiemgauer dispersed rapidly in the region (Gelleri 2009: 65). In 2009 over 1,800 consumers, 200 associations and almost 600 shops participated; circa 430,000 Chiemgauer are circulating and generating a transaction volume of over 4 million (Chiemgauer 2010).

Concerning its construction design the Chiemgauer is an euro-based Regiogeld-system. The consumer can change his Euros against Chiemgauer in several participating shops. Like other Regiogelds it has a constant loss in value: To keep the Chiemgauer valid, an owner has to purchase a certain token every 3 months and glue it on the voucher. The businessmen can also re-exchange the Chiemgauer to Euro, but they are charged a fee of 5% of the total value. A part of these revenues are donated to community charities according to the consumers wishes. For this, every consumer has to choose a social association like a sports club, an environmental organization or a kindergarten. Every time he "buys" Chiemgauer, his chosen association gets a donation in the amount of 3% of the changed money.

With this construction design, the Chiemgauer tries to achieve certain objectives like a multifaceted and efficient regional economy, vital social networks, cultural sponsorship or environment protection. The dilemma here is that everybody in the region benefits from that, but nobody has to get involved. This free-rider-problem applies to every public good (Helfrich 2009: 24; Ostrom 2009). Indeed psychological experiments have shown that a substantial share of all subjects are, for reasons of fairness and inequity aversion, willing to cooperate (Fehr/Gintis 2007), but they will only cooperate if they believe that others will cooperate too. However, if they notice over time that other group members – the self-regarding ones – free ride, then cooperation will typically converge to very low levels – individual self-interest largely dominates behaviour. Certain social structures can alter the situation. For example the possibility to punish non-cooperation creates an economic incentive for the self-regarding subjects to cooperate. As a consequence there will be a permanent high cooperation level. In short, different social structures generate completely different aggregate patterns of interaction. The Chiemgauer attempts to generate a specific altruistic behaviour via certain structural constraints: with its spatial limitation (you can only pay in the participating shops of the region) it obliges the people to spend their money regionally; with its temporal limitation (the demurrage) it makes them spend – and not hoard – their money; with its "charity-tax" it (indi-

rectly) creates donations. Before we examine how good this works, we first have to deal with one fundamental restriction – the Chiemgauer is not mandatory. This lacking commitment is a problem for every CC. No matter what objectives a CC-practitioner wants to achieve by constructing an appropriate monetary system – if he wants to provide poor people with money or encourage regional, ethical and/or ecological buying behaviour – in all cases he needs people who use the CC. Since the participation is voluntary, it is very important for every practitioner to understand why people use alternative money and why not. So, what are the reasons for using such a limited and therefore costly form of money at all?

Reasons for Chiemgauer-use

Due to the mentioned limitations one cannot explain the Chiemgauer-use with a rational, opportunity-optimizing attitude. However at second glance each of the involved groups have their own reasons:

The Chiemgauer-practitioners organize everything voluntarily which is a great deal of time and effort. Their main motivation is that they see themselves as a (backdoor) protest movement. They want to convince society of a better monetary system in practice.

The businessmen certainly have costs, namely the fees. But at the same time the Chiemgauer provides them with an advertising and marketing tool: they get publicity, a positive image and a competitive advantage. Not least the fees are tax-deductible.

For the consumers the automatic and gratis donation definitely is a certain incentive for using the Chiemgauer, but – compared with its constraints – a very weak one. Another explanation could be that the Chiemgauer-use is an expression of specific value orientations and world outlooks, e.g. like the ones in the post-materialistic milieu (Inglehart 1997). Here we find motives like autonomy, holistic life, self expression, fairness and ecology which are in line with the objectives of the Regiogeld. But the data indicates that a post-materialistic affiliation is not a sufficient explanation. The reason is that we find a lot Chiemgauer users who are very different regarding their value orientations e.g. some highly traditional and conservative middle-classes. Maybe we first have to take a look at how the consumers use the Chiemgauer before we can answer the question why the use it.

The Consumer: General Usage Pattern

In this interview-sample the following usage pattern has been found: Most consumers spend 100 – 400 Chiemgauer monthly, whereat they do the money exchange weekly or bi-weekly. They use this Chiemgauer-money predominantly in their habitual shopping-routines. So they go to their baker, butcher or beverage store and buy their convenience goods. Quite seldom they make special purchases like a computer, new glasses or services (e.g. handcrafter) – these require information where to buy them and sometimes efforts to get there. The readiness for this is quite

variable. This does not imply that the Chiemgauer is seen as mere housekeeping money. Rather it has a moral symbolism. This results on the one hand from its construction design, concretely from the “charity-tax” and the regionally limited use. On the other hand it results from the individual symbolic sacrifice you make when transforming your efficient and generally accepted Euros into limited Chiemgauer. And this will only make sense, if you have certain personal intentions (e.g. social, ethical, ecological ones). These intentions again give the Chiemgauer its symbolic meaning of a more or less “moral money”. And this is the key to understand why the consumers use the Chiemgauer: A “moral money” offers them possibilities which they don’t have with “normal money”.

The Consumer: Appropriated Usage Patterns

In everyday practice this “moral money” gains several qualitative different meanings and corresponding patterns of usages – depending on who uses it, where, in which social relation and with what intentions. One could say that the consumers adopt the Regiogeld as their own and therefore partly use it in ways nobody intended. Basically there are two different patterns – the regional money can be used (and seen) as a communication medium or as an instrument of power.

As a communication medium the Chiemgauer assists shopping. It simplifies (shopping-) decisions by attributing a moral quality to products and shops. A lot of people have ethical shopping demands. They want to avoid buying products which are based on ecological destruction, child labour or cruelty to animals. Given the variety of consumer products in our supermarkets this is not easy. Hardly anybody always knows which product belongs to which company or which of the various ecolabels you can trust. The Chiemgauer helps here as an additional quality criterion. The consumers think: Whoever accepts Chiemgauer has a special attitude, feels responsible for humanity, society and nature. Accordingly his goods also have to meet ethical criteria. Furthermore not only their shopping behaviour becomes morally but also themselves. The Chiemgauer adulates their consciences, it signalises “you’ve done a good deed”. This signalling effect also works towards others. Whenever they use Chiemgauer, they let others know their moral attitudes. This effect has two sides: It creates a relatedness with like-minded consumers in a kind of a symbolic community of “better” people and it distinguishes from the “niggard average citizen”. Also, in both cases the bizarre seeming regional money can provide a good topic of conversation in which they can address the necessity of a regional and ethical shopping behaviour. These aspects are also theoretically interesting, because economics and social sciences mostly define money as a symbol for mere purchasing power. The regional money however has a limited purchasing power but also a distinctive moral aspect. Due to this each payment process symbolises not only efficiency but also ethical values, a certain social standing and not least the dream of a better world.

On the other hand the regional money not only communicates a certain symbolism but also enables its users to exercise power. For example towards themselves: A lot of consumers use the Chiemgauer as a kind of shopping constraint which prevents them from shopping in “evil” discount stores. They are aware of their own slackness and snugness and therefore choose voluntarily the limitations of the regional money. This allows them to meet their demands on ethical shopping and charity quasi automatically. There’s a further aspect: Since the Chiemgauer “forces” everybody in such behaviour patterns, the users are concerned that as many other people as possible participate. Nobody wants to be the only person doing good – this contradicts deeply internalised beliefs of fairness and equality. For this reasons people who don’t participate are seen as free-riders. The users try to force them to participate by using the Chiemgauer as an instrument of power. Several Chiemgauer users reported that if a businessman doesn’t accept the Regiogeld, they won’t buy his goods and leave the shop. They repeat this until the businessmen surrenders. Many users also try to convert family, friends and acquaintances, but in a more subtle way. They give the Chiemgauer away as a present and thereby force the presentee to use it – because nobody will throw away money. Quite often this trick works and the presentees start using the Chiemgauer themselves constantly. From a theoretical perspective one thing becomes apparent: The regional money offers the possibility of slightly customizing economic system. “Normal money” provides you with generalized power – but only as long as you keep it. The minute you spend it, the power has gone. With Regiogeld you have waived a part of the power, instead you impose its limitations – and therefore a certain behaviour – on the following users. In view of of this interesting possibility the question arises what impact it has in reality.

Effects of Regiogeld Systems

So far the effects of regional monies on regional economy and social issues are quite weak. In the end the size of a regional money system determines its impact. The most successful Regiogeld, the Chiemgauer, has definitely some positive effects. A lot of small and medium-sized businesses benefits from the annual turnover of over 4 million Euro (2009); non-profit associations and social services have received more than 160,000 Euro; also the Chiemgauer has become a kind of “community symbol”. But from an overall view the effect is weak: From an economical perspective the business volume is negligible. Also the Chiemgauer doesn’t create communities. The group of participants didn’t become acquainted with each other because of the Chiemgauer – they already knew each other from several groups and activities (school, music, folklore). The Chiemgauer dispersed among such social networks, but not beyond. The other Regiogeld projects are even more disillusioning. In the majority of cases they are tiny i.e. a few believers spend some hundreds of Euros in a handful of shops. So the question arises, how a Regiogeld can become accepted.

Factors of Expansion

The data of this study indicates that people “interpret” regional money. In other words: They evaluate it concerning its functionality and its symbolism. Only if they evaluate the Regiogeld as adequate to themselves, they will use it.

Concerning the functionality the people especially evaluate the shopping infrastructure. Even though the Regiogeld is mainly used to buy everyday goods, there have to be enough shopping facilities. It won't make sense, if consumers only can purchase massages, health counselling or spiritual healing with their Regiogeld. Rather it must be possible for them to implement the Regiogeld into their everyday life shopping routines with very little effort. When people can use Regiogeld at their baker, their butcher or their greengrocer, when they get the Regiogeld where and how they want – than they will constantly use it. For the CC-practitioner this is a kind of chicken-and-egg-problem: A lot of the businessmen only participate when a substantial number of consumers use the Regiogeld and at the same time a lot of consumers only use Regiogeld when it is accepted in a substantial number of shops. The anonymous mass of consumers is hard to reach and the businessmen are often hard to convince. After all the building and maintenance of such an infrastructure is a question of capabilities. A regional money system is costly and demanding and a lot of practitioners are just overstrained with that. That's the reason the leader of the most successful Regiogeld project works full-time for it.

The symbolism of the Regiogeld results from the moral objectives (regionalism, ecology, social issues) that it represents. These are quite vague and so the Regiogeld can attract different types of persons. For example a conservative rural person might see the Chiemgauer as a down-to-earth way of protecting the own region. For a globalization critic the Chiemgauer might be an institution of resistance to neoliberalism. The tricky thing is that because of that vagueness (almost) everybody can find aspects which attracts them or distracts them. If the conservative commoner experiences the Regiogeld e.g. as a criticism of the prevailing monetary system, he will be less likely using it. So it is highly important how the CC-practitioners present their Regiogeld in public. There is a further aspect: A prospective user evaluates not only these (more or less moral) objectives, but also the idea to achieve them with a regional money. Hereby money and morality are in a constellation of tensions – as money the Regiogeld has to be practical and efficient; as moral medium it must not be too efficient and materialistic.

As a result of that we find a structural problem between functionality and symbolism: If the Chiemgauer claims to be “good” money, what about using it in “evil” stores? Especially the big discount chains are often accused of a profit-greedy business policy regardless of individual, social or ecological consequences. Many consumers declare that such shops wouldn't be appropriate to the Regiogeld. But where to draw the line? Is a local supermarket “evil” just because it's a big chain store? Are the small bicycle

retailer or the Third-World fair-trade shop “evil”, just because they purchase their merchandise from somewhere out of region? The increasing need for a comprehensible and reasonable demarcation goes along with the expansion of the Regiogeld-projects. So far the moral symbolism of the Regiogeld sets limits – it can not increase its functionality without endangering its moral image. One possible solution could be the participation of the local authority: if the regional money could be used for paying taxes, public dues or in community facilities, it could expand without losing its moral character. The reason for this is simply that disposal fees or swimming bath admissions are not in danger to be morally ambiguous, but at the same time enlarge the options where you can spend your regional money.

SUMMARY AND DISCUSSION

The article dealt with the question whether if it is possible to construct currencies with special behaviour stimuli. It focused on a special form of CC, the German Regiogeld System. A case study revealed that the consumers will use this limited form of money only if they interpret it as consistent with their individual attitudes and if its functionality meet their individual shopping demands. Once they use it, they attach a moral symbolism to the Regiogeld, because with its limitations it contradicts fundamentally a mere self-interested and opportunity-optimizing attitude. This “moral money” gains certain specifications. Depending on individual intentions, designated uses and social relations the Regiogeld can be a communication medium: it serves then as an individual moral affirmation, as a sign of a symbolic community of “better” people or as a hook for moral discussions. Or the Regiogeld can be an instrument of power: due to its constraints it forces you and others into a certain shopping behaviour. What do these results imply in a theoretical and applied respect?

In a theoretical respect they suggest, that the economic and sociological concept of money has to be amended. So far money is often seen as a rational, one-dimensional, homogeneous medium of economic activity. It is free from any quality and exclusively determined by quantity. Money is „colourless“, as Georg Simmel said (Simmel 1989: 80). All qualitative distinctions between goods were equally convertible into an arithmetically calculable “system of numbers”. This “uncompromising objectivity” allowed money to function as a “technically perfect” medium of modern economic exchange free from subjective restrictions, indifferent to “particular interest, origins, or relations”. The very essence of money, claimed Simmel, was its “unconditional interchangeability, the internal uniformity that makes each piece exchangeable for another”. Money according to this conception, also replaces personal bonds with calculative instrumental ties, corrupting cultural meanings with materialist concerns. Indeed, from Karl Marx to Jürgen Habermas, from Georg Simmel to Niklas Luhmann this view is widespread. But money isn't uniform. First, at each step in money's advance, people have reshaped their commercial transactions, introducing new distinctions, earmarked money in ways that baffle market theorists (Zelizer 1994).

We find manifold qualitative different meanings of money such as tips and salary, alimonies and bribes, housekeeping allowances and vacation money, honest dollars and dirty money. Everyone is handled in a specific way. And people will in fact respond with anger, shock, or ridicule to the "misuse" of monies for the wrong circumstances or social relations (such as offering a thousand-dollar bill to pay for a newspaper). Second, people have always invented their special forms of currency, such as food stamps, supermarket coupons, prison scrip, therapeutic tokens, military currencies, lunch tickets, gift certificates and of course CCs. All of them enable and constrain money-actions in a certain manner which is specified by the way people interpret the respective money. In other words: Money multiplies due to its construction and its interpretation We observed exactly this process at the Chiemgauer.

In an applied respect the findings suggest that programming money is possible. In some respects every kind of money is already programmed due to its construction and its symbolism. Lets take the credit card as an example: Its construction enables its user to spend money even if he's broke at the moment. Its symbolism is equivalent. The slogans invite you to spend money when and where you want: "Visa - It's everywhere you want to be", "There are some things that money can't buy. For everything else there's MasterCard". This generates under certain circumstances a specific action impetus which causes that somebody spends more money than he can afford. In a similar manner one could create a "social", "nonprofit" or "ecological" money. But as mentioned above – people interpret monies. And in this complex process of interpretation the meanings and usage patterns of a money maybe alter in way nobody had imagined. Altogether I think that – no matter if we want to increase our theoretical understanding of money or if we develop practice-oriented rules – future research has to pay attention to the symbolic meanings of (all kinds of) monies.

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International Journal of Community Currency Research

Volume 16 (2012) Section D 97-105

SOLIDARITY ECONOMY BETWEEN A FOCUS ON THE LOCAL AND A GLOBAL VIEW

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ABSTRACT

According to conventional wisdom, money serves the following functions: it is a medium of exchange, a unit of account, and a store of value. However, if we broaden our perspective, we might conceive of money also as a medium of communication, as a means to either change society, or to preserve a community in the sense of “resilience” against outside threat. It is this idea, which the following article wants to further explore, against the background of the newly established regional currencies (Regionalwährungen) in Germany, Austria and Switzerland. If we are not solely occupied with the financial stability of a currency, but with how a currency can contribute to the stability and cohesion of a community and of society as a whole, then we are well advised to look at accompanying structures, physical and social, which may be subsumed under the notion of “solidarity economy”.

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INTRODUCTION

According to conventional wisdom, money serves the following functions: it is a medium of exchange, a unit of account, and a store of value (see Wikipedia: "Money"). However, if we broaden our perspective, we might conceive of money also as a medium of communication, as a means to either change society, or to preserve a community in the sense of "resilience" against outside threat. It is this idea, which the following article wants to further explore, against the background of the newly established regional currencies (Regionalwährungen) in Germany, Austria and Switzerland. If we are not solely occupied with the financial stability of a currency, but with how a currency can contribute to the stability and cohesion of a community and of society as a whole, then we are well advised to look at accompanying structures, the physical and social infrastructure as well as regulatory systems. This is, what the article attempts to do. "Solidarity economy" might serve as a common denominator for the various concepts.

The first part will give a brief overview over the recent development of regional currencies in the German-speaking countries. In a second step, an attempt is made to learn from pre-modern currencies in Papua-New Guinea, which might turn out to be highly up to date again. The third section of the article links the new complementary currencies to other concepts of redistributing wealth, namely re-defining work and the introduction of a basic income, which are subsumed under the overarching concept of "solidarity economy".

REGIONAL CURRENCIES IN GERMANY, AUSTRIA AND SWITZERLAND

In the first decade of the 21st century, many initiatives for regional currencies have sprung up in Germany, Austria and Switzerland. Compared to previous local currencies and local exchange trading systems (LETS), these new regional currencies aspire to reach farther and to create a larger momentum (Kennedy/Lietaer 2004: 77). Whereas the typical LETS in these countries (Tauschring or Tauschkreis) are mostly based in one town or a city district, the regional currencies aim to strengthen the economic networks of a true region, i.e. a geographical space consisting of several towns, possibly a city, as well as the rural areas in between.

Currently there are 28 existing regional currencies in the three German-speaking countries plus dozens of initiatives, which strive to found an own regional currency in the near future. The variance of these currencies is great, though. The regional currency that is most known in Germany is the chiemgauer, which is based in the Upper Bavarian region called "Chiemgau": a relatively rural region about 60 km South-East of Munich. It is until now probably the only regional currency in Germany that already has a measurable economic impact. In Austria, the Talente-Tauschkreis Vorarlberg ("talent exchange circle" in the Austrian federal state of Vorarlberg) is another regional currency with an already remarkable impact. Vorarlberg is a small, Western

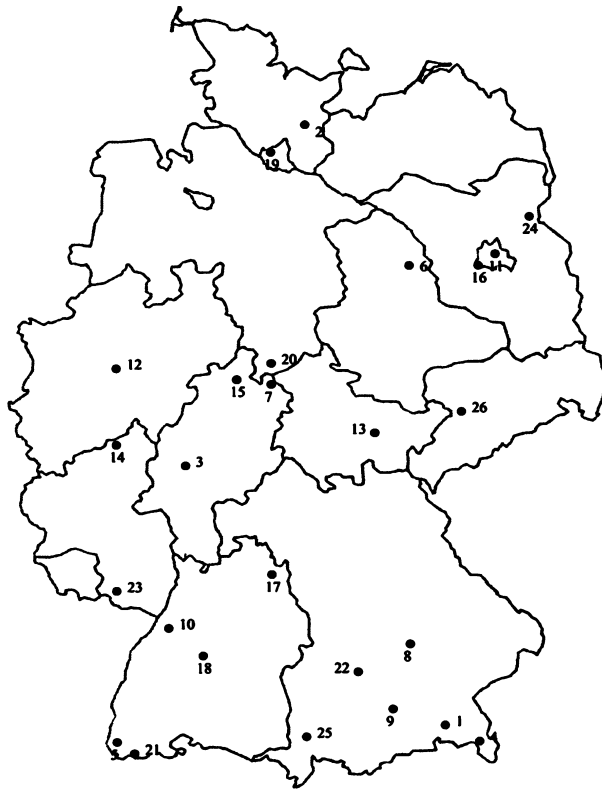
Austrian state, separated by the Arlberg mountain from the rest of Austria, with close links to the neighboring Swiss cantons. Its basic design differs in one important point from that of the chiemgauer: namely the question of how the new currency is backed.

There are presently two different prototypes of regional currencies. The first type, and until now the most widely spread, are regional currencies that are backed by the main currency euro. The alternative model has an arrangement that could be called "activity-based" currency. The idea behind this prototype is that a person or an enterprise does some work – or promises to do some work, to deliver goods and services – and that this activity, this work input, is the value basis for the currency. The nominal value is usually equivalent to that of the euro. This is principally the same mechanism as in the earlier LETS and Hours (cf. Ithaca Hours) currencies, with the slight difference that it is often first, in the starting phase, a promise or guarantee (and not the actual activity) to deliver goods and services. Next to these two very straight prototypes, a "mixed model" is being applied, which combines aspects of both principles, e.g. through an internal exchange mechanism, by which local "talents" or "hours" can be changed into the broader regional currency and vice versa. In fact, most activity-based regional currencies have developed out of necessity some forms, through which consumers can exchange euros into the regional currency, but not back again. For the future, a third backing principle can be imagined: a currency that is backed by concrete commodities, similar to the concept of a global Terra currency, as proposed by Bernard Lietaer (2002: 376-388).

If we turn first to the euro-based currencies, the case of the chiemgauer is illustrative. In 2003, a small pupil group of the local Steiner school started together with their economics teacher a pupil enterprise that began to circulate a paper money, which was accepted only in the local shops. In the beginning, the parents of the pupils exchanged euros into chiemgauers on a 1:1 basis. With these, they could buy bread, milk, paper goods, flowers and other goods in the local shops. The merchants now had the choice: either to change the chiemgauers back into euros with an exchange rate of 95 cents for each chiemgauer. In this case they suffered a 5% loss, which might have been acceptable as a form of reward for customer loyalty. The pupil company, in turn, took 2% of the exchange for its own expenses, but the remaining 3% went to some regional association, a cultural society, a sports club or an environmental organization. It was up to the initial user of the chiemgauer to decide, which particular association he/she wanted to support. This "donation function", as some have called it, has the great advantage that it arouses interest among the local and regional associations to participate in the regional currency, since they can use it as a means to raise funds for themselves.

But, of course, there is another choice for the merchant – actually the one that is even more intended. The merchant, if he/she wants to avoid the 5% loss, can look for a supplier, who in turn accepts the chiemgauer. In this case, the

Existing regional currencies in Germany (adapted from: Rohrbacher 2008)



Start 2003

1 Chiemgauer

Start 2004

2 KannWas

3 Justus

4 Sterntaler

5 Markgräfler

6 Urstromtaler

7 Kirschblüte

8 Hallertauer

Start 2005

9 Regio im Oberland

10 Carlo

11 Berliner

12 Volmetaler

13 Landmark

14 Broteinheit

Start 2006

15 Bürgerblüte

16 Havelblüte

17 Tauberfranken

18 Nahgold

Start 2007

19 Alto

20 Augusta

21 Dreyecker

22 AmmerLechtaler

23 Pälzer

24 Oderblüte

25 Regio im Ostallgäu

26 Zschopautaler

Rössle (Stuttgart) and Regio in München

In Austria: Styrrion, Talente-Tauschkreis Vorarlberg, Waldviertler

In Switzerland: Talent Schweiz

chiemgauer is as strong a currency as the euro. Only in this case, the main aim of the regional currency is achieved, namely the knitting of a regional economic network. An example is a local dairy that has found new ways to sell its products in the own region, rather than relying solely on export (Bode 2004: 87). In 2008, there were 300,000 chiemgauers circulating, creating a turnover equivalent of 3.7 million euros (the circulation speed of the chiemgauer is 2.5 to 3 times that of the euro). Whereas in the initial year 2003, 90% of the chiemgauers were changed directly back into the euro, in 2008, 70% were kept circulating. More than 600 enterprises accept the chiemgauer. (all data: www.chiemgauer.info on 8 Nov 2009)

The Chiemgau region is a relatively wealthy region in a Germany-wide comparison, and even in the context of wealthy Bavaria. According to one classification, it is a high-potential peripheral region¹ (Segert/Zierke 2005: 99). How can a regional currency work in less privileged regions, e.g. in shrinking rural regions (with high demographic losses) in Eastern Germany, but also in declining regions in Western Germany? According to the makers of regional currencies in these stagnating regions, a different

approach is needed. A very illustrating example is the urstromtaler in Saxony-Anhalt, a federal state in Eastern Germany struggling with high unemployment, a negative image and emigration of the talented. The havelblüte and oderblüte² in the federal state of Brandenburg follow a similar design. In the urstromtaler system, shops, enterprises and even private people, who sell self-made goods or services, can receive a certain amount of starter money in urstromtaler, if they sign a contract that they are willing to accept this currency as payment. Unlike in the chiemgauer system, the urstromtaler cannot be changed back into euros, instead the participants have always to find someone, who in turn accepts the regional currency as payment. The participating enterprises and individuals can choose a percentage, which can be paid in the regional currency. If a mechanic has to buy material and equipment from outside the region contributing on average to 60% of his turnover, he/she can decide to accept only 40% of the payment in the regional currency (as he is unable to convert it into euros). The amount of the initial starter money, which can be seen as an unlimited, interest-free credit, depends on the size of the company and the percentage for the acceptance of the regional currency. In the case of the havelblüte, a company receives 1,000 havelblüte for each employee times the acceptance percentage. This "credit" needs only to be paid back, if the company decides to quit the system. There were

1 "Agglomerationsferner ländlicher Kreis mit höherer Dichte": These districts, relatively remote from agglomerations but with rather dense internal structures, are according to Segert and Zierke often underestimated from an urban perspective. They are part of the periphery, but evidence in the German context an unspectacular, but stable regional development with remarkable approaches towards sustainability. Among the rural regions in Germany they rank second, and in the European context they are well-positioned as well. (Segert/Zierke 2005: 99)

2 Suffixes as -taler and -blüte are popular in the naming of German regional currencies. „Taler“ refers to both an inhabitant of a „Tal“, a river valley, while it is also an ancient German currency (the same origin as „dollar“). „Blüte“ in turn is both the flower of a plant, but also a slang word for „fake money“.

24,500 urstromtaler (in 2006), 31,000 havelblüte (in 2007) and a smaller amount of oderblüte in circulation (www.regiogeld.de on 8 Nov 2009). At this point, this type of regional currency has not reached the same impact as the euro-based model, at least if the *chiemgauer* is taken as a benchmark (however, many other euro-based regional currencies are equally small as the activity-based ones). The remarkable potential of activity-based currencies is, however, demonstrated by the Austrian *Vorarlberg talents*. They as well include private persons in their system, and currently the system counts about 1,800 participants with 750 user accounts (www.talentiert.at on 8 Nov 2009). While euro-based systems are probably more successful in integrating traditional shop-keepers (if there are still any in the region left) and thus are better in offering the consumers a wide variety of goods and services, the particular strength of the activity-based currencies lies in their potential to activate and empower the inhabitants of a region, to provide new sources of (side) income and to build social capital (which of course is endorsed by regional currencies generally, if compared to the main currency).

The *sterntaler* in the region of *Berchtesgaden* (also Upper Bavaria) is an example, where aspects of both design principles are combined. It can be ranked as a middle-sized regional currency with a current circulation of 63,000 *sterntaler* and 205 participating enterprises (www.regiostar.com on 8 Nov 2009). The *sterntaler* itself is quite similar in design to the neighboring *chiemgauer*, with which recently some kind of clearing system, an inter-regional exchange mechanism with a 1% *tobin tax*, has been established (www.regiostar.com/93.0.html on 8 Nov 2009). But the *sterntaler* is at the same time linked to a local *LETS* (Herrmann 2005: 34-36). The "mixed model" of the *sterntaler* is characterized by two rules. Next to changing euros into *sterntaler*, it is also possible to pay part of the sum in *LETS talents*. The advantage for the *LETS* participant is that he/she can now buy goods and services from a larger supply coming from the whole region, not simply the home town. On the opposite side, *sterntaler* can be changed back into euros with a loss, but also into *LETS talents* (and additional euros). In this case, the regional currency supports the *LETS* activity. The consumer is in this case rewarded with a lower exchange loss (whereas he/she gets only 90 euros for 100 *sterntaler*, he/she can choose 60 euros plus 35 talents).

As already mentioned, most of the German activity-based currencies allow for some limited exchange of euros into the regional currency, but not backwards. This exchange is in some cases even endorsed by a favorable exchange rate, e.g. 105 *havelblüte* for 100 euros. The reason for this weakening of the principle comes from the obstacles that are posed for simple consumers to join and endorse the system. Unless they participate as producers, they could otherwise obtain the regional currency only if they were employed by one of the participating enterprises (if they accepted the currency as part of their wage). Some mer-

chants, of course, also use the regional currency to reward customer loyalty by handing over regional notes as a "Thank you" for a bigger purchase.

There is one highly defended feature, which unites (almost) all regional currencies in Germany, Austria³ and Switzerland: the money loses its value over time. This characteristic goes back to the "free money" ideas of Silvio Gesell (1862-1930), who argued that money should be allowed to "rust" and "decay" in the same way as all natural goods do. This would be a matter of fairness, to put money owners at the same risk as all other farmers, workers and entrepreneurs. And it would stimulate exchange, as everyone would be eager to keep the money circulating by changing it into useful things. Gesell and his followers saw this as a means of getting rid of the whole system of interest. The amazing experience of the Austrian city of *Wörgl* during the Great Depression, when the mayor decided to introduce a local money based on Gesell's ideas, shows that such a money system can achieve a remarkable development under specific circumstances (in *Wörgl*, public infrastructure, some lasting until today, was built with the local "free money" - www.unterguggenberger.org on 8 Nov 2009). This tradition is incorporated in almost all present-day regional currencies, frequently named circulation "impulse" or "ensurement". The most common form is a small devaluation every three months (mostly 2% of the denominated value). In order to keep using the note, the user has to buy an update mark and glue it on the backside of the note. Another way to ensure the circulation is to limit the validity of the note. When the period of validity (usually a year) is over, the old note needs to be exchanged against a fee into a new one. Still a new method of continued devaluation has recently been implemented with the *e-chiemgauer*, the electronic form of the *chiemgauer*, which can be accessed through a special form of bank card. In this case a continuous devaluation of the money is possible.

In a comparative study (Volkmann 2009), the structures of the supplier side (the enterprises participating in the system) have been analyzed for 16 regional currencies. In a first step, the total of 2,300 suppliers has been categorized according to 77 branches. These include agriculture and food (fruit and vegetables, dairy products, bakeries, wood, etc.), small production (artisans, traditional crafts, etc.), food retail (organic food shops, fair trade shops, supermarkets, etc.), traditional merchants (clothes, shoes, stationaries, flowers, electrical appliances, books, pharmacies, etc.), services (computer and internet, design, coaching, alternative health, book-keeping, baby-sitting, seminars, etc.) and gastronomy (restaurants and cafes, both traditional and alternative, etc.).

The general results of this statistical overview show that on a total, a broad variety of services and goods can already be obtained with regional money. In other words, regional money could be used as a working complement to the main currency and play a considerable role in an everyday econ-

3 The *Vorarlberg talents* are an exception

omy based on regional suppliers and circuits. This positive image, however, is largely a result of the big success of the pioneer of regional currencies, the *chiemgauer*. Over 600 enterprises take part in this system, and together they offer a supply of goods and services that covers most aspects of consumer life. There are two more regional currencies with over 200 participating enterprises, which can offer a relatively broad supply as well. Four regional currencies had 100 to 200 participating enterprises and nine had less than 100 (as of summer 2007).

As an obstacle to the creation of true regional economic circuits, however, the bulk of suppliers comes from the field of trade and services. With the exception of local farms, there are few original producers integrated into the system. The top ten suppliers for the 16 analyzed regional currencies are: alternative health (110 of 2300), traditional restaurants (103), technical know-how (90), fruit and vegetables (89), artisan products (73), counseling and coaching (67), seminars (66), bakeries (65), computer and internet (63), and clothes and fashion (62). On the opposite, factories do not participate with the exception of a bio-fuel production facility. However, if it is possible to integrate local (organic) farms into the regional food retail system, this could be considered a success already, keeping in mind that the big supermarket chains often import even those food varieties from far away, which are at the same produced in the immediate vicinity. Helping local farmers and artisans to gain access to the regional markets is an important feature of regional currencies. In a small, rural region, even a regional currency with less than 100 suppliers can make a difference through achieving this objective.

The comparison showed a relatively clear difference in the supply structure between the two largest representatives of a euro-based and an activity-based currency are compared, the *chiemgauer* and the *urstromtaler*. Whereas traditional merchants (clothing shops, shoes, electrical appliances, book stores, pharmacies) are well represented in the former with a share of 32%, many of them are missing in the activity-based counterpart with a share of only 12%. On the other hand, semi-professional offers (such as self-made jam, baby-sitting, tutoring, computer help) are the strength of the *urstromtaler* with a share of 55% compared to only 26% in the *chiemgauer* system. This picture becomes less clear, if other regional currencies are included. Whereas some euro-based and mixed-system currencies such as the *waldviertler* and *sterntaler* resemble the *chiemgauer* structure, other euro-based currencies such as the *kannwas* and *berliner* have more in common with the activity-based *urstromtaler*. For the minor regional currencies, the results are equally ambivalent. The lack of traditional merchants, however, is a general feature of all activity-based currencies. How to evaluate this observation is still another question. It depends on the starting conditions and the specific objectives. If the aim is to provide an attractive offer for the consumers in the region, and to achieve a big turnover, then the euro-based system might be better suited. But if the objective is to activate the locals and to provide the un- and underemployed with a side in-

come, then an activity-based system might offer some advantages.

A common aim that was mentioned in the complementing qualitative interviews of entrepreneurs (participants as well as non-participants) was the idea to establish more direct links between producers and consumers, to deepen the understanding of how and under what conditions food and other goods are produced, and to create some sort of partnership and fair exchange similar to the principles of fair trade. This was accompanied by a vision to create a vivid, manifold network of small-scale, decentralized activities in the region. Despite all differences, this seems to be a common objective of all those regional currencies that are united under the non-profit, democratic and community-oriented charter of the *Regiogeld-Verband* (Regional Money Alliance).

LESSONS FROM PAPUA-NEW GUINEA

If we leave Central Europe for a while and travel mentally to the other side of the globe, Papua-New Guinea could be considered a “superpower” of complementary currencies. The more than 800 nations of this country have a long tradition of shell money. This shell money is a kind of “community currency” that reproduces social relations in a very different manner than the Western national currencies. According to Geoffrey Ingham, “all money is constituted by credit-debt relations – that is, social relations” (2004: 72). But whereas Western national currencies connect the state with the dominant classes (Ingham 2004: 107-133, 131 in particular), PNG shell money has been crucial to reproduce the social links within a group, making it more resilient against outward threat. (Preissing 2007) And although the context differs greatly from the Central European situation, some important lessons might be learned from the people in PNG and their way to build social capital.

Probably the most important feature about the PNG shell money is the fact that products and (ritual) services do not have a fixed, exact price (cf. Preissing 2007). Rather, the price of a product depends much on the concrete social situation. This is similar to observations in other socially rich cultures, such as the women-dominated local economy of Juchitán, Mexico (cf. Bennholdt-Thomsen 1994). Furthermore, the price of a product or service (mostly teaching of traditions or a ritual) is not paid exactly among the examined Tolai people in PNG, but rather the price remains vague so that the payment either falls a bit short of or exceeds the socially adequate amount (Preissing 2007: “non-liquidizing exchange”). The exchange thus is oriented towards the future as it establishes an obligation for further social interaction between the two exchange partners. A development aid worker told the story of how a village woman brought loads of vegetables and fruit to his family upon their arrival and how they hastily picked some things out of their travel cases to reply the gesture. The village woman, however, was suddenly very disappointed. Later, the development workers learned that the gifts of the woman were an invitation to begin a social relation and that their immediate “counter-gift” meant a rejection of this

offer. Of course, they were expected to answer the favor some day, but not immediately. Quite similarly, every payment in shell money functions thus as a reaffirmation of the social fabric. This could be seen as a concrete example of what Karl Polanyi described as the “social embeddedness of markets” (1971: 56-67).

Social anthropologists have termed this institution a “cultural reserve”. Cultural reserves enable communities and nations to keep up social and economic life under stress. Sigrun Preissing (2007) has argued that shell money of the Tolai people have empowered this nation to survive even during very endangering periods, e.g. under the pressure of the colonial powers to integrate and subordinate the Tolai and other nations in Papua-New Guinea into the colonial money system and economy. Wisely, the Tolai called the reichsmark (the currency of the colonizing German Empire) a “weak currency”, because it was only able to buy luxury goods, such as alcohol. Their own shell currency, called tabu, they considered instead as a “strong currency” as only this one was able to reproduce social relations within the group (Preissing 2007). Realistically seen, the PNG shell currencies are of course not static and are subject to change, so the usage of this community currency is changing within the larger context of the society. Sigrun Preissing reports that nowadays the local embeddedness of the shell currencies is decreasing and they consequently adopt more features of “Western” money – also because the national government of PNG now has introduced an official bank for the exchange of shell currencies into the national currency and vice versa (Preissing 2007). Accumulation of shell money and anonymity in trade are now easier with reduced social control of the transactions.

It is exactly this special feature of community currencies such as that from PNG, the fact that they introduce “friction” into money transactions, that can be learned for the further development of regional and other complementary currencies in the rich parts of the world, LETS and hours in North America, taler and blüten in Europe, fureai kippu in Japan. It is quite similar to the idea of a tobin tax (a tax on financial transactions) pushed by networks like attac. Both tobin tax and community currencies aim to create “friction” in the money transactions, to throw a spanner in the works (the name of the newsletter of attac Germany is “Sand im Getriebe” - “sand in the gearbox”).

This simultaneousness of homogenizing global trends and of new diversity at the local and regional level was termed “glocalization” by Roland Robertson (1995). The concept refers to a very dynamic relationship of the global and the local. Regional currencies, if seen this way, are not a simple – and possibly dangerous – return to old traditions and national romantic (now in the form of the region), but they stand for a new mix of adapting old traditions to a new context. Regional currencies in Europe and North America are suddenly closely linked to traditional, but themselves

changing, complementary currencies, such as those in PNG. The American political scientist Iris Marion Young elaborated an understanding of the post-colonial concept of “hybridity”, which likewise points to structures of domination and simultaneous countervailing strategies, resulting in “hybrid” cultures. She strongly argued for learning from the wisdom of other, non-European cultures in order to reconceptualize self-determination and global governance: “The project of rethinking democracy for a postcolonial age, I am suggesting, benefits from a hybrid vision of the history of societies and governments that refuses the traditional/modern, savage/civilized dichotomies.” (Young 2007: 24)

From this point of view, the task for regional currencies is the creative integration of different perspectives and the provision of maneuvering room for problem-solving (Schubert 2007: xiii). Regional currencies serve as an economic means of communication, which help to negotiate solidarity and justice in a constant process of action (ibid., cf. Joas 1996). They allow for a development of regional identity, which is in communication with global problems and challenges (Schubert 2007: xiv).

THE GREATER CONTEXT – SOLIDARITY ECONOMY

If regional currencies are regarded to facilitate communication and the search for creative solutions to problems within a region, while at the same time not forgetting the global picture, the idea of a “solidarity economy”, developed in Brazil, seems to be a very useful frame. The original Brazilian notion focuses in particular on self-governed enterprises, closed-down factories that were taken over by their employees and are now run by them on their own risk. From a European perspective, it might be sensible to widen the understanding of “solidarity economy” to all economic forms that include aspects of solidarity and fairness in opposition to pure profit-maximizing. Fair trade, idealistic provision of public goods (e.g. education) and regional currencies (which aim among others at a deepened understanding of the situation of neighboring producers and a strengthening of the regional community) could all be seen as contributing to a “solidarity economy” with blurred boundaries towards the mainstream economy, allowing the individual to choose the degree to which he or she wants to participate in the solidarity realm. This could allow for a gradual move towards the adoption of routines of alternative economic and social activity⁴.

In the first section, we have seen that activity-based regional currencies possess a strength of integrating non-formalized and often marginal-income activities (such as self-made food and personal assistance) into the regional economy, many of them embedded in some “network of solidarity”. If this approach is taken seriously, then the development of a new understanding of “work” is on the agenda: one that includes a broad variety of human activities beyond the traditional, formalized, income-earning

4 Cf. transcript of a presentation by Frank Jansky at a meeting of „Regional currencies in Eastern Germany“ (RIO) on 24 November 2007 in Könnern, Saxony-Anhalt.

work based on a 40-hour work week (in the wealthy industrialized countries). And, as our present systems of social security are based exactly on this traditional notion of “normal work”, a new logic of providing social security, of reducing the impact of individual life risks, is needed as well.

The French philosopher André Gorz has argued that technological and capitalistic “progress” has decreased drastically the amount of paid work – jobs in the common understanding (Gorz 2000: 9, 22-24). He points out that even in the emerging market economies, such as China, India and Brazil, economic growth takes place only in certain regions of the country (about twenty in China), whereas large parts of these countries remain outside this income growth (Gorz 2000: 37). According to Gorz, “the greater the rise in productivity and the enthusiasm of the workers, the greater is also the rise of unemployment, poverty, inequality, social exclusion and the profit rate” (ibid.: 67, translation from the German edition: K.V.).

Gorz calls for a new understanding of work. Instead of considering discontinuous work as “inferior, insecure, forced upon, discontinuous work must become a desired, socially secured right, a socially respected form of human versatility, a source of independent every-day culture and new socialness”. (Gorz 2000: 77-78, translation: K.V.). The basic income needed for life should no longer be dependent on paid work, but guaranteed for all members of society. Gorz argues that there is not a lack of work – there is enough work to be done in society – but there is a lack in the fair distribution of richness. (Gorz 2000: 102) A guaranteed basic income for all would encourage to see work in terms of “being active”. Life would be constituted of “multiactivity” rather than the “job” one is doing. (Gorz 2000: 102-109)

A guaranteed basic income may sound Utopian. This is not necessarily so. A detailed calculation based on real micro-level household data, carried out by the Finnish Green Educational Foundation (Visio) and the Finnish Social Insurance Agency (Kela), simulated the effects of a partial basic income (Honkanen/Soininvaara/Ylikahri 2007). The model was based on an unconditional partial basic income of 500 euros for each citizen between 18 to 65 years (older citizens already get a guaranteed basic income higher than that today). The financing would require a reform of the tax system, introducing a flat income tax (of 48%) on all incomes, i.e. including capital income. Present-day income transfers such as rent assistance would be continued to be paid by the state for those who are unable to add-on themselves to the partial basic income. The results are very encouraging: 42.5% of the Finnish population (mainly in the poorer income deciles) would be better off as a result of the partial basic income; for 37.0% (mainly the middle income segments) the financial situation would remain mostly the same as today; only about 20.5% (in the upper two income

deciles) would be worse off due to a higher taxation of capital income (Honkanen/Soininvaara/Ylikahri 2007: 67). All poverty indicators would improve, albeit the median income and thus the reference point would rise: The relative poverty would drop from 3.7% to 1.7% (40%-poverty), from 10.1% to 7.8% (50%-poverty) and 16.5% to 14.0% (60%-poverty). The Gini-coefficient as a measure for income distribution would improve from 26.1% to 22.7% (ibid.: 71).

The authors of the study stress that a basic income itself has only a limited effect to make incomes more equal. Taxation is instead the main factor to reduce income inequality (ibid.: 77). Also, it is impossible to predict how human behavior will change if the incentives are changed (ibid.: 52). However, a (partial) basic income can be seen as not simply an instrument for social policy, but for economic policy as well: Having an unconditional, partial but guaranteed income, many small and limited jobs would become attractive. Society as a whole would gain. Also, it is a means to encourage entrepreneurship – exactly the kind of small-scale entrepreneurship that is also endorsed by regional currencies. A village grocery store, that is no longer profitable, might give employment to a person with a partial basic income. This is not only a gain for this individual, but for the whole village community, which will keep its village store, both as supplier of daily goods and as a social meeting place. And even nature gains, because car trips to remote supermarkets are reduced⁵.

As the Finnish authors pointed out, it is difficult to predict how people will react if incentives are changed. A concrete scenario based on detailed statistical evidence on the amount of work done in Germany is the vision of a “half-day society” (Halbtagsgesellschaft) by Carsten Stahmer, Susanne Hartard and Axel Schaffer (Stahmer 2006). According to surveys by the Federal Statistical Office, men in Germany work on average 1,700 hours a year in paid work. Women, in comparison, work 1,150 hours a year in paid work. On the other side, about two thirds of the housework is done by women. About 10 million persons in Germany do not have a paid job, not all are officially unemployed, because some simply have given up to find a job and may live on the income of their spouse or their savings. The team around Carsten Stahmer suggests an ideal, where men and women equally work about 1,000 hours a year. This means a reduction for both. This would set free paid work for those 10 million persons, who do not have a “job” today. (Stahmer 2006: 11) And those, who have a “job” today, would gain time for volunteer work, for child-rearing and care of the elderly, and for continued education. Society, again, would gain as a whole (ibid.: 7-8). The proponents of a “half-time society” do not suggest radical changes. They do not suggest that the average person would start working part-time. Instead, they envision a model where it is possible to work some years full-time, but there is an option to leave work for a limited time when

⁵ There are other arguments for a basic income grant, most prominently the human right to live in dignity, but also as a corporate dividend to unselfish productive innovations coming from society

the children are young, for personal development, or when the old parents need special care. (ibid.: 9) This would require a system that allows for distributing the life work time unequally across the years. They suggest some kind of time currency as a complement to the income in the main currency. (ibid.: 25, 30-31) Raising children or caring for neighbors would add to the time account, which in return could be used if the same person needs help when he or she is old or ill. Those who prefer to work full time all their life are free to do so, but they would have to pay higher taxes in order to compensate the loss for society as they contribute less volunteer work to the community (ibid.: 22-23).

The last insight, that society – and the economy as well – derives much of its functioning from the unpaid work contribution for reproduction from its members – and in particular from women – is the main argument of an approach of feminist sociology called the “subsistence approach”. Similar to the post-colonialist notion of “hybridity”, which strives to overcome the classical dichotomy of traditional/modern, the subsistence approach aims to transfer the idea of subsistence, of self-sustaining work, from its traditional context as “primitive, pre-modern economy in developing countries” to the context of Western societies by focusing on the every-day work that is done in households and communities to prepare food, to provide clothing, to clean and repair, to take care of people, who need assistance and so on (Bennholdt-Thomsen/Mies 1997: 14-18). Some proponents have developed this idea for a specific urban context (Dahm/Scherhorn 2008), including in particular community work in the neighborhood and beyond the family, into this concept. The subsistence approach takes a rather radical position. It questions the standard creation of “new” jobs, stating e.g. that a service-job in a shopping mall is not close to equal the quality of a small, independent shopkeeper or craftsman, who has been made unemployed by the massive state subsidy to build a large shopping mall in the name of creating “new” jobs – at the same time destroying old ones (Bennholdt-Thomsen 2003: 244-245). Veronika Bennholdt-Thomsen, one of the conceptual thinkers of the subsistence approach, has set up five criteria for a “subsistence orientation” (ibid.: 249):

1. The useful, that what is needed, has priority.
2. The small has priority over the big.
3. Personal relations are better than anonymous ones.
4. Decentralized solutions are better than centralized ones.
5. The local has priority over the international.

These demands have much in common with the ideas of actors who initiate regional currencies. They as well want to strengthen small, local enterprises, knit decentralized networks in the region, establish direct contacts between producers and consumers and create a form of money that is based on its usefulness for the people (cf. Volkmann 2009: 115-118, 123, 240). Bennholdt-Thomsen writes: “[...]

it is possible even in complex societies to manage without money, not immediately in the whole world society, nor at once in the whole country, but locally and regionally. I think of Local Exchange Trading Systems (LETS), as they are developing in Germany in many cities and which might well be supported by the municipality [...] But another point is important to me in this context: Namely that not money itself is the problem, but how we deal with it.” (Bennholdt-Thomsen 2003: 250, translation: K.V.).

Under the heading “opportunities of shrinking”, the theologian Hans-Peter Gensichen has composed a list of innovative social infrastructure based on Gorzian multiactivity, which is especially needed in less advantaged (rural) regions: village schools, public libraries, local markets, community gardens, self-help repair shops, care partnerships etc. (2007: 137-145). If we see regional and other complementary currencies as agents of change, then they are closely linked to a new understanding of work – including being active for one's one sake, for the community, and for society at large –, and to a corresponding infrastructure of social institutions. All might be put under the roof of the term “solidarity economy”.

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International Journal of Community Currency Research

Volume 16 (2012) Section D 106-115

STROUD POUND: A LOCAL CURRENCY TO MAP, MEASURE AND STRENGTHEN THE LOCAL ECONOMY

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ABSTRACT

The Stroud Pound is one of the local currencies to be set up in recent years by UK-based Transition Towns. The paper details the first two years of the life of the Stroud Pound; both its authors were closely involved in the development of the currency and the paper is therefore a view 'from the inside' rather than a disconnected academic account. The Stroud Pound grew out of Transition Stroud, a community-led response to climate change and peak oil. It therefore has a design that seeks to build greater resilience and strength into the local economy. In this paper the researchers use the local currency as a research tool to explore issues such as: the size of the local multiplier extent of trade between local producers; the dynamics of the local economy; and the diverse motivations of scheme participants. The paper includes: an account of the literature on community currencies, especially the work of Silvio Gesell; a brief account of Stroud and the results of a survey conducted amongst Stroud-based businesses as part of the establishment of the Stroud Pound; an account of the first year of the Stroud Pound and its impact on the local economy.

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'The human mind is baffled by the abstract, and money hitherto has been wholly abstract.' Silvio Gesell (1929: pt. 3. ch. 15)

1. INTRODUCTION

This paper details the first two years of the project to develop the Stroud Pound, one of a number of local currencies that have been launched in the UK in recent years as part of the Transition Towns movement: one year of planning and preparation, the launch and a year's operation of the scheme. Its authors were both closely involved in the scheme, one as a Director of the Stroud Pound Co-operative, the other during a six-month internship with Transition Stroud. The paper is therefore a view 'from the inside' rather than a disconnected academic account. The aim of the Stroud Pound, in keeping with the Transition focus on resilience, i.e. the extent to which Stroud as a community is self-reliant in the provision of its basic goods and services. To facilitate the reinforcement of resilience the local currency is designed to strengthen local economic links and increase the size of the local multiplier, i.e. the number of times the currency is used to mediate transactions before it is taken out of circulation. However, as both authors noticed, if the Stroud Pound can also be used as a research tool to explore the dynamics of a local economic system and the motivations of the various participants. This paper uses this potential research function of a local currency to provide an in-depth profile of the local economy of Stroud, within the theoretical focus on Transition-related activity.

The paper falls into three main parts. In Section 2 First an account of the literature exploring the potential of local currencies will be provided is offered, focusing especially on the work of Silvio Gesell (1929) and his emphasis on the relationship between monetary circulation and economic regeneration, including his concept of demurrage. This discussion will be linked to the role local currencies can play in both effecting community regeneration and strengthening and reducing the ecological impact of local economies. The second section will provide Section 3 provides a brief account of the local economy of Stroud, and introduces the Transition Movement and its local incarnation Transition Stroud, before moving on to discuss in detail the design of the Stroud Pound and a history of its first year of life. It also includes the findings of a survey of local businesses in the town which we undertook as part of our efforts to encourage participation in the scheme. In this section we

The third part of the paper will consider how a local currency enables environmentally focused community activists to learn more about how their local economy works. A priority for Transition Stroud is to use the local currency to encourage more local production by means of import substitution, displacing production as well as consumption from the global to the local economy, rather than just switching numeraire. The Stroud Pound has also provided a tool to measure the extent of local economic activity, a

function which has been enhanced by the undertaking of a the detailed local survey.

Finally, In Section 4, we provide some analytical reflections on what we learned from the survey and from our own experiences in developing the local currency. The conversations that we were engaged with provided us with rich data about local people's perceptions of their own economy and its place in the global economic system. These conversations also revealed underlying assumptions about money and its role in society, that we are able to report. Finally, in Section 5, we draw some conclusions about the role of local currencies in Transition processes, and, conversely, what the role of Transition activities may be in preparing us for a new economic paradigm. the role of the new currency in strengthening the local economy of Stroud and the surrounding region will be undertaken. Here, the iconic nature of a currency, as opposed to, for example, a Buy Local campaign, will be explored, with particular emphasis on the physical design of the notes and local people's responses to images representative of Stroud as a local economy of the past, and the future.

2. THE MAGIC ROUNDABOUT: CIRCULATION AND LOCAL ECONOMIC HEALTH

The current spate of research into the potential of local currencies to rejuvenate local and regional economies that have been eroded during the process of globalisation has three main themes: first, a concern with the wastage of local talent and skills because the centralising, corporate economy has priced many people out of occupations; secondly, the concern for the loss of cultural and social—as well as economic value—resulting from the globalisation process and a desire to find tools and techniques to reverse this process; and thirdly, and more recently, a concern that the global financial system is less stable than it appears and that local currencies may be needed in developed economies in case the national and global currencies and the system they rely on should catastrophically fail, leaving people powerless to carry out the everyday business of exchange.

The first concern is expressed most clearly in the work of Edgar Cahn, who draws attention to the atrophy of what he calls the 'core economy' as a result of the marketisation of a growing range of social and economic activities. He identifies the money system itself as the cause of the domination of market-based economic activities in most people's lives. Cahn argues that many key areas of life—caring for children and old people, sharing services, offering mutual support—function outside the money system and help to build a strong community based on reciprocity rather than profit. For Cahn the solution is a co-operative form of economic organisation he calls 'co-production' and local time-based currencies can help to support the revival of this form of mutual service and care.

The second motivation for the recent creation of local currencies has been community activism in response to the threats of peak oil and climate change, as in the Transition

Town movement that has given rise to four of the UK's local currencies (in Totnes, Lewes, Brixton and Stroud). The focus of the Transition process on resilience implies the need to rebuild the self-reliant local economies that characterised the UK before the advent of industrialisation and the ready availability of fossil fuels (Hopkins, 2008). The Transition Towns movement began in Totnes in September 2006 and was a community-level response to the recognition of the need for a radically different way of life following the depletion of oil supplies and the requirement to reduce the carbon dioxide emissions that are causing climate change. The Transition movement is focused on resources—its *raison d'être* being the need to reduce fossil fuel use because of the threats posed by climate change and peak oil—and thus its ideology suggests an alternative way of organizing the economy. Two concepts are central to Transition thinking: self-reliance and resilience (Cato and Hillier, 2010) and both have a significant impact on local economic activity. Resilient communities would need to meet more of their needs from local production, and having a local currency is considered to be a useful means of both encouraging local production and facilitating its exchange (North, 2010). There is a particular focus on market towns such as Stroud, which are theorised as being a particularly energy-efficient pattern of human development. A currency is an essential tool in the process of revitalising local economies (Douthwaite, 1996) and four of the UK's leading Transition Towns have launched currencies beginning with Totnes in 2006. Thus the original motivation was and this has informed the design of the Stroud Pound, whose central aim is to encourage greater production and exchange on a local basis.

However, the 2008 crash shifted the focus by making it clear that forces in the global economy might express themselves more suddenly than a depletion of oil supplies might suggest, leading to models such as those developed in Argentina following the collapse of the financial system in 2001 coming into vogue in complementary currency circles (Cato, 2006b). The wider ramifications of the Crash, resulting in the limitation of liquidity in the economy as a result of reduced bank lending, higher taxation, rising prices and reduced public spending, bring to the fore exactly the sorts of arguments made by Gesell in support of local currencies with in-built circulation-enhancing mechanisms. The 1929 Crash led to the Great Depression as a result of the failure of aggregate demand and reduced availability of credit and liquid money. While governments have thus far prevented economic contraction on this scale, at least in the UK the public spending cuts seem likely to provoke a similar rapid transaction contraction through 2011. This represents an extreme and sudden withdrawal of liquidity from local economies and could be used to argue that another source of liquidity is required, perhaps in the form of a local currency, making the case for a local currency with demurrage—preferably issued by or supported by a local political authority—stronger than ever.

From a theoretical point of view, the focus of theorists of local currencies is primarily on circulation, the number of

times a currency is spent within the economy of concern before it leaves, usually through being deposited in a bank. This is clearly visible in the work from the New Economics Foundation into the LM3 process to attempt to quantify the value of the local multiplier (Sacks, 2002). In such work the local multiplier is measured as the number of times money is spent before it is taken out of the local economy. In the case of a national currency this is difficult to measure, but the measurement can be much easier in the case of local currencies. Some varieties of US scrip issue from the 1930s, for example, were stamped each time they changed hands (Gatch, 2011), so that the number of stamps could be used as a measure of the size of the local multiplier (and the time that had elapsed between one and the next, a measure of the velocity of circulation). The local paper currencies can potentially be used in a similar way, as the first issue of the Totnes pound was, having a space for each user to stamp where and when an exchange had taken place. While this offers the opportunity to study a local economy in depth, it is cumbersome and removes the anonymity which many people value in the design of circulating paper money.

This theorising can be related to the quantity theory of money (Fisher, 1911) whose equation:

$$MV = PT$$

makes clear that the equality that summarises the life of an economy is money (M) multiplied by its velocity of circulation (V) is equivalent to the volume of transactions (T) at the prevailing prices (P).

Gesell's aim was to create a form of money he called 'Free-Money' whose supply was determined socially and which exactly matched the amount of economic activity in the local economy. This was to counteract the way that existing money systems enable the extraction of value through speculation and the earning of interest, and the way that this creates economic instability and has an inherent tendency to depress the amount of economic demand. Gesell (1929: pt. IV, ch. 2) set three objectives for his new currency design: that it should 'secure the exchange of goods' so that there were no boom-and-bust cycles; that it should accelerate the rate of economic exchange; and that it should close the value gap between producer and consumer, to avoid profiteering by middlemen.

To ensure the rapid circulation of this money Gesell suggested that, rather than people being rewarded for holding money through interest, they should be charged for holding it, a process he called 'demurrage':

'On January 1st its value in the markets, shops, pay-offices, public treasuries and courts of justice is \$100 and on December 31st it is only \$95. That is to say, if the holder of the note intends to employ it at the end of the year to pay \$100, on a bill of exchange, invoice or demand note, he has to add \$5 to the note. . . What has occurred?

Nothing but what occurs with every other commodity. Just as a certain egg steadily and rapidly departs from the economic conception 'egg' and is not comparable to it at an completion of the rotting process, the dollar as the currency unit is permanent and unchanging; it is the basis for all calculations; but the dollar as a money-token has only the starting point in common with it. The holder of this perishable money will beware of keeping the money, just as the egg-dealer will beware of keeping the egg any longer than he must. The holder of the new money will invariably endeavour to pass on the money, and the loss involved by its possession, to others.'

(Gesell, 1929: pt. IV, ch. 4)

Gesell's theories strongly support the design of Germany's *Regiogeld* or 'regional money' systems, which have been influenced by them. His objectives of removing profiteering and economic instability and supporting the local economy within which the regional currency is accepted are also highly relevant to the Transition project, which similarly seeks to bolster local economies in order to achieve its aims of resilience and self-reliance, as outlined above. His Gesell's aim of accelerating economic exchange is more problematic, since the Transition Movement is established within a green economic framework, meaning that economic growth should be constrained by ecological limits of a steady-state approach to economics (Cato, 2009) and hence economic growth is problematic rather than desirable. However, as discussed in the following section, in the context of Stroud, the currency can be used to shift economic activity into the local economy, rather than increasing its absolute magnitude.

3. A CURRENCY AS A RESEARCH TOOL

Stroud is an exemplar sustainable community located in rural Gloucestershire some 30 miles North-East of Bristol, UK. A former textile town, it suffered severe industrial restructuring in the second half of the 20th century. Low property prices attracted a range of cultural alternatives, including artists and environmentalists, who have pioneered green lifestyles and socially innovative projects (Large, 2010). Stroud was also the site of one of the UK's most successful LETS schemes (North, 2008). Stroud began its transition to a sustainable society long before that word became branded and widely applied and was, unsurprisingly, one of the first UK towns to register with the nascent Transition Network in September 2006. The name "Transition Stroud" was chosen rather than 'Transition Town Stroud' to mark the fact that the transition process seeks to involve all the inhabitants of the Stroud District, not just the town itself. This area is often referred to as the "Five Valleys" in recognition of the river valleys that mark it off from the edge of the Cotswold escarpment.

One of the authors was involved in this initial creation of a new process to carry forward sustainability-related ideas within the town and launched the Lifestyles and Livelihoods working group as one of the first issue-focused projects of Transition Stroud in the winter of that same year. After initial discussion around a range of ideas, the suggestion to launch a local currency was the most attractive and the scheme that has been running in the Bavarian region of Chiemgau since 2003 was chosen as the best model. A member of the working group invited Christian Gelleri, the founder of the Chiemgau to spend a weekend in Stroud, running a workshop and addressing a larger public meeting, which was attended by around 60 people (Gelleri, 2009). There was initial interest from both traders and consumers, and the core group for the currency engaged in a series of consciousness-raising events in the town while simultaneously commissioning designs for the notes.

The Stroud Pound follows the essential design features of the Chiemgauer (Gelleri, 2009). The currency is administered by a co-operative, the Stroud Pound Co-operative, which money is issued by the co-operative on a one-for-one exchange basis for pounds sterling. Businesses, consumers and charities are encouraged to join the scheme, although it is possible to pick the notes up in change and use them for purchasing. When consumers buy Stroud Pounds a percentage of the value is donated to a local charity of their choice. This is balanced by a 3% "redemption" charge when businesses exchange the money back for sterling, a design feature intended to encourage the value of the local multiplier (the number of times the note is spent before being exchanged back). The involvement of local charities is intended to encourage them to bring their members into the scheme as a means of raising funds; it is hoped that this will extend the reach of the scheme beyond those who are committed to it because of their involvement in Transition activities.

In addition, the Stroud Pound uses a system of demurrage to encourage its more rapid circulation relative to the national currency: each six months the currency is considered to have depreciated by 3% of its face value. In order to keep the money valid those holding it must affix a stamp to the value of 3% of the face value at six-monthly intervals.. This is intended to increase the velocity of circulation of the local currency relative to the national currency, following the theories of Silvio Gesell outlined in the previous section. At present this is a charge of 3% of the face value to be added to the note at six-month intervals. The intention of this feature is to encourage scheme members to spend their Stroud pounds more rapidly than their sterling cash, since they know it has a limited shelf-life. It also acts as a way of challenging the central motivations of the existing economic system: price and choice. By using Stroud Pounds consumers are accepting that money has a value that they are prepared to pay for, in contrast to the 'free' credit of the national credit system. They are also accepting that they will limit their choices to the range of shops who accept the local currency, and pay the prices charged there, which

may be higher than prices charged in the chainstore outlets.

Like the other Transition currencies, the physical design of the Stroud Pound notes is deliberately intended to build greater identification with the local area and its economic and cultural resources. The basic design motif is the teasle, a plant that played a crucial role in the making of felted woollen cloth that was the backbone of the industrial economy of Stroud. The local author Laurie Lee, himself a socialist, is the iconic image for the £10 note (his widow spoke at the launch, where she unveiled this design). The £5 note includes local wildlife, while the £2 commemorates the cloth industry and the invention of the lawnmower in Brimscombe near Stroud. The £1 features the teasle together with the bee, symbol of a co-operative community.

Given its imitation of the design of the Chiemgauer and other German currencies following a similar model, Stroud Pound can be considered an experiment with the Regiogeld model in the UK context (North, 2010), and an opportunity to assess the importance of the cultural setting in determining the success or otherwise of this currency design. The Stroud Pound is unique amongst the new wave of local currencies in the UK in being entirely democratic. Stroud Pound Co-operative is the holding body, and all who wish to use the currency are invited to join, in order to have a say in the design and implementation of the scheme. It is also unique in using the system of demurrage to encourage circulation. This means that there is a charge for being part of the scheme, rather than users being rewarded as in other schemes (see the design of the US Berkshare: <http://www.berkshares.org/>). While this means that ensuring sufficient take-up is more difficult, it guarantees that if the scheme works it will achieve its objectives of building a stronger local economy, rather than merely shifting the existing activity into a different currency but without achieving structural change.

The Stroud Pound was launched in September 2009, and had been operating for a year when this paper was written (see also North, 2010). In the first year a total of £10,066 were exchanged for Stroud Pounds. By the end of the year slightly over half of those (£5940) had been redeemed, which meant that £290 had been allocated to the ten local good causes which people had chosen. A year after the launch of the scheme SP4,126 were in circulation, in the sense that they had been exchanged and not redeemed. Until the currency comes to the end of its life in September 2011 we will not be in a position to say how many of these notes have been withdrawn from circulation intentionally (by collectors) or accidentally (by having been left in pockets, for example). However, we are aware that a number of notes have been sold on the internet, sent to friends in Stroud, Oklahoma or Stroud, New South Wales, and bought for the purposes of collection rather than exchange. At the end of the first year the scheme had around 180 con-

sumer members and 44 outlets or service providers where the local currency could be spent.

Establishing a local currency requires its designers to be closely involved with the economic life of their currency area. In part this is because they need to persuade local traders and consumers to participate, and to do so requires an understanding of their motivations and incentives. But beyond this, a currency is designed to effect change in a local economic system, and therefore to create one effectively requires an understanding of the dynamics of the local economy. It is for this reason that we suggest that a currency can provide a useful tool to map and measure a local economy: our conclusions about how Stroud works as a small semi-rural economy are offered in the following section.

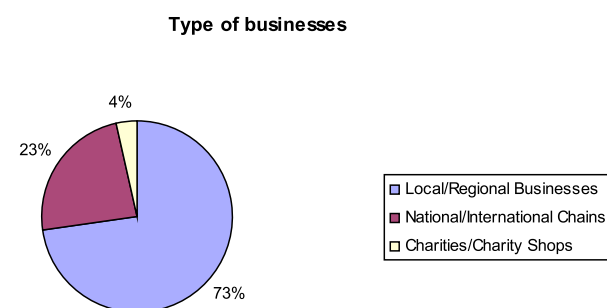
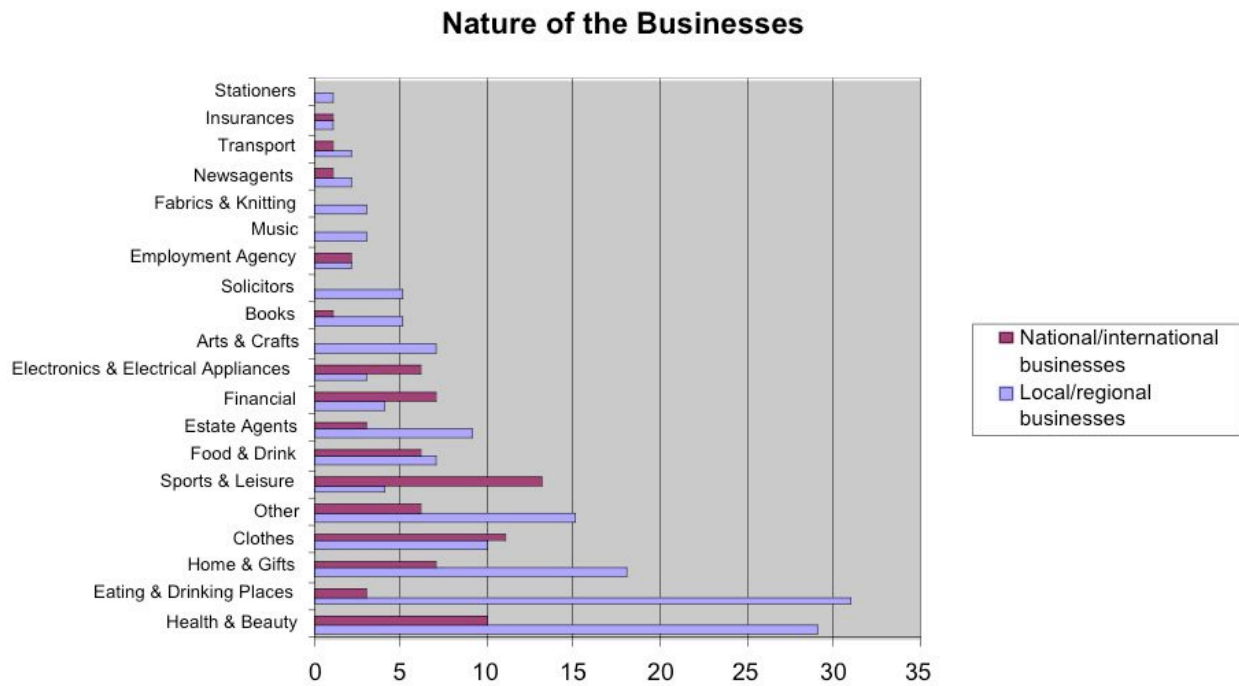


Figure 1. Stroud business, by geographical nature of ownership

For the remainder of this section we complete our brief profile of the local account by reporting the results of a local survey that was undertaken to support the development of the Stroud Pound¹. The survey was a baseline exercise to establish the uses for all the commercial premises in the town. The intention of the survey was to assess which businesses were worth approaching about the local currency. Because of time limitations the survey was carried out specifically in the town itself rather than in the whole of the Five Valleys area which is covered by the Stroud Pound. The survey was conducted via a paper-based questionnaire which was delivered by hand to all the commercial premises in the town, excluding those which only provide services and do not sell any products, a list having been drawn up from local authority records and lists used for the charging of local taxes. The aim was to cover most of the commercial businesses which were subject to study in the town and several returns visits were made to ensure completeness. The final returns show that 36 out of 91 businesses responded to the survey, a return rate of 40%.

¹ In this paper we have avoided the conventional structure of including a detailed methods section since this would suggest a spurious objectivity and would deny the reality of our close involvement with the activity being described. We have adopted a broadly phenomenology approach to our research: for more detail of the reasons for our commitment to this type of research approach see Cato and Hillier, 2010.

Figure 2. Stroud businesses by ownership type and sector



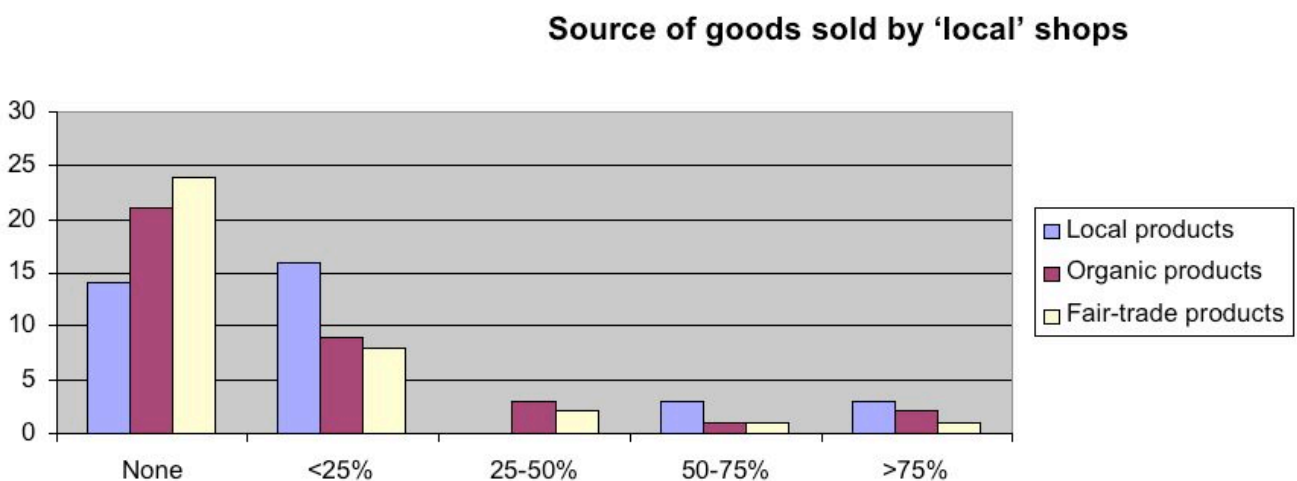
We did not identify any relationship between people's willingness to complete the survey and their likelihood of signing up as users of the Stroud Pound. We remained open to the possibility that national chains might accept the local currency, but none of them approached us to ask if they might do so. This may have been because the publicity surrounding the scheme made it clear that its intention was to support local businesses and their local suppliers.

There are 251 commercial businesses in the town and almost two thirds of them are locally owned or regional chains (with brands within the West Country: Figure 1). Figure 2 offers a comparison by sector and in terms of geographical ownership type, comparing local and regional businesses with national and international chains. It indicates that those which provide goods or services related to health and beauty, home and gifts, and cafes, restaurants and pubs are mainly locally owned or local outlets of re-

gional chains, whereas those which provide goods and services related to sports and leisure are mainly national or international chains. In the case of businesses selling food and drink or clothes, half are local or regional businesses and the other half are national or international chains.

Since the concern of Transition Stroud is with social and ecological impact as well as reducing trade-related emissions, we included questions concerning environmentally friendly and fair-trade goods in the survey.: Specifically, what percentage of the shop's goods were organic, locally produced or fairly traded. As we can see from Figure 3, the largest number of businesses did not sell any products that fell into any of these categories. However, almost half sell some locally sourced goods. The level is highest in the case of the second-hand shops, all of whose goods can be considered locally sourced.

Figure 3. Proportion of goods that were locally sourced, organic or fair trade, by business



A key aspect of the design of the Stroud Pound is the redemption fee charged when traders exchange them back for sterling. The purpose of this charge is to encourage inter-business trade amongst those who accept the local currency. We were interested to discover how effective this was likely to be and also hoped to encourage businesses to enter the scheme on a 'consortium basis'. To inform our campaigning we asked the businesses to tell us three local traders whom they traded with regularly. By adding these results together we were able to ascertain that the majority of local businesses (56 per cent) do trade with other local businesses, although this may well represent only a limited amount of their sourcing.

As we can see, although most of the businesses in the town are locally owned they usually sell products from other regions of the country and, probably, a great number of them from overseas. This is a general tendency in most of the developed countries, which have lost their industrial and farming tradition and import a great proportion of the goods they consume because it is cheaper than producing it themselves. Food can be an exception in the case of Stroud, as there is an increasing rate of production in the surrounding area as the popularity of local food increases (a good example of this is the multi-award winning Farmers' Market). Nevertheless, it is still more expensive than foreign products and many customers are still shopping on the basis of price. Even the owners of the local businesses, who should be more aware of the importance of buying locally, are happy to say that they shop in national and international chains.

The difficulty in finding local products as well as the preference of local people to buy cheap rather than local are obstacles to the implementation of the Stroud Pound and may be reasons why some local businesses do not want to join the scheme. On the one hand, if they accept Stroud Pounds they cannot spend them to buy goods for their businesses and, on the other hand, they cannot either spend them to buy goods for their own consumption because they usually buy in national or international chains, so they would have to redeem them and lose 3 per cent of the amount exchanged back. In the case of those traders who have already joined many face the same problem, and, although we do not have the means of assessing the circulation of the currency, anecdotal evidence suggests that the number of times that the notes are spent before being redeemed is lower than would be desired if the currency were to fulfill its central aim of stimulating local economic activity.

4. A CURRENCY AS AN ANALYTICAL TOOL

For some local currency activists, the prime motivation behind a local money scheme is to counteract the seemingly ineluctable march of the supermarket and the out-of-town store. The so-called "clone town", with its high streets dominated by chainstores is culturally reviled, while at the same time the vast majority of people continue to shop there. Stroud Pound offered people in one small town and several surrounding villages the opportu-

nity to do something different. As explored in the previous section, this was a project more ambitious than it appeared at first, since to use a money system that had communitarian rather than individualist motivations in its DNA required more than just a change of shopping habits: it required a wholesale change in economic culture. In this section we take a more analytical view of the data drawn from our survey, and information drawn from our conversations with local traders and consumers, both those who did participate in the scheme and those who did not. We use this data to identify a number of cultural challenges to the effective functioning of the Stroud Pound.

Misunderstanding Money

Perhaps the most significant obstacle to encouraging local people to use the scheme was the absence of any understanding of how money works. The level of naivety surrounding money—its origin, costs and consequence—was striking and we had to conclude that the money system is understood only dimly if at all by the vast majority of local people. We do not think that Stroud is atypical in this. An example is the traders' objection to paying a 3% redemption charge when many are routinely paying between 1.5% and 4% in credit-card charges. These charges, like the national money system itself, are regarded as natural and have become almost invisible and impervious to challenge. Even shopkeepers, who might be expected to think about the operation of the money system more than those working in the public sector or outside the market system, do not seem to consider how their decisions about using cash vs. electronic money, or using a credit-card system operated by a multinational banking group, affects their ability to trade effectively in their town. In such an environment, creating an alternative money system can seem superfluous if not entirely misguided.

Another area of ignorance surrounds the nature of the local multiplier. In the context of a local currency this has a particularly significance. It is usually defined as being the number of times a currency changes hands before it leaves the local economy: an average value for local circulation (Sacks, 2002). In the case of a local currency, this is a more exact concept, meaning the number of times the local currency is spent before being exchanged back for national currency. However, the potential that a local currency has to enforce local consumption was not well understood. Consumers who were strongly supportive of the aims of Stroud Pound frequently stated that they have no need of it, since they can and do spend sterling in the local shops. Their ability to increase the local multiplier by enforcing that every subsequent person who acquires the money they spend also spends it in the Five Valleys does not enter into their view of the potential impact of their spending decisions.

Linked to this is the general acceptance that electronic rather than paper money is a harmless convenience. In fact, the shift from the one-third of money issue by banks that was the situation in the UK in 1963 to the mere 3% today (Porritt, 2006: 190-1) has meant a parallel shift in power

from the state to the private banks. Since whoever issues the currency also controls it, the creation of money only in electronic form has removed an important power and financial resource from the UK government (Mellor, 2010). Many traders and local people see paper money as old-fashioned and are not prepared to make the effort to access cash (of any sort) when almost all traders will accept payment by debit or credit card. They are unaware that there are any material consequences from this decision.

Even in the wake of the 2008 Crash, when the money system so spectacularly failed, there is an innate and unquestioning acceptance that sterling money is and will remain the dominant force in the economy. Very few question whether it is a force for good or ill. The acceptance of the existing system of money meant that some traders reacted with hostility to the advent of the Stroud Pound. Many, perhaps deliberately “misunderstood” the workings of the scheme and in some cases suggested that the organisers were seeking personal benefit for themselves. In another case, a group of local traders who had refused to join the scheme launched “Stroud cheques”: a voucher scheme designed to resemble a cheque-book. Given that there was no real relationship between the vouchers and a chequing system, and no involvement of a circulating currency, we concluded that the use of the theme of a “cheque” was a direct challenge to the Stroud Pound, but interestingly one that was located within the existing culture, since the incentive to use it was a discount of between 10% and 20%. In other words, the traders were happier to offer larger discounts than would have been required had they accepted Stroud Pounds in order to stay within the existing incentive structure.

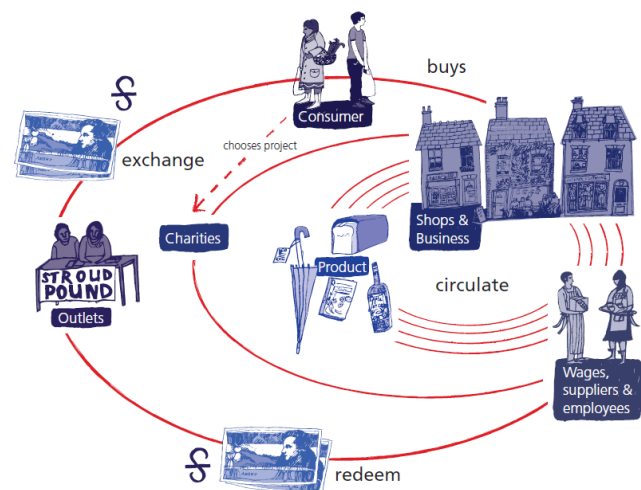
The Stroud Pound is deliberately designed to challenge the dominant drivers of a modern capitalist economy: price and choice. When consumers buy their SPs they are choosing to limit their choice of goods to those sold in the shops that accept the currency. They are also accepting that this may mean that they sometimes pay higher prices: their ability to “shop around” to find the lowest price is curtailed. Stroud Pound is deliberately designed to work in this way, since trading focused on price and choice—and backed up by the economies of scale and the domination of market power by corporate interests—has been identified by its organisers as the central cause of the vulnerability and insecurity of their local economy. So the design of the scheme is correct to meet its objectives, but in order to use it people must already undergo a fundamental shift in their understanding of how an economy should work in their best interests. While we have found that in many cases local people are not ready for this, we feel that challenging them in this way creates excellent opportunities for education in a broad sense.

Failure of solidarity

Figure 4 illustrates how the Stroud Pound works is intended to work at the community scale. Consumers exchange their sterling to obtain it, or can pick it up in shops or in wages. The ideal is for the circulation circuit on the

right-hand side of this diagram to be as rapid and include as many circulations as possible: this represents the local multiplier effect that. This is what theorized as bringing strength to the local economy. This circuit includes local working people, producer businesses and pure retail businesses, as well as the consumers themselves. A small proportion of the value of the money issue goes to local charities, and this is taken from the traders as a form of local tax when they redeem their money. The graphic illustrates how this form of money builds is intended to build the community and keeps value within a local circuit. A similar diagram for a national money system would have leakages to corporate profits and to global banks via charges for the use of electronic money and other banking services that are not locally based.

Figure 4. Graphical illustration of the design of the Stroud Pound



Source: Graphic drawn by Imogen Shaw

As is clear from Figure 4, it is built into the illustration how the design of the Stroud Pound that it is intended to balance the needs of the different players in the local economy. A market system tends to focus on our individual roles as businessperson, consumer or community member (Cato, 2006a), even when we all tend to play all of these roles at different times in our lives. The Chiemgauer currency design replaces is intended to replace this competitive, individualist ethic with a communitarian one, where shopkeepers accept that they will donate a certain amount of their turnover to local good causes and consumers accept that they will limit their choice and possibly pay higher prices. When persuading local people to join the scheme we were often confronted by the question: ‘What’s in it for me?’. Organisers of the scheme frequently found themselves responding to this question by suggesting that people might come to understand the scheme better if they ask: ‘What’s in it for us?’ However, the low

level of take-up on the scheme suggests how demanding it is to use a currency to change a culture in this way, and has left us questioning whether there may be more efficient ways of building a communitarian culture.

Of course, one has to be pragmatic as well as idealistic and the concern already existing amongst traders about the flight of shoppers to supermarkets and the internet gave us a useful platform to begin talking about the possible benefits of Stroud Pound for their business. A group of traders had already discussed the possibility of a local voucher scheme or reward card, but had not reached the planning stage. Some of them identified Stroud Pound as a viable alternative and so agreed to become members. Others, however, were challenged by the change of mindset the scheme required and decided to hold back, to refuse to join, and even—in some cases—to work against the scheme.

Overall, it seems clear that several centuries of capitalist economics and a culture of individualist consumption that has become stronger over the past few decades (Beck, 1992) has left people with a particular sentiment about how they should behave, and perhaps especially what the role of a business is. This sentiment bears the hallmarks of economic thinking such as there being no such thing as a free lunch and it being natural to be motivated to put oneself first (elsewhere I have referred to these sorts of sentiments as 'capitalist mantras' (Cato, 2006a: 163). DAs an example of the prevalence of such thinking, during conversations with traders we were often told they would not join the scheme because "I am running a business here", as though putting the community first and placing the needs of others as equivalent with one's own was, in itself, bad business practice. Whether it is possible for a currency to change this cultural approach on its own, or whether a sentiment of solidarity needs to precede a self-reliant and egalitarian local community is one question that the Stroud Pound is continuing to test.

We mentioned that the experiment of starting a Regiogeld currency in the contrasting culture of the UK rather than Germany offered an opportunity to explore the impact of the cultural setting on the likelihood of a currency achieving success. The Germany regional money systems or Regiogeld, are the most successful examples of community currencies in developed economies, particularly the Chiemgauer. In total these regional currencies have put some €750,000 equivalent into circulation, providing an important stimulus to their local economies (Theil, 2011). Without an in-depth study of the differences between German and UK economies and systems it is impossible to draw firm conclusions. However, we would suggest that two factors that underpin the success of local currencies in Germany but are absent in Britain are the higher degree of economic solidarity amongst the potential users of the schemes in Germany, and the greater volume of local production that is available there relative to the UK, with its overwhelming reliance on global food supply systems.

Lack of local supplies

As was demonstrated in Section 3 above, Stroud has a range of very different businesses facing quite contrasting supply chains. At one end we have the butchers, several of whom are key supporters of the scheme, and who can easily access their product from local suppliers. At the other we have the clothes boutiques, none of whom have joined the scheme, who rely on global supply chains and whose goods require low-paid workers in distant countries to ensure competitiveness. The music and book shops see in the scheme an opportunity to gain a competitive advantage over internet suppliers who have eaten into their market in recent years and so occupy a middle-ground between the two extremes.

Because of the different nature of local businesses and their supply chains we have made it clear that they are free to negotiate the proportion of any trade which can be recompensed in the local currency. For example, a local bikeshop was very concerned about the possibility of customers buying an expensive bike (a figure of £2,000 was mentioned) and then having to exchange the majority of that, with a possible redemption charge as high as £60. Like the clothes shops, his goods were made overseas and he is also competing with internet suppliers. We made it clear that he could negotiate the proportion of any transaction that was in SPs, but he was concerned about the potentially high risk and decided not to join the scheme.

One of the most enthusiastic supporters of the scheme is the local pub which has become a member. Because they gain their supplies from a the micro-brewery in the town (which accepts SPs), their meat supplies from the local butcher, and vegetables from local producers at the farmers' market, they are easily able to pass on their Stroud pounds and face no risk of redemption charges. This demonstrates clearly the nature of the Regiogeld design in introducing a strong incentive to seek local supplies, but also raises a question about whether a currency is the best first step in achieving this, or whether more direct means of encouraging local production should be prioritised.

5. CONCLUSIONS

As identified in the previous section, the Stroud Pound has achieved some of its objectives. Some traders have begun to think about their supply chains in a different way, although it has to be said that those who are most supportive had already considered this when planning their business. In addition, the extremely limited range of local produce that is available, and the small percentages of locally produced goods that were for sale in the local shops, radically undercut the design of the scheme by making local supply chains near impossible for the largest volume of economic activity in the town.

Another problem facing many Transition activities, not just the local currencies, is that of credibility. Why should people be convinced by a small-scale local scheme with its Ersatz branding and homespun philosophy when they see the

vast global reach of the likes of Tesco, whose vertical and horizontal diversification means that it can meet almost all an individual's needs from within one store.? This is not only an opportunity to save time, but is also an impressive facade which no local shop or currency can compete with. While those of us who understand the vulnerability of the global system, and its unsustainable energy demand, are unimpressed, for many these threats are distant and unconvincing while the appeal of the brands is immediate and strong. This evidence of entirely different beliefs about the central economic forces of our time suggests that establishing any local currency whose aim is to attract even a minority of mainstream trade is going to prove a difficult task. This has led commentators in the Transition movement to suggest that such local currencies may be preparation for a post-crisis rebuilding strategy, since the globalised economy is only likely to be challenged by an internally generated crisis rather than a system of locally based competitor currencies (North, 2010).

The local shops are also challenged by the extraordinary choice offered both by supermarkets and by online retailers. In this era of global choice, consumers have become increasingly demanding—even fetishistic—and are able to make such precise and complex demands that only a large corporation can meet them. In the case of our local currency, for example, ethical, green consumers are refusing to join because they cannot get products that are simultaneously local, organic, fairly traded, and gluten-free. As a result, the only baker to have joined the scheme left recently due to the low level of turnover. Many in the Transition movement believe that this luxury of choice may be short-lived, but by the time we find ourselves in the situation where being hungry leads us to eat what is available, there may no longer be either local production or local traders to sell it to us.

The experiment that is the Stroud Pound continues, with its successes and its failures, as do the other Transition currencies. Perhaps the most telling criticism is that it is not a serious economic endeavour at all, but rather a game for middle-class activists who have other sources of livelihood. While there may be some truth in this accusation, perhaps it also helps us to form a more sanguine view of Transition activity more widely, whether it is guerrilla gardening or darning classes. We might think of Transition as akin to the stage of play for children, whose parents are still really in charge, as the global economy still dominates our lives. It may be unresponsive and authoritarian but it still provides and so we are safe to experiment. We hope that these games, like children's play, supports us in learning the skills we will need when our economic parents are no longer able to support us as they do now.

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International Journal of Community Currency Research

Volume 16 (2012) Section D 116-123

LOCAL EXCHANGE TRADE SYSTEMS IN CENTRAL EUROPEAN POST COMMUNIST COUNTRIES

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ABSTRACT

This paper gives information about Local Exchange Trade Systems in the region of former Czechoslovakia, Poland and Hungary. The transition to a market economy proceeded in different ways in these countries, but similar histories in the last century (communism under Soviet influence) led to only small differences among the countries in the level of motivation and power of their civil societies – and subsequently, in the vitality of LETS circles. In the Czech Republic, the first LETS circle was established in 1999; however, none is active at present. Similarly, in the Slovak Republic, out of 10 to 15 LETS circles formed between 2000 and 2005, only one works at the present time. LETS in Poland developed in the early 90's but soon declined even though a few groups are still active today. LETS in Hungary was very passive, but there have been new signs and initiatives since 2004. The possible reasons for such LETS developments in the so-called Visegrad countries are also discussed in this paper.

ACKNOWLEDGEMENTS

This article was prepared under the research project MSM 6215648902-04 of The Ministry of Education, Czech Republic and in the framework of specific research project of Masaryk university European financial systems, Czech Republic. The Hungarian part of the article was supported by TÁMOP-4.2.1/B-09/01/KMR-2010-0005.

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INTRODUCTION

From a socio-economic point of view, three facts appear very important: experience with a democracy or existence of a civil society, the indebtedness of a country's citizens, and the income inequality between the richest and the poorest within national borders. All countries studied in the paper are post-communist with emerging civil societies, possessing shorter, novel experience with capitalism. There is a small gap between richer and poorer people and the debt of households is relatively small in the Visegrad countries.

Total household debt in Hungary, Slovakia and Poland is under 45% of GDP, and in the Czech republic as little as 20% of GDP. In comparison with the countries of the European Union the level of household indebtedness in proportion to GDP is very low in the Visegrad region (Bittner, 2011). But the situation is changing – the debt of households is increasing.

Kučera (2010) notes the number of individuals in the registry of debtors in the Czech Republic (CZ) rose by 16 percent to almost 868,000 in 2009. The SOLUS organization counts the people who now have, or in the past three years, have had, problems with their repayment obligations. Under SOLUS (2010), which keeps track of borrowers in the CZ, the number of unpaid liabilities increased from December 31, 2009 to September 30, 2010 by 12 percent to 1.7 million (out of 10 million inhabitants). The amount of debt for the period approached 30 billion Czech Crowns (CZK), and the number of individuals, to 931,623. From the CZ's adult population of nine million, already one out of every ten citizens has an entry in the registry.

The situation is currently familiar in all Visegrad countries. In Hungary, the problem has been much worse, due to the prevalence of lending from foreign currencies. People take out loans but cannot pay them back. Concomitantly, they are deeply tied (especially in Hungary) to the emerging global market-economy, from which they put forward all their efforts to increase their earning of mainstream money. Consequently, they retain few resources to help each other.

On the other hand, the Visegrad countries are a part of a region where the smallest gap exists between richer and poorer people. According to the ratio of the UNDP (2008), statistics of income or expenditure shares of the richest group to that of the poorest (10% richest to 10% poorest) demonstrate that the Czech Republic is the second-most equal country (UN R/P = 5.2) after Japan (UN R/P = 4.5). The other Visegrad countries also display high income equality. See, for example, their respective GINI indexes. This is probably an important reason why Local Exchange Trade Systems are not widespread in this part of Europe.

In Hungary, the antecedents that underlie the same symptom of income equality are slightly different. There are fairly large geographical differences. This means, although the poorest citizens live closely together in the suburban,

northeast and southwest regions, they do not possess moveable, changeable resource reserves. Their equality is the equality of poverty. Hungary is still paying off the social cost of its transition into democracy. It is a telling sign that, in Hungarian political and economic language, the expression for transition does not exist; instead, talk revolves around system and regime change. (G.Fodor -Kern, 2009)

GOALS AND METHODS

The goal of this paper is to present current information about the local economic exchange systems (LETS) of Central Europe. It summarizes all available information concerning LETS in Central Europe, i.e., the Czech Republic, Slovakia, Poland, and Hungary. This region is a part of the former Soviet bloc, and the countries became EU members at the same time (in 2004), so the group is a subset of the EU New Member States (NMSs). The presented work focuses on LETS after the transition of 1989. In addition, a possible reason for the failure of LETS development in these countries is considered.

Its authors collected information from literary sources but also from the Internet and by interviewing the active promoters of LETS in each country.

HISTORY OF UNOFFICIAL ECONOMY IN CENTRAL EUROPEAN POST-COMMUNIST COUNTRIES

Alternative economics is not a recent invention. Historically, a multitude of local currencies was the rule rather than an exception. But diversity was caused by large numbers of local governments that wanted to have their own currencies due to the possibilities of currency promulgation, expansion.

Other historical reasons for obtaining individual currencies arose during crisis situations, e.g., during the First World War (Reichel, 2007). Żwawa (2008) cites an example from Poland, where the priest of Kochłowice in Silesia issued a local currency. Other local currencies were issued in the church dioceses of Głogów, with corresponding images of local churches of Tychy, Tarnowski Gory, and Mikołów. Further examples from Poland are known from between 1918 and 1938 (Żwawa, 2008). Cases of an unofficial economy in Czechoslovakia can be obtained in Johanišova (2008), who undertook a historical excursion into the lesser-known aspects of pre-war Czechoslovakian cooperatives. As Zagata (2004) has shown, from LETS developments in neighbouring countries (Austria, Poland, Germany), one cannot rule out the possibility the currency systems based on mutual aid emerged in the former Czechoslovakia between the wars.

Economies of real socialism (1945 in Poland; 1947 in Hungary; and 1948 in Czechoslovakia) were based on other conditions than were those of capitalist countries, so development was quite different in Europe. Unequal conditions and impulses were precipitated, whereas within Western countries there was a sizable expansion of local currencies as well as the LETS themselves. In Soviet-bloc

countries, such alternatives had not emerged. This changed after 1989, when conditions in the ex-socialist nations came closer to conditions in other parts of Europe and the world.

Zagata (2004) asked whether the formalized systems of local currencies would also work in a society with communist experience, for the first experiments occurred merely with complementary currencies in the era of the Great Depression of Europe and North America. As mentioned, the Visegrad countries form a region where the smallest gap exists between rich and poor citizenry, even now after 20 years of changes since 1989.

LETS IN THE CZECH REPUBLIC

Czech LETS, being smaller in scale, had not built up an inclusive alternative as to how to satisfy everyday needs in an environmentally friendly fashion. A large amount of traded goods and services were related to the eco-friendly lifestyle. Three distinctive LETS circles operated in the Czech Republic during the late 90's and until the beginning of the millennium in cities of Brno, České Budějovice and Prague (Foltýnová 2004, Zagata 2004, Zagata 2008). These will be further described. Smaller LETS existed also in the small village of Jindřichovice pod Smrkem in the north of the country (Zagata, 2008). All respective initiatives had related activities whose interests were environmental in nature and scope. The idea of the "Complementary Currency" was more or less additional to their main objective (Zagata, 2004). Time banks existed for a few years in small South Bohemian villages Borovany and Ledenice (Zagata 2008).

The LETS of Agency GAIA in Prague was founded in 1999 as a part of the GAIA Environmental Agency. In October 2001 it had more than 100 members, out of which 20 to 30 were active. LETS issued its own currency, called „chechtáky“ ("smiling money") There was a restriction of account balances, so there remained a limited amount of 600 „chechtaky“ for older members and 400 „chechtaky“ for newer members, until members paid their contributions to the community. In the cases exceeding the allowable limit of the negative, members had to make it clear why the threshold was crossed; as well, how and at what time, accounts would be balanced (Foltýnová, 2004). The system finished activities several years ago.

Another LETS circle operated in the Czech city of České Budějovice. It was created in February 2000 and in 2004 had more than 50 members. Its currency, the "acorn", was equivalently bound to the Czech koruna – i.e., one "acorn" was equal to one koruna. The system had a program for recording transactions. A three-year trade turnover produced a system of about 150,000 "acorns" (Foltýnová, 2004). All activity has currently ceased.

The last (now defunct) Czech circle, LETS in Brno, was developed by NGO Rozmarýnek. This was the only locale where personal collective meetings took place. As Zagata (2005) has stated: "This LETS was also the most closed of

all, because only the kith of current members could join the group". It was founded in 1999 and, at its maximum, had about 40 members. In 2006, all activity halted. The currency issued, the "letničky" ("little year money" or "little LETS"), was equal to one minute of work, so one "letnička" was equivalent to one CZK. Balances employed no legal limits.

As Zagata (2005) stated: "All the groups possessed formal rules dealing with rights and duties of constituent members. At the same time, there were no observed cases of actions that would violate any rules of a particular community. None of the groups formally included in its rules a norm regulating the maximum level of member debt. All the communities kept a 1:1 parity with the official currency."

In 2007 there were already no LETS in the Czech Republic. From our own experience in Brno and discussions with the organizers of LETS in Prague and České Budějovice (Jelínek, 2010) it is possible to consider that the main reasons for suspension of LETS in the Czech republic were:

1. kind of exhaustion or fatigue of the LETS organizers,
2. little real economic need for bartering of the LETS members,
3. other priorities of the LETS organisers, who were closely connected with environmental organizations.

Also according to Zagata (2005), the low activity of Czech LETS can be seen as a consequence of the prevailing way of life of community members. Czech LETS perhaps attempted to represent examples of "green luxury" (coined by Librová, 2003). An important motive for participation in Czech LETS is not economic but social, despite the fact that it is very hard to portray such alternatives in guidebooks that describe the benefits of LETS (Zagata, 2005).

By 2010 a new exchange system had begun with 20 people in the small Moravian town of Litomyšl. Yet even there, lively trading between parties does not exist.

LETS IN THE SLOVAK REPUBLIC

According to Zelnik (Jelinek, 2010), there were 10–15 LETS and time banks in the Slovak Republic between 2000–2005, but most are no longer active now. Similarly to the Czech Republic, most of these representatives were linked with the activities of environmental groups. As in the case of the CZ, the "Complementary Currency" systems appear marginal (Zagata, 2004).

The most popular of LETS systems were in the capital of Bratislava and were called "Svojpomoc" (or self-help); these consisted of about 50 people of different ages and interests. Another closed LETS circle appeared in the community of Zaježová, near Zvolen. Its local monetary system was an example of LETS, which was a part of the community's alternative life. The community continues to organize trips for children and adults, offering a certain kind of envi-

ronmental education. The local system commonly offered services such as plowing, cutting, preparation of wood for winter, construction work and babysitting, as well as building brick stoves, the production of artistic furniture, toys, and knitted items (bags and dolls). It also yielded organic products, especially herbs and dried fruits and vegetables. The system ended several years ago, as did all LETS in Bratislava.

The latest LETS initiatives in Slovakia started in 2010 in the capital Bratislava and are connected to a Web page, www.lets.sk, where 22 participants have been registered (LETS portal, 2010). But there have been almost no exchanges among participants. New activities of the Time Bank emerged in Bratislava in 2010, but the exchange is still in its earliest beginnings. The only longer run of LETS in Slovakia is at the family farm and mill of Mašekov, where a large family and their various friends have exchanged goods and work since the beginning of the millennium (Jelínek, 2010).

LETS IN POLAND

The situation in Poland has been described by Żwawa in *Ekonomia Społeczna Teksty* (2008). LETS started there in the 90's with articles by Reichel about LETS – in the magazine, "Zelené brigády" (Green Brigades), and later in his book about local currencies (Reichel, 1997). After 2000, new and more successful attempts at starting LETS began in Kraków, Poznań, Wałbrzych and Łódź. Other LETS circles were formed in Warsaw, Wrocław, Gdańsk, Białystok. All fell into disuse, as did the most advanced of the group, those in Kraków and Poznań.

Chmiel (2008) prepared a special map of the Time Banks in Poland in 2008, where 24 Time Banks are listed. Few, if any, are still in operation, as the present authors tried Web links, and the Web pages usually did not work or showed different information for the city or region. Services exchanged in the Polish banks were diverse: from baking cakes, teaching languages (including Braille), and playing instruments (e.g., clarinet), through credit counselling and assistance in the writing of documents, car repair, child-care, all the way to facial massage and games of Canasta. Valuable services were also offered related to computer science.

Another new generation of LETS was inaugurated in Poland, with the domain, <http://lets.pl/>. Its idea has been to coordinate all the LETS activities in Poland. The only current LETS group in Poland is the one in the region of Silesia and Zagłębie (more at www.bz.lets.net).

In September 2009, the Board of Revenue issued an interpretation at Katowice stating that free help is considered income and must have taxes paid around it (Wojtasik, 2009). As a result of the Time Banks' management and queries to the board as to whether services provided in connection with activities should be taxed, the chamber

spokesman explained they should not. In the case of other services, neither party receives any income; so no tax obligation arises, unless there is a large discrepancy in the value of such services.

LETS IN HUNGARY

Social and theoretical aspects of the local mutual-aid circles

When Peter North undertook his latest research in Hungary in 2003 and published his work (North, 2007), he only mentioned six LETS circles; out of these only two had existed in 2003: the Talentum and KÖR. By 2004, new signs and initiatives had emerged. One was the increased number of active LETS circles in the country. As of today, 13 different circles have their own individual Web sites (listed in Appendix 3). Besides, there are others without a Web presence.

North postulated the following barriers to the creation of LETS circles: (1) lack of credibility; (2) inability to understand the use of mutual-aid networks; (3) the needs of members not being fully met by a circle's services and initiatives; (4) distrust toward all new groups; and last but not least, (5) difficulty in overcoming the problems of everyday life. The situation in Hungary till the late eighties seemed to be better due the 2nd and 3rd shifts, the backyard agriculture ("háztáji") and the so-called economic work teams ("GMK"), this "happiest barrack" period was called "Goulash Communism". It has to be stated though, that this was reached at the cost of family and social life: their network fell apart.

No wonder that North's above-mentioned reasons have not dissipated, and moreover, difficulties in overcoming the problems of everyday life have increased. Living standards for the average Hungarian have greatly decreased (Hoós-Lóránt-Morva, 2001 and Kovács, 2010). We should mention the spread of the so-called Complementary Currency concept in Hungarian literature and corresponding theoretical developments. Substantial books (Gesell, 2004 and Síklaky, 2003) were published on the subject. A related article was made public on the home page of the Hungarian Financial Supervisory Authority (Kun, 2006). Lectures and conferences attracted many; there are now two¹ Hungarian Complementary Currency homepages similar to <http://www.complementarycurrency.org/>.

However, two important sources of information were notably absent from Hungarian intellectual discourse: (1) Douthwaite's (1996) *Short Circuit*, which was never translated into Hungarian, making it accessible only to English readers; and (2) a far earlier Hungarian text, *Money*, by Fischer-Szász (1935), circulated right after the Great Depression in Budapest. The latter discussed the "Wörgler Notgeld", introduced by Major Michael Unterguggenberger, and the "Europa", suggested by Joseph Archer and Philibert

1 <http://helyipenz.linkpark.hu> and <http://alternativ-gazdasag.lap.hu/>

Besson. The work of Fischer-Szász was in a limited private edition and did not have much influence.

The first wave of Hungarian LETS circles

The above-mentioned Talentum and KÖR belong to the first wave of LETS circles in Hungary. These were inspired and ideologically supported from abroad, which is unique within post-communist countries. An Austrian non-government organization (NGO), called HIFA, promoted the Talentum group in 1994. Four years later, in 1998, the British Council financed a team of twelve to study the best LETS practises in the United Kingdom. This initiative developed five individual pilot projects in Hungary, out of which only KÖR is still in operation.

Features of the first-wave LETS movement in Hungary are more or less similar to the LETS in the other Visegrad countries (Zagata 2004, 2005). Representatives of the first-wave LETS movements such as Talentum and KÖR kept their memberships, although presently there are many inactive members.

Talentum (total headcount having increased slowly to 226 members) currently meets at a club meeting every two months, where a part of the transactions are made on the spot. Talentum has a list of wanted-and-offered items, but this list is not frequently updated. Deals between partners are based on personal agreements, denominated in Talentum's LETS currency, which cannot be converted to Hungarian forints (HUF). Communications between the members are accomplished by phone or through a Googlegroups.com-type URL. Yearly dues and the documentation of transactions are managed by an administrator (who receives an honorarium in the Talentum currency); this creates a steadily growing positive balance on behalf of the administrator. A troublesome factor emerged: most members have a strong negative balance, except for the record keepers and the administrator, whose positively balanced account is almost as large as the sum of all other members' negative balances. As this became clearer, some members got very upset and felt a negative balance was morally wrong, wanting to step back.

At present, there are two main reasons for the lower number of transactions: first, demand came to mismatch supply because preponderances of its members were intellectuals; their needs were quite homogenous: they sought assistance to provide maintenance, repair, etc., for which the supply was small. The second reason was true for the entire region – the poverty was widespread, the cash and, consequently, the free time of people were so low that even if people wanted to, they just could not give mutual services to each other.

The KÖR in Szolnok still exists as it did at the time of North's research. Ferenc Tóth, the group's head, notes people cannot get rid of the mindset of patriarchal dependency and care, and so, cannot build their own community with a system of self-help in place. This circle was transformed into a charity shop for clothing and small appliances, with

some monthly services added. Tóth, who resigned and was upset, said: "...we can't speak about community building. The motivation for realization of self-interest in this region is so high, that there is less motivation for creating communal forms and public spirit."

The second wave of LETS circles

After the first wave, there came a period of three passive years. This was followed by a second LETS movement, which was inspired, first, by theoretical developments; and second, by crisis-literature about the regime change, which was said to have made things worse. Hungarians saw that the transition did not fulfil any of the dreams that had been associated with it. It became evident that, behind the escalated economic crisis, there was a general social, political, and spiritual crisis going on. As well, the effective political changes happened much earlier: in fact, during the last decade of the Kádár regime. There appeared a "nothing-has-changed" feeling that was summed by: "tanks are going; banks are coming".

Changes in the transfer of knowledge resulted in Hungarians becoming more aware of their own possibilities. So, it was a time for the next wave; several LETS circles were founded. In Hungary there were several initiatives to revive the tradition of so-called "kaláka", which is a system of complex reciprocal informal agreements. "You give me today and get something from me tomorrow." – as Zoltán Mikheller, the founder of the Bakonyi CsereKör formulated. Above the several LETS circles was an umbrella organization, called Korona Csereklub. It was created by the unregistered civil social organization (CSO), the Korona Csereklub Egyesület, in 2007.

The Korona Csereklub, whose members were from smaller, more local circles, used Internet-platform-developed accounting software. Circles created their own currency, which did not accrue interest, and they made their own decisions about entrance to the circle. The Korona Csereklub served as an adviser, distributing know-how to help with communication and concurrent trading among various LETS circles. It promoted regional self-sufficiency and reduced the ecological footprint – for the protection of local markets and workplaces.

The Korona Csereklub contributed to the creation of seven further LETS circles; out of these, the most active are the Pilis Csereklub and Bakonyi CsereKör.

Think local in many ways, but always in community

In Hungary, as compared to the other Visegrad countries, the following feeling has strengthened: one simply could not build and create community but must also live and think community. The works of the Hungarian economic historian, Karl Polányi, had a great influence on how the intellectual segment of Hungary conceived of money, the market, and change (Polányi, translated, 1997). It was widely believed the money system was a social institution: the primary relationship between a country's citizens and their money must be changed before any introduction of a

relationship-organiser such as an alternative-currency system.

The second wave LETS movement's primary task was to define a self-regulated, sustainable, resilient community. Not only NGOs but also undeveloped, smaller regions, municipalities and small businesses sought this kind of community. The common goal was to create a new way of behaving. There is no space at present to discuss these initiatives, for today's groups are diverse, ranging from Helyi Piac (<http://www.helyipiac.eu/>) to the ÉrMe Club (<http://www.ermehalo.hu/>)

Beyond LETS in Hungary

As mentioned, the situation in the last eight years slowly changed as people became more motivated and well-informed. In 2010 a legal proposal was created by the Parliament, which would serve the cooperative communities (Parliament, 2010). From this proposal, works and services in the household would be free from the Value-Added Tax (VAT). Since then it has been approved²: Hungary introduced from 1 January 2011 a new VAT category, called cost sharing group „együttműködő közösség”. It provides a VAT exemption for services provided by a cost sharing group to its members, valid for civil associations especially. This could be a great support not only in financial service sector but for Hungarian LETS circles in the future.

The spreading of the Internet, card and mobile payments, etc., also was helpful. The legislative procedure, through which the 2007/64/EC European Union directive (EC, 2007) - Payment Service Directive - was adopted into the Hungarian law, supports the use of community currency. This legislation introduced a new form of enterprise – the payment institution for payment services (OJ, 2007, pp. 9–15.) – and defined within payment services the emission and acceptance of payment instruments: that is, complementary currencies and all payments by telecommunication, digital and IT devices (OJ, 2007, p. 36). In the latest news, the government plans to introduce a standardized card system in the next two years.

In 2009 Kékfrank was introduced in Sopron (Perkovátz, 2009, and Szalay, 2010). Even its preparations caused a huge media response; all over the nation it was deemed a good example. Kékfrank is the first currency where the users are not only private people but it also connects businesses and the consumers. The idea of the Complementary Currency appeared in the strategic program of one of the candidates for mayor of the town of Bicske (Index, 2008), and was an important part of a campaign program for a Hungarian political party that has representation in parliament during its municipal elections (Jobbik, 2010).

We agree with Zagata (2004): for post-communist countries, “The complementary currency system is gaining a

firm position within the development of regional administration bodies”. It is a feature unique to Hungary that Complementary Currency is supported in so many ways at municipal levels³.

LETS IN OTHER POSTCOMMUNIST COUNTRIES

The situation in other post-communist, Eastern European countries is beyond the scope of this work, although a few local currencies have been spawned in Russia, Bulgaria, Ukraine, and Croatia. Two institutions from Russia can be noted as examples.

In Russia, there was a widespread system based on the idea of local-exchange trading systems, called Billex (Billex, 2011). The system saw its greatest advantage to be the utilization of a kind of “bills of exchange”, as an alternative to banknotes. Accordingly, a bill of exchange represented a mutual relationship between debtors and creditors, which differed from governmental banknotes in that it must be paid back up to a maturity date. So bills of exchange are now used by members and should, in theory, be a better means of exchange and retain value. A possible punishment for the failure to make payments is the loss of a debtor's property (in accordance with the Russian bill legislation). The value that serves as the system standard is gold. But such a system does not require the gold standard, for this serves only for the evaluation of transactions. Another idea mentioned by Kenneth (2002) from the Kostroma district, about 300 km from Moscow, is similar. The small district of Kostroma started using their own special currency (greatly thanks to support of Gorlovsky State Farm, the mainstay of the district's economy), and this currency helped in numerous ways, excepting the incremental changing of living standards and the fighting of social evils such as alcoholism.

CONCLUSION

Only the future will tell whether the number of economically enlightened individuals (in Poland, the Czech Republic, the Slovak Republic and Hungary) will reach a critical mass. Instead of strictly following Western LETS models, first, local characteristics, ideas and social needs must be identified and addressed. Economies in real socialism were based on other conditions than were those appearing in Western European countries. LETS and economic alternatives never emerged in Visegrad countries until after communism was at an end. Organised groups bringing decentralized local economic systems came into being after 1989. Conditions in ex-socialist countries have come closer and closer to the conditions in the rest of the democratic world. Yet there are substantial differences. The short experience of a democratic, younger civil society, and low but constantly growing indebtedness combined with low income inequality between the rich and the poor make the ex-socialist countries unique. These systems definitely do not

² VAT Act Article 85 Section (1) point p.

³ As it is also noticeable in the case of Balatoni Korona.

involve large populations, as do some localities in Western Europe.

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APPENDIX

1. Some LETS homepages in Poland

<http://lets.pl/>
<http://krakow.lets.pl/>
<http://www.lets.most.org.pl/krakow/pl/index.htm>
<http://lets.bzzz.net/>

<http://www.bartersystem.pl/serwis/>

2. Some LETS homepages in Slovakia

<http://www.lets.sk>

www.ffmm.sk

<http://www.casovabanka.sk>

3. Some LETS homepages and initiatives in Hungary

<http://www.koronakor.hu/pilis.php>

<http://www.bakonyicserekor.sokoldal.hu/>

<http://www.koroskor.hu/>

<http://hiraba.lapja.hu/>

<http://hunglets.freeweb.hu/>

<http://szivesssegbank.hu/>

<http://www.suska.hu/>

<http://www.ad6kap6.hu>

<http://zolmik.hupont.hu/>

<http://ad-kap-tar.atw.hu/>

<http://www.bordanyet.hu/index.php?content=cikk&id=418>

http://banya-tanya.hu/batori_kalaka.html

<http://www.ermehalo.hu/>

<http://www.helyipiac.eu/>

4. Some LETS homepages in other post-communist countries

<http://www.complementarycurrency.org/>

<http://billex.tomsk.ru/sm/index.php>

<https://cromland.cromalternativemoney.org/do/login>

<http://www.bankvremeni.org/intro.jsf>

<http://www.infocentrebg.com/eng1.html>



International Journal of Community Currency Research

Volume 16 (2012) Section D 124-135

AN EMPIRICAL STUDY OF THE SOCIAL EFFECTS OF COMMUNITY CURRENCIES

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ABSTRACT

This paper introduces the concept of social support as a social effect of community currencies and explores different ways of measuring it. We used a questionnaire survey and social network analysis of transactional records to conduct a comparative case study of two community currency organizations: Ichi-Muraoka in Japan and Bytesring Stockholm (BYTS) in Sweden. Our analysis yielded the following results with respect to social support provided by community currencies: (1) while the transfer of social support by community currencies does not affect the quality of life of all users in a significant way, it makes users aware that social support can be part of their lives if they become conscious of it; and (2) community currencies are peripheral and supplementary support sources for many local residents. These results show that community currencies are effective as a system to provide social support to local residents.

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1 INTRODUCTION

In this paper, we assert that community currency is an effective system of social support for local residents. We do so through a comparative analysis of "Eco Money¹" organizations in Muraoka-town (currently Kami-town), Japan, with the Local Exchange Trading Scheme/System (LETS) organization in Stockholm, Sweden. We also discuss the importance of assessing the "social effects" brought to communities by community currencies and propose to assess social support as one such social effect. There are several systems of community currencies, but this paper focuses on the consumer-to-consumer (C2C) type, in which members exchange their goods and services mutually.

Community currency studies in Japan have been rather concentrated on economics, as the word "currency" suggests. Examples of this include the economic anthropologist Makoto Maruyama, who introduced community currency to Japan through his writings from the latter half of the 1980s through the 1990s, as well as scholars who tried to promote community currencies with Maruyama, such as Rui Izumi and Eiichi Morino, whose work is based on environmental economics. When we look at the current situation of community currencies, however, the process in which certain effects are brought to communities as a result of transactions is related to "social" elements, which obviously cannot be dealt with in the field of economics. Of course, these economists have not been ignorant of the "social" aspects of community currencies. Economic anthropology and ecological economics are positioned in Yoshiro Tamanoi's (1978) thought, which aims to balance economy and ecology and is strongly influenced by K. Polanyi, who pointed out the existence of value exchange activities in non-market economies based on the principles of reciprocity and redistribution. Makoto Nishibe also stated that community currencies are communication media that have aspects of both "economic media" as a currency and "socio-cultural media" as a language (Nishibe, 2000) and placed this concept at the core of his own community currency studies. However, these theories and approaches do not explain the "social" aspect of community currency activities empirically.

In sum, researchers of community currency must establish a "social" approach towards it. An analysis capable of empirically explaining the "social" realities of transactions as well as the nature of effects brought to communities needs to be conducted. As for the former, the employment of a new economic-sociology approach can be cited as a candidate (Nakazato, 2007). This approach analyzes economic actions conducted in social structures, particularly from the viewpoint of "embeddedness" into a social network structure surrounding the actor. The present paper addresses the latter: the effects brought to communities.

The need to assess social effects is urgent in two ways. First, the community currency movement in Japan subsided after the period of 2003 to 2004, and organizations are entering a stage in which it is necessary to clarify what is actually brought to local communities through community currency activities. Second, assessing the "effects" of organizations' activities has practical meanings for organizations that are currently under operation, as a guideline for their future activities or a scheme to sustain the motivation of members. However, unlike the economic effects measurable to a certain degree by indicators such as the volume of currency circulation and the speed of circulation, the social effects do not have clear criteria for assessment. In recent years, an effort has begun to assess the social effects of community currencies by using the concept of social capital to address this problem (Jacob et al., 2004; Richey, 2007; Kichiji et al., 2007). In this paper, we propose an assessment of social support to limit the scope covered by the concept of social capital.

2 METHOD

2.1 Community currency and social support

Social support is defined as "various aids, tangible and intangible, which an individual obtained at a specific point of time from others with whom he/she has a relationship" (Minami et al., 1988). Note that "others" in this definition are not limited to those engaged in providing support publicly or systematically, such as social workers and medical professionals. This means an ego receives aids from various others with whom he/she has relationships in daily life, such as family, neighbors, and friends. Sociological ideas in social support studies can be seen in the social integration approach as well as social support network studies. The former focuses on the ego's affiliation and participation in social groups and activities, while the latter emphasizes social network structures in receiving support. Granovetter's discovery of "the strength of weak ties" (1973) as well as Wellman's development of an urban-sociological personal network analysis (1979) represent the latter group, and their use of the social network approach has achieved several important contributions to social support studies from the viewpoint of sociology.

Previous community currency studies occasionally cited social support as a social effect of community currency activities. Community currencies, especially those that focus on social welfare, such as "Eco Money," state that "reciprocal network" building among community residents is the purpose of their activities, and Williams et al. (2001) explicitly use the term "social support network" as an effect of community currency activities. However, such terms were not used in a strictly academic sense; therefore, neither the concrete meaning of "reciprocal network" and "social support network" building, nor the way to measure

1 A community currency system unique to Japan, which was developed by Toshiharu Kato. Its characteristics consist of the issuance of coupons and the limiting of the types of goods and services for transactions to those not circulated in the market. There is a general emphasis on purposes related to social welfare, such as the invigoration of volunteer activities.

them, was clear. Social support studies, at this point, have already accumulated research results both theoretically and empirically; thus, theoretical elaboration and assessment of “reciprocal network building” and “social support network” are possible.

Moreover, the introduction of the concept of social support is significant in reconsidering not only “for what it will be effective” but also “for what range of people it will be effective.” The results of previous studies reveal that the effect brought to regional economies by community currency activities is insignificant and that the beneficiaries are individual members participating in the activities, rather than the local community as a whole with respect to social effects. Williams (1996), for example, surveyed the LETS organizations in the United Kingdom and concluded that LETS serves as a system for individual members to help improve their quality of life. In line with his observation, we presuppose that the beneficiaries of community currency activities are limited to the members of community currency organizations rather than the local community as a whole and that community currencies are effective in helping members support their lives psychologically and materially.

2.2 Viewpoint and hypothesis

Before turning to the analysis, we will consider some theoretical and methodological points.

First, we assume that six types of social support can be received as benefits of participation in community currency activities²: emotional support (providing psychological stability and healing), instrumental support (providing goods and services), informational support (providing information such as advice), appraisal support (providing interpersonal appraisal leading to self-assurance) (House, 1981), social companionship support (providing social affiliations and human connections) (Rook, 1987), and economic support.

Second, studies of social support networks often use the analytical concept of a “network,” while they tend to simplify the functions of a “network” and suggest that the more ties there are, the greater amount of support the ego receives (Wellman, 1981). In this respect, the statement, “A network is more than the sum of its ties,” made by Wellman & Gulia (1999), succinctly expresses the importance of the social network approach in social support network studies. The presence of ties does not always have positive effects on a person’s mental and physical health. Ties could have a negative impact or cause negative support, depending on their nature and network structures. Therefore, the proposition that “the more ties there are, the greater amount of support the ego receives” is not true. In addition, a multiplicity of ties assumes new characteristics depending on the mutual relationship between them. Accordingly, the effects of indirect ties not limited to direct acquaintance-

ship need to be considered. Fortunately, many community currency transactions are recorded in the form of checks or endorsements on currency, or records in electronic accounts. The application of the social network approach is made possible by depicting the transactional relationship based on these records.

Third, the importance of “the strength of weak ties” (Granovetter, 1973) should be considered in this study. Granovetter claimed that various interpersonal and social resources, which are hardly obtained from a primary group connected by “strong” ties, are brought about by “weak” ties with external groups. “Weak” ties are assumed to be “bridges” that join separate cohesive groups, such as family and intimate friends, and play the role of circulating heterogeneous resources among the groups.

While the “strength” of ties is defined in various ways, Wellman & Wortley (1990) criticized the mainstream definition, which measures the “strength” of ties by the frequency of interpersonal contacts, because social relationships exist with a high frequency of contacts regardless of individuals’ will, as seen in workplace relationships with colleagues. Instead, they measured its “strength” on the basis of three criteria: “intimacy” (the degree of being intimate), “voluntary” (the degree of making spontaneous contacts), and “multiplicity” (the degree of contacts made over multiple social contexts) in order to remove such a bias. Interpersonal relationships brought together by community currency transactions lack “intimacy” and “multiplicity” unless specific conditions are met. The tie of a community currency transaction is therefore a “weak” tie as a default state, and focusing on the strength of “weak” ties is considered appropriate. This also leads us to the assumption that the social support provided by community currency activities is, at least in its early stage, not assumed to serve as all of the social support received by one person in his or her daily life. In other words, the support provided by “weak” ties in community currencies is considered to play a peripheral role, supplementing the support that each person receives from his or her primary group.

Finally, since a social network analysis of transactional relationships alone cannot assess types of support received from activities outside of transaction activities—with the exception of instrumental support and economic support—conducting a questionnaire survey in addition is desirable.

Based on the above considerations, this paper presents the following four hypotheses for analysis.

- Hypothesis 1: Community currencies can be a means of providing social support.
- Hypothesis 2: Community currencies are a source of peripheral and supplementary support provided to their members.

2 For a more theoretical discussion, methodological consideration from the perspective of social network analysis, and information regarding the relationship between social support provision and community currency transaction, see Nakazato (2006).

- Hypothesis 3: The advantage of community currencies as the source of social support is in their ability to utilize the strength of “weak” ties.
- Hypothesis 4: The way in which social support is provided by community currencies is influenced by the social network structure of the members.

2.3 Outline of the Survey

We selected the “Eco Money” organization Ichi-Muraoka in Muraoka-town, Hyogo Prefecture, Japan and the LETS organization Bytesring³ Stockholm (BYTS) in Stockholm, Sweden as subjects. Since “Eco Money” and LETS share the basic scheme of transaction, we can conduct a comparative analysis of them.

Muraoka-town is a mountain village currently undergoing depopulation; it has an area of 165.66 km² and a population of 6,117 (Japan census 2005), and there are only one or two daily bus services that serve the area every hour. Ichi-Muraoka⁴—which has adopted “Eco Money”—was founded in December 2002 and was operated by the Muraoka-town Council of Social Welfare (currently the Kami-town Council of Social Welfare, Muraoka Branch) from 2002 to 2007. The mean number of participants during these periods was 91.4. To my best knowledge, BYTS, established in 1992, is the oldest and largest LETS organi-

zation to date in Sweden. Greater Stockholm has an area of 6,519.30 km² and a population of 2,054,343 (Statistiska Centralbyrån 2010) with a developed subway network that

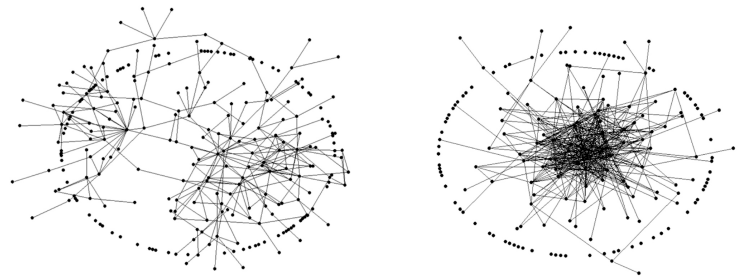


Figure 1. Transactional network graphs of the two organizations (Left: Ichi-Muraoka; Right: BYTS)

facilitates trade even in the winter season during heavy snowfall. The mean number of participants is 113.5 people per year and BYTS operates there in the form of a nonprofit organization⁵.

To start with, we collected transactional records for a transaction network analysis⁶. This was done from December 2002 to March 2006 for Ichi-Muraoka and from January 2002 to December 2005 for BYTS. The transaction records

Table 1. Composition of Ichi-Muraoka and BYTS

		N	%			N	%	
Ichi-Muraoka	Sex	Male	42	35.3	Occupation	Full-time Job	23	19.3
		Female	75	63.0		Housewife (Husband)	33	27.7
	Age	25-44	3	2.5		Housewife (Husband) and Part-time Job	5	4.2
		45-64	24	20.2		Retiree	22	18.5
		65-74	45	37.8		Others	22	18.5
75-	43	36.1						
		N	%			N	%	
BYTS	Sex	Male	16	24.6	Full-time Job	11	18.0	
		Female	49	75.4	Part-time Job	13	21.3	
	Age	25-44	16	25.8	Self-employed	6	9.2	
		45-64	26	41.9	Unemployed	2	3.3	
		65-74	18	29.0	Pensioner	25	38.5	
75-	2	3.2	Receiving Sickness Benefits	3	4.9			
				Student	1	1.5		

3 The word bytesring means “LETS” in Swedish in this context.

4 The purpose of Ichi-Muraoka is “to form a ‘mutual help system’ within the entire village” for the purpose of dealing “with difficulties in solving life-related challenges among families and small regions due to depopulating and aging of society” (21st Century Research Organization for Human Care, 2004). It operated for seven half-year periods, and ceased its activities in 2007.

5 The purposes of “BYTS” include (1) promotion of reuse, (2) building relationships (networks) among members and local residents, and (3) providing alternatives for the existing socio-economic system. The idea of establishing an alternative socio-economic system is emphasized when BYTS is compared with LETS in Canada, whose main purpose is to invigorate the regional economy. For more information about BYTS, see Nakazato and Hiramoto (2007).

6 In order to investigate the transactional records, we adopted a social network analysis because we needed to quantitatively analyze transactional relationships. Social network analysis is a research method that calculates the properties of social networks (e.g., e-mail exchanges, trading partners, and interpersonal relationships). For instance, each member of a social network has a degree of centrality in the network, and the social network itself has density. We can measure these indexes by calculating the relationships of vertices and lines. In the graph (Figure 1), a vertex indicates a member and a line indicates a trading relationship.

show that the average annual circulation volume was 283.43 transactions for Ichi-Muraoka, while BYTS has a mean annual circulation amount of 32,360.25 byts (1 byts = 1 Swedish krona), which corresponds to 256.25 transactions. These figures demonstrate that the contributions to the regional economy by Ichi-Muraoka and BYTS are small when we limit the analysis to the economic aspect. We drew a transactional network graph based on these records (Figure 1).

In addition, we conducted mail surveys for Ichi-Muraoka from March to April 2006 and for BYTS from July to August 2006. All of the members of Ichi-Muraoka and BYTS completed a six-page questionnaire on paper, which was written in Swedish, and returned it via mail. We received 119 responses (54%) from 220 members of Ichi-Muraoka and 65 responses (80.2%) from 81 members of BYTS. Table 1 shows the membership composition of both organizations. The proportion of female users is high in both organizations, and the elderly are the main users of Ichi-Muraoka.

3. RESULTS

3.1 community currency as a means of providing social support

First, we investigate whether or not the use of community currencies generates transfers of social support. Two question items are used in conducting this analysis:

(1) "How satisfied are you overall with the following support that you presently receive from others?" (hereafter, "the degree of satisfaction with the support received in daily life"). This is rated on a five-point scale, from "not satisfied at all" to "very satisfied."

(2) "How helpful is the support of <name of community currency> to you?" (hereafter, "the degree of support received through participation in community currencies"). This is rated on a five-point scale, from "not helpful at all" to "very helpful."

These two questions were asked regarding the six types of support mentioned above. The terms used in the questions are "emotional support, such as giving affection, a sense of security, entertainment" (emotional support); "behavioral and instrumental support, such as doing something or transferring something for the recipient" (instrumental support); "informational support, such as giving a piece of advice or teaching something" (informational support); "appraisal support, such as praising or showing appreciation" (appraisal support); "economic support, such as giving money or helping with cost saving" (economic support); and "connection support, such as increasing the number of acquaintance or spending time together" (social companionship support).

The results of a principal factor analysis with a varimax rotation conducted with members of Ichi-Muraoka and BYTS in response to items (1) and (2) are shown in Tables

Table 2. Social support scores and results of factor analysis for Ichi-Muraoka

Items	The degree of satisfaction with the support received in daily life		The degree of support received through participation in community currencies	
	Factor I	α	Factor I	α
Informational Support	.859	.884	.788	.904
Social Companionship Support	.812		.748	
Instrumental Support	.768		.810	
Appraisal Support	.737		.830	
Emotional Support	.686		.843	
Economic Support	.653		.692	
Eigenvalue	4.09		3.84	
Contribution Ratio	68.1		64.0	
Cumulative Contribution Ratio	68.1		64.0	

Table 3. Social support scores and results of factor analysis for BYTS

Items	The degree of satisfaction with the support received in daily life			The degree of support received through participation in community currencies		
	Factor I	Factor II	α	Factor I	Factor II	α
Emotional Support	.965	.058	.805	.966	-.036	.847
Appraisal Support	.660	.391		.701	.178	
Informational Support	.543	.422		.562	.367	
Social Companionship Support	.530	.417	.558	.706	.196	.638
Instrumental Support	.198	.872		.395	.499	
Economic Support	.146	.469		.014	.901	
Eigenvalue	3.16	1.02		3.07	1.21	
Contribution Ratio	52.7	17.0		51.2	20.2	
Cumulative Contribution Ratio	52.7	69.7		51.2	71.4	

2 and 3. We find a single-factor structure in Ichi-Muraoka, which includes all six types of support with respect to both “the degree of satisfaction with the support received in daily life” and “the degree of support received through participation in community currencies.” As for BYTS, we find a dual-factor structure, consisting of the first factor (“support received from interaction with people,” including “emotional support,” “appraisal support,” “informational support,” and “social companionship support”) and the second factor (“support received from materials,” which includes “instrumental support” and “economic support”) with respect to both “the degree of satisfaction with the support received in daily life” and “the degree of support received through participation in community currencies.”

We verify whether there is any relationship between factor scores and the frequency of use of community currencies by the members. The correlation coefficients between each factor score and the amount of goods and services received or provided through community currencies are shown in Table 4. Spearman’s rank-correlation coefficient was used because “the amount received” and “the amount provided” were not normally distributed. This reveals that in both Ichi-Muraoka and BYTS, there is almost no relationship between the frequency of use of community currencies and “the degree of satisfaction with the support received in daily life,” although “support received from interaction with people” in BYTS tends to be positively correlated with “the amount received” of goods and services. However, “the degree of support received through participation in community currencies” has a positive correlation in many items with the frequency of use of community currencies.

In sum, the transfer of social support by community currencies does not affect the quality of life of all members in a significant way, but makes members aware that this is something that could be related to their lives if they become conscious of it.

3.2 The position of social support provided by community currencies in each individual’s life

Next, we explore where the support received by using community currencies can be positioned among social support sources received by each individual. One question concerned choosing five out of seven categories—“friends,” “family,” “neighbors,” “colleagues,” “community currencies,” “employees of public organizations,” and “others”—and ranking them in order of the frequency of opportunities to receive support. We also allotted points to each category in reverse order (zero points given to the categories that were not chosen).

Tables 5 and 6 show the mean score and standard deviation (in parentheses) of each category for Ichi-Muraoka and BYTS. In both organizations, community currencies ranked fifth out of the seven support sources, which indicate that they have become a source of peripheral support for members.

Table 4. Correlation between social support factor scores and received and provided community currencies

		Correlation Coefficients	
		The amount received	The amount provided
Ichi-Muraoka	Factor score of “the degree of satisfaction with the support received in daily life”	-.053	.026
	Factor score of “the degree of support received through participation in community currencies”	.187	.329 ^(**)
BYTS	Factor score of “the degree of satisfaction with support received in daily life” —“support received from interaction with people”	.244 ^(†)	.121
	Factor score of “the degree of satisfaction with support received in daily life” —“support received from materials”	-.026	-.061
	Factor score of “the degree of support received through participation in community currencies” —“support received from interaction with people”	.446 ^(**)	.469 ^(**)
	Factor score of “the degree of support received through participation in community currencies” —“support received from materials”	.132	.309 ^(*)

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$

Table 5. Ranking of support received by members of Ichi-Muraoka in daily life

Ranking	1	2	3	4	5	6	7
Support Sources	Family	Neighbors	Friends	Employees of Public Organizations	Community Currencies	Others	Colleagues
Score	4.37 (1.49)	3.41 (1.25)	2.82 (1.30)	1.18 (1.39)	0.54 (0.92)	0.51 (1.07)	0.40 (1.01)

Table 6. Ranking of support received by members of BYTS in daily life

Ranking	1	2	3	4	5	6	7
Support Sources	Friends	Family	Neighbors	Colleagues	Community Currencies	Employees of Public Organizations	Others
Score	3.79 (1.35)	3.33 (2.08)	1.40 (1.66)	1.31 (1.57)	0.98 (1.48)	0.67 (1.55)	0.60(1.26)

Table 7. The differences between the mean support scores in Ichi-Muraoka

	Emotional Support	Instrumental Support	Informational Support	Appraisal Support	Economic Support
Emotional Support (n = 74, mean =3.27, SD = .98)					
Instrumental Support (n = 71, mean =3.17, SD = .97)	-.06				
Informational Support (n = 70, mean =3.20, SD = 1.00)	.01	.03			
Appraisal Support (n = 70, mean = 3.09, SD = 1.00)	-.09	-.04	-.09		
Economic Support (n = 69, mean= 2.64, SD = 1.08)	-.52(**)	-.50(**)	-.54(**)	-.43(**)	
Social Companionship Support (n = 70, mean = 2.99, SD = 9.4)	-.20(*)	-.16	-.22(*)	-.13	.32(*)

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$

Table 8. The differences between the mean support scores in BYTS

	Emotional Support	Instrumental Support	Informational Support	Appraisal Support	Economic Support
Emotional Support (n = 57, mean =3.02, SD = 1.25)					
Instrumental Support (n = 59, mean =3.56, SD = 1.01)	.59(**)				
Informational Support (n = 60, mean =3.48, SD = 1.00)	.47(**)	-.10			
Appraisal Support (n = 59, mean =2.98, SD = 1.21)	-.04	-.60(**)	-.49(**)		
Economic Support (n = 59, mean =3.54, SD = 1.07)	.55(*)	-.05	.11	.59(**)	
Social Companionship Support (n =60, mean =3.47, SD =1.13)	.47(**)	-.12	-.02	.47(**)	-.11

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$

Figure 2. Advantages of support received by the use of community currencies (BYTS)

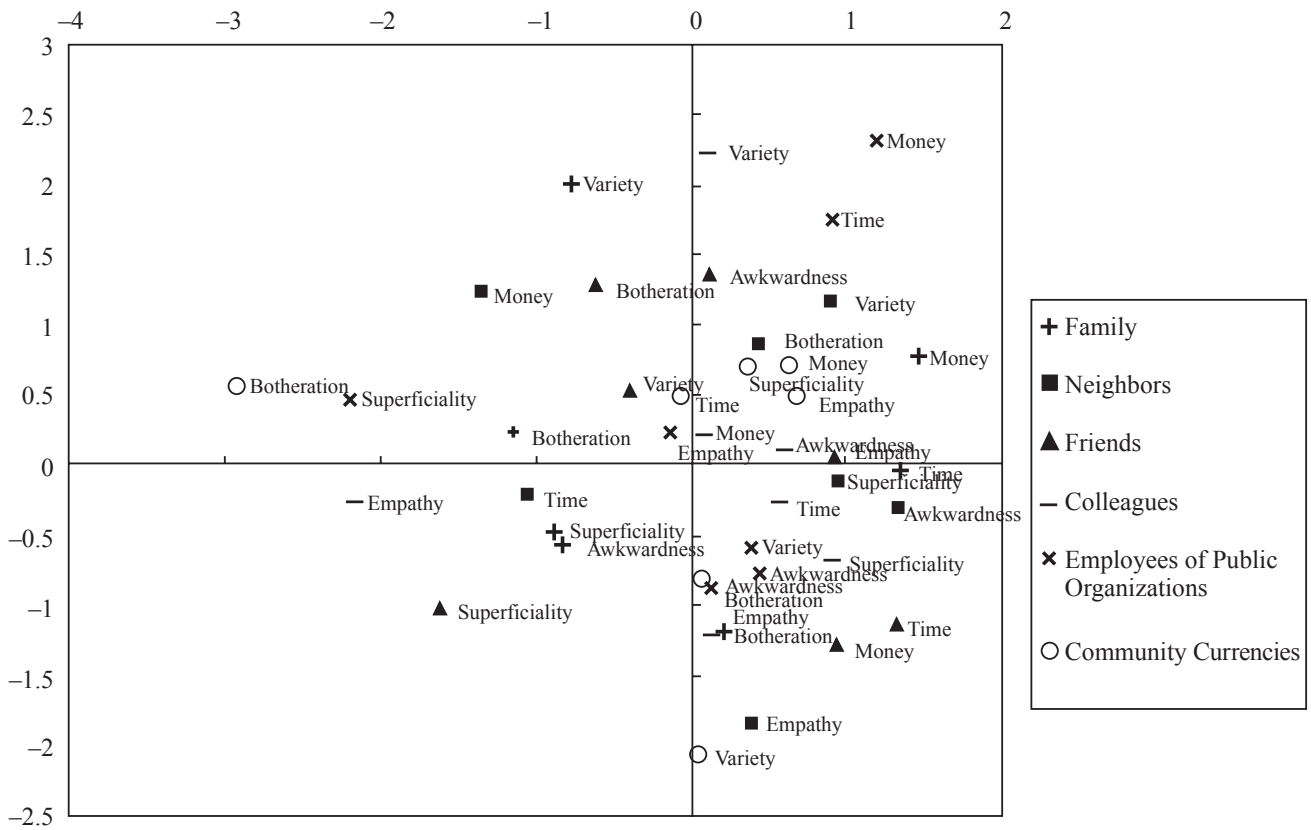
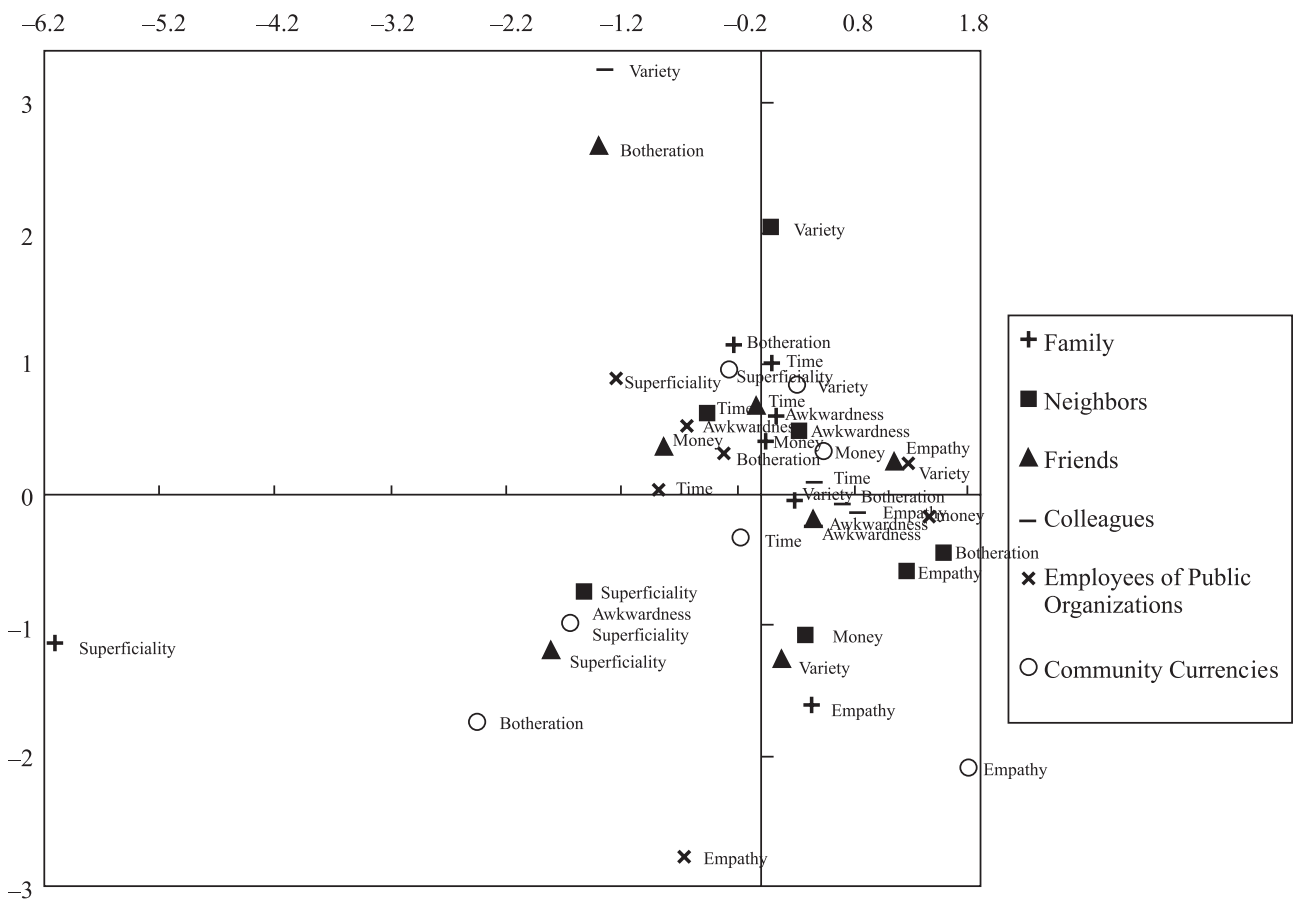


Figure 3. Advantages of support received by the use of community currencies (Ichi-Muraoka)



3.3 Functions of Community Currencies as a Source of Social Support

This section analyzes the types of advantages that community currencies have compared with other support sources. For each of the seven categories, except "others," we asked questions about the advantages of community currencies as a source of social support with regard to the following seven answers: "it saves time," "it saves money," "it enables close mutual support," "it doesn't feel awkward," "it enables superficial mutual support," "it is not bothersome," and "we can request various things" (multiple answers allowed). As for this question, we used Hayashi's quantification method type III (also known as correspondence analysis)⁷.

Figures 2 and 3 show a combination of category scores in the first and second axes of each support source for BYTS and Ichi-Muraoka, respectively. In the charts, "time," "money," "empathy," "awkwardness," "superficiality," "botheration," and "variety" correspond to the aforementioned seven answers respectively.

First, we verify the benefits of support to see from which axis they can be evaluated. "Family," "friends," "colleagues," "employees of public organizations," and "community currencies" in Ichi-Muraoka and "colleagues" in BYTS place "empathy" at one extreme and "superficiality" of support at the other extreme of the axis, which reveals that an axis to evaluate the <depth> of support exists. Additionally, "family," "neighbors," "friends," and "community currencies" in Ichi-Muraoka, as well as "family" and "community currencies" in BYTS, place "botheration" at one extreme and "empathy," "superficiality" and "variety" of support at the other extreme of the axis, which reveals that an axis to evaluate the <troublesomeness> of receiving support exists.

In addition, for "neighbors," "colleagues," and "employees of public organizations" in Ichi-Muraoka and "neighbors," "colleagues," and "community currencies" in BYTS, there is "variety" at one extreme and "money," "empathy," and "superficiality" at the other, which reveals that an axis to evaluate the <diversity> of the content of support exists. Furthermore, for "neighbors," "friends," and "employees of public organizations" in BYTS, there is an axis that places "money" and "awkwardness" at both extremes, which reveals that an axis exists to evaluate the psychological <hesitation> to receive support.

As shown above, if we are to evaluate community currencies from the aspects of <depth> and <diversity> of support and of <troublesomeness> and <hesitation> in receiving support, "time," "money," "superficiality," and "variety" gather near the original point in Ichi-Muraoka. This can be interpreted as indicating that while one can receive <superficial> and <diverse> support, some <troublesomeness>

and <hesitation> accompany it. "Time," "money," "empathy," "superficiality," and "awkwardness" gather near the original point in BYTS, which indicates that while one can receive both <superficial> and <deep> support at the same time, the types of support are <limited> and accompany not so much the <hesitation> but the <troublesomeness> of receiving support.

On one hand, Ichi-Muraoka attracts attention in that community currencies are regarded as capable of giving <superficial> and <diverse> support, which means that support can be received with "weak ties." On the other hand, BYTS draws attention in that community currencies are thought of as capable of giving <superficial> and <deep> support, which means that support can be received with "strong ties" at the same time⁸.

While the two organizations are thought of as slightly different regarding the benefits of support sources in community currencies, what is common in the two organizations is that both are thought of as involving <troublesomeness> in the receipt of support, which suggests that this may be one of the potential general problems that C2C-model community currencies share in the effort to provide social support.

Next, we examine which of the six types of support are appropriate for community currencies to provide. Tables 7 and 8 show the differences between the mean support scores in Ichi-Muraoka and BYTS.

In Ichi-Muraoka, the means of "economic support" and "social companionship support" are significantly lower than those of the other four types. This is due to the system conditions of Ichi-Muraoka as well as the sociocultural environment in Muraoka-town, rather than the nature of community currency itself. While BYTS uses a LETS system and transactions of goods and services circulating in the markets are not prohibited, Ichi-Muraoka uses the "Eco Money" system and transactions of goods and services sold and purchased in the markets are impossible. Therefore, "economic support" is difficult to receive in Ichi-Muraoka. In addition, Muraoka-town retains strong regional and family ties from olden times and human relationships within the village have already been established. Thus, there is a low likelihood that community currency activities provide "social companionship support." As for BYTS, the means of "emotional support" and "appraisal support" are significantly lower than those of the other four types. This indicates that BYTS is relatively more suitable for providing tangible support, such as "instrumental support," "informational support," "economic support," and "social companionship support," rather than psychological and intangible support, such as "emotional support" and "appraisal support."

⁷ In Hayashi's quantification method type III, the frequently selected items are plotted around the origin.

⁸ The combination of these two advantages is something no other support sources have and is therefore assumed to be a feature of community currencies.

3.4 Social relationship and structural factors that affect the provision of social support

Community currency transactions are “embedded” in social relationships and structures (Nakazato, 2007) and it is assumed that the social support brought about directly and indirectly by such transactions is influenced by social relationships and structures. In order to study the social relationship and structural factors that affect the provision of social support, we conducted an exploratory path analysis with six types of support scores as dependent variables and indegree (the amount of received goods and services), outdegree (the amount of provided goods and services), the sum of indegree and outdegree, the value of indegree per tie, the value of outdegree per tie, the sum of indegree and outdegree per tie⁹, reciprocity¹⁰, effectiveness¹¹, structural constraint¹², density¹³, cluster coefficient¹⁴, betweenness centrality¹⁵, flow centrality¹⁶, indegree closeness centrality, outdegree closeness centrality¹⁷, sex, and age as independent variables.

The results of a path analysis for Ichi-Muraoka and BYTS are presented below. All coefficients in the figures are statistically significant at the 1% or 5% level, or have a significant tendency at the 10% level. The goodness of fit (GFI) shown in the lower part of the figures for both Ichi-Muraoka and BYTS reached an acceptable level.

As for Ichi-Muraoka, first, “the amount provided and received” has a positive influence on the provision of “appraisal support,” “social companionship support,” and “instrumental support,” although the degree of influence in each item is small. Both “appraisal support” and “social companionship support” can express sympathetic support with others and are capable of generating sympathetic connections by the frequent use of community currencies. On the other hand, “the amount provided and received” has

a positive influence on the provision of “instrumental support” because the main use for community currencies in Ichi-Muraoka was to provide a means of transportation when elderly people go shopping or to the hospital. In other words, frequent users of community currencies in Ichi-Muraoka often use transportation services, so “instrumental support” is provided.

Furthermore, the fact that “indegree closeness centrality” has positive coefficients for “economic support” and that the same is true in the “effectiveness” of providing “instrumental support” shows that the position in an effective location within the network and the efficiency of network structure help improve access to various resources held by others. This means that various resources that exist in the social network become accessible by shortening the distance and that accessibility improves by decreasing redundancy in network structure (Figure 4).

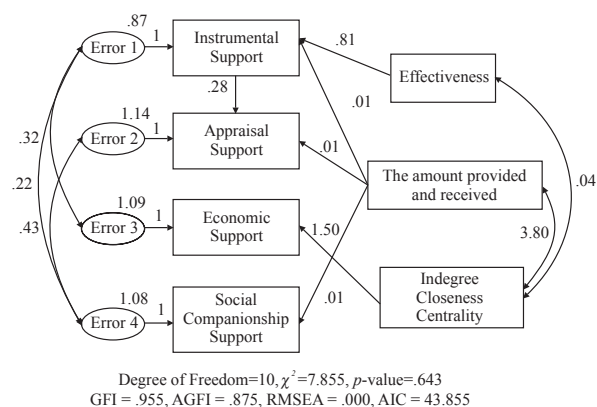


Figure 4. Structural factors of various support scores received by participating in community currency activities (Ichi-Muraoka)

9 All of the “values per tie” are calculated by [degree centrality in weighted network (the amount of goods and services received and provided)]/[degree centrality of binary network (the number of others from whom an ego received and to whom it provided goods and services)].

10 The degree of mutuality of ties, calculated by the reciprocal of the absolute value of the difference between the indegree and outdegree.

11 The “effective size” of an ego’s network is obtained by subtracting the degree of connections among neighborhoods from the network size of the ego. “Effectiveness” is obtained by “effective size”/“network size.”

12 When an ego is connected with neighborhood A and has few neighborhoods other than A, and the neighborhoods other than A are connected with A, the ego is “constrained” by A because doing something without A’s influence becomes difficult. By summing bilateral “constraints,” the “structural constraint” an ego receives from the entire network is calculated.

13 The density of an ego’s network is obtained by [the number of actually present ties]/[the number of possible ties within the network].

14 A cluster is a triangle connected by three nodes. The clustering coefficient represents the degree to which a network contains clusters.

15 The measure of the degree to which an ego mediates among others in a network.

16 A kind of betweenness centrality measure suitable for analyzing weighted networks.

17 Closeness centrality is one type of centrality measure based on distance. It is obtained by summing the shortest distances from an ego to other nodes.

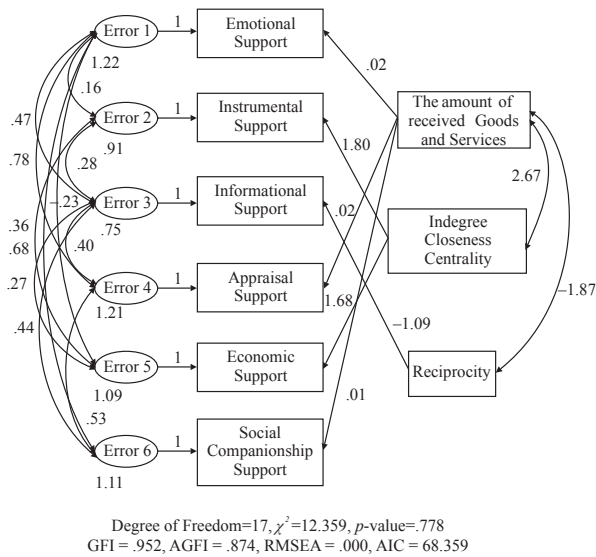


Figure 5. Structural factors of various support scores received by participating in community currency activities (BYTS)

Regarding BYTS, as was seen in Ichi-Muraoka, the frequent use of community currencies generates sympathetic support, as "the amount of received goods and services" positively influences "emotional support," "appraisal support," and "social companionship support." We can also point out that the closer the distance is with others in a social network, the easier it is to obtain various resources, as in Ichi-Muraoka, because the "indegree closeness centrality" has positive coefficients for "economic support" and "instrumental support." In addition, the values of "reciprocity" negatively impact "informational support." This seems to occur because those who make reciprocal transactions in BYTS tend to build a fixed relationship with specific individuals¹⁸, making it difficult to receive support that requires "weak" ties, such as "informational support" (Figure 5).

4. DISCUSSION AND CONCLUSION

Based on the results of our analysis, we can point out the following with respect to the social support provided by community currencies.

1. While the transfer of social support by community currencies does not affect the quality of life of all members in a significant way, it makes members aware that it could be related to their lives if they become conscious of it.
2. Community currencies are peripheral and supplementary support sources for members.

3. The types of advantages that a community currency has when compared with other support sources, and the suitable types of support that community currencies provide, depend upon the system of the community currency itself as well as the socio-cultural environment of the community in which the system is used. Ichi-Muraoka is considered to provide support "rich in diversity" in a "superficial" relationship, which matches the theory regarding the strength of "weak" ties. BYTS is considered to build relationships, which are not only "superficial" but also "deep" or, in other words, "strong" ties.
4. Generally, when the frequency of use of community currencies is higher, more sympathetic and psychological support, rather than instrumental/tangible support, is obtained.
5. In order to utilize various resources scattered among local residents, it is better that the network structure is efficient or that one is positioned in an efficient location within the network.

Our four hypotheses are mostly supported and community currencies proved to be capable of giving support with "strong" ties for local residents who participate with various purposes and seek "strong" ties, while giving support with "weak" ties for those who seek various social, human, and/or materialistic resources.

However, community currencies function only in the limited instances where the system is introduced to the community appropriately and the local residents use them in an appropriate manner. As shown in point 3 of the analysis above, the collection of ethnographic information in a given region, accompanied by questionnaire surveys, as well as the social network analysis of social support transfers, such as the ones that we conducted, are found to be potentially helpful as guidelines in considering the socio-cultural characteristics of a region in order to successfully introduce community currencies or to improve the performance of existing community currency organizations.

This paper focuses on an analysis of the general functions of community currencies as they relate to providing social support and does not touch upon the specific relationship of social support transfers to members. Further surveys are to be conducted about these issues and will be discussed in another paper.

¹⁸ The "reciprocity" here is not reciprocity between two individuals but reciprocity among the overall network members. However, in reality, those with high "reciprocity" had a tendency to conduct transactions within the fixed relationship.

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International Journal of Community Currency Research

Volume 16 (2012) Section D 136-145

CC COUPON CIRCULATION AND SHOPKEEPERS' BEHAVIOUR: A CASE STUDY OF THE CITY OF MUSASHINO, TOKYO, JAPAN

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ABSTRACT

This article introduces the history of community currencies in Japan, and examines the successes and remaining problems of the community currency coupons which are currently gaining such popularity. As a rule, in Japan, only shopkeepers can exchange community currency coupons for the national currency. Therefore, in order to expand a currency's circulation and revive the community, each shopkeeper should use the community currency actively without saving or cashing in it immediately. Shopkeepers' behaviour become crucial for circulation. This article will try to investigate the relationship between community currency coupon circulation and shopkeepers' behaviour. We treat community currency coupon used in Tokyo's Musashino district as a case and use a questionnaire-based method to examine the relationship. The research makes it clear that shopkeepers' comprehension level, psychological resistance, and accounting procedure have a substantial effect on community currency coupon reuse versus redemption.

ACKNOWLEDGEMENTS

We would like to thank the Federation and each shopkeeper for our data collection as well as especially important comments by some participants in the international conference on Community and Complementary Currencies and an anonymous referee.

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To cite this article: Kurita, K., Miyazaki, Y. and Nishibe, M. (2012) 'CC Coupon Circulation and Shopkeepers' Behaviour: A Case Study of the City of Musashino, Tokyo, Japan' *International Journal of Community Currency Research* 16 (D) 136-145 <www.ijccr.net> ISSN 1325-9547

1. INTRODUCTION

Community currencies (CCs) in the form of redeemable coupons (hereafter called 'CC coupons') are currently gaining popularity in Japan. There are several types of coupons available in the country. The most well known are local coupons (or gift certificates). These coupons carry a premium and are usually issued by Japan's chamber of commerce to stimulate consumer demand and escape the prolonged depression. These coupons typically have expiry dates and are generally used only at local shops. Consumer willingness to buy in the community is supposed to be encouraged by putting a premium on coupons and setting expiry dates. Typical coupons are usually redeemed immediately after being used. However, CC coupons are also used for volunteer activities and are reused multiple times before being redeemed.

This type of community currency is adding vitality to local communities by its use in both commercial and non-commercial transactions, bridging the gap between volunteer activities and the economic activities of local shops. These CC coupons were introduced in an attempt to overcome the problems encountered by earlier CCs used in Japan (Nishibe, 2005; 2006a). 'Eco-money'—only usable for non-commercial services—has been one of the most popular types of CC. Recipients tend to store up these CCs, which they obtain in exchange for their non-commercial volunteer work, because they either cannot find any services they want or cannot use them at local shops. This problem has prevented eco-money from circulating smoothly. CC coupons that can only be exchanged for cash by shops have been adopted in Japan in order to solve this problem. However, another problem is that in the case of CC coupons, local shopkeepers, instead of using CC coupons for other local shops or for non-commercial services, are apt to redeem CC coupons immediately after receipt. This is mainly because most shopkeepers purport to need cash to buy merchandise from outside their community. This hinders the active circulation of CC coupons.

When this happens, the relationship between shopkeepers' behaviour and the circulation of CCs becomes crucial. In order to make redeemable CC coupons circulate successfully in a community sphere, shopkeepers must comprehend the purpose of the CC and commit to circulating them wherever possible, rather than redeeming them immediately.

This article will try to show the relationship between CC coupon circulation and shopkeepers' behaviour. Section 1 reviews the history and development of CCs in Japan. Section 2 gives an outline of the CC coupon introduced in the Central District of Musashino City, Tokyo (hereafter called the Central District). Section 3 analyses the results of a circulation experiment and examines the relationship between shopkeepers' behaviour and the CC coupon circulation. Section 4 coordinates the results of the analysis,

draws conclusions on the significance of the CC coupons, and notes the issues that remain to be studied.

2. HISTORY AND DEVELOPMENT OF CCS IN JAPAN

2.1 Appearance of various CCs before the twenty-first century

In Japan, a variety of CCs have appeared since the 1970s. The first to gain attention were the Volunteer Labour Bank and eco-money (Izumi, 2006; Lietaer, 2004). In 1973, Shoko Mizushima formally established the Volunteer Labour Bank. Participants received in-house credits instead of wages in yen as payment for their volunteer work. One hour of volunteer work was equal to one point, and the points amassed could be exchanged for labour from among participants. This activity is similar to mutual assistance systems, such as the 'Time Dollars' that were later set up primarily in America (Cahn, 2000; Lietaer, 2004). A number of time-deposit-style CCs later appeared, inspired by the idea of the Volunteer Labour Bank¹. Some foreign CCs also became known in Japan, such as the Canadian Local Exchange Trading System (LETS) and the American Time Dollars and Ithaca Hours. These greatly affected the implementation of CCs. An official of the now-defunct Ministry of International Trade and Industry, Toshiharu Kato, proposed the concept of eco-money, modelled on LETS and Time Dollars. Eco-money circulates within districts and re-evaluates various environmental, social welfare, educational, and cultural values (Kato, 2001, p.23).

The use of eco-money has spread throughout Japan, drawing great interest as a tool for revitalizing local communities. From the 1990s through the beginning of the twenty-first century, Japan experienced a boom in the use of CCs. There are three reasons why CCs became more common in Japan. First, the Hanshin Earthquake created momentum for more active civic movements. Second, the country fell into the long-term recession following the bursting of the bubble economy and the Asian currency crisis. Third, NHK, the Japanese public TV broadcaster, released a documentary on author Michael Ende which dealt with the issue of money [Ende's Will].

2.2 Appearance and development of CC coupons

In 2002, the central government proposed a variety of policies related to CCs that were taken up in many parts of the country (Nishibe, 2006b). One of these was a system of special zones for structural reform aimed at relaxing regulations in order to revitalize districts. Many central and local government attempts to establish CCs throughout Japan have also included offers of subsidies and platforms using computer network systems. Under such circumstances, CC coupons were first issued in Rubeshibe Town in Hokkaido. The local coupons that had been in use up to that point were exchanged for cash immediately after use, mak-

1 Later, time-deposit CCs called the Fureai Kippu system by Tsutomu Hotta, director of the Sawayaka Welfare Foundation, spread domestically in Japan.

	CC coupons	Eco-money- type CCs	Local coupons	Stamps
Transaction types	<ul style="list-style-type: none"> • Commercial • Non-commercial 	Non-commercial	Commercial	Commercial
How to get	<ul style="list-style-type: none"> • Purchase • Volunteer work 	Volunteer work	Purchase	Giveaway Promotion
How to use	<ul style="list-style-type: none"> • Shop • Volunteer work 	Volunteer work	Shop	Shop
Circulation	Multiple	Multiple	Once	Once

Table 1. Differences between CC coupons, eco-money-type CCs, local coupons, and stamps.

ing it impossible for them to circulate as a currency and to create additional demand that would promote on-going purchasing activity (Nishibe, 2004, p. 28). Local coupons that incorporated the idea of a CC then appeared. However, the law at the time did not clearly prohibit multiple circulations of local coupons before redemption, and so Rubeshibe Town applied for status as a special economic zone and requested that the government reconfirm multiple circulations. As a result, the regulations were relaxed and the issue of local multiple-circulation coupons was permitted.

Furthermore, in March 2005, the Osaka Healthy Community Creation Special Zone and the Kitakyushu Community Currency Special Zone were established as special zones for CC purposes, and regulations regarding the issue and circulation of CCs were relaxed. As a result, three types of CC coupons came into existence: Genki, in Neyagawa City, Osaka; Ippo, in Suita City, Osaka; and Orion in the Yahata West district of Kitakyushu. In 2007, special measures regarding regulations were implemented nationwide, creating awareness of CC coupons across Japan. In response, the village of Sarabetsu in Hokkaido set up an incorporated non-profit organization and issued Sarari, which was usable not only for volunteer activities and local shopping but also for payment of public utilities, facilities, and local taxes.

2.3 Special features of CC coupons

CC coupons are special in that they are multiple-circulation local coupons valid for both commercial and non-commercial transactions. They can be used to reward volunteers for their work, to buy goods in shops, and to pay for administrative services. They were introduced in order to overcome the limits of the previously used CCs, local coupons, and stamps. These CCs had problems related to their limited regions of use and stagnation in circulation. Unlike these earlier local coupons and stamps, CC coupons need not be cashed in immediately after use, but can instead be re-circulated. This type of CC also differs from the eco-money type of CC in that its sphere of use is not limited to non-commercial transactions but also includes commercial transactions (Nishibe, 2006a, p.338). This mechanism

is known as the Double Triangle System (DTS) (Nishibe, 2004a, 2008; Kichiji and Nishibe, 2008).

With DTS, 'CC circulation in non-commercial transactions is pulled along by CC circulation in commercial transactions, thus the mechanism allows for a smoother circulation of the CC, and is an attempt to overcome the difficulties of CC stagnation and continuity in transactions' (Nishibe, 2008, p. 291). The DTS forms a link between commercial and non-commercial transactions, broadens the area of circulation of the CC, and invigorates volunteer activities, mutual assistance, and economic activities. Yen and local coupons are not ordinarily used in non-commercial transactions such as volunteer activities and mutual assistance, whereas CC coupons are used in these transactions, making their range of possible use much broader. As a result, CC coupons form a link between citizens who undertake non-commercial transactions and businesses who undertake commercial ones, thereby fulfilling a role in building social capital. Table 1 shows the differences among CC coupons, eco-money-type CCs, local coupons, and stamps.

3. OUTLINE OF THE CC IN THE CENTRAL DISTRICT OF MUSASHINO CITY

3.1 Background to the introduction of CC

The preceding section explored the history and development of CCs in Japan and briefly documented the process that gave rise to CC coupons. Given that CC coupons have attracted much attention in Japan in recent years, this section will focus on the case of Musashino City in Tokyo. Musashino City has an abundance of commercial establishments and educational institutes, with the tertiary sector providing the city's main economic support. The financial capability index, which shows the strength of a city's financial base, is very high for Musashino, which is an affluent city. Central District, the focus of this article, has several merchants' associations and fully engages in festivals and other local activities. However, with the drawn-out recession and the opening of large-scale stores, the shopping streets in Central District are gradually going into decline.

Central District has three main problems. The first is the impasse on trade stamps. The stamps encourage consumers to buy more, increase purchase rates in participating shops, and help to keep consumption within the district. Musashino Central District Shopping Streets Federation (hereafter called 'Federation') implemented trade stamps as a part of its consumer services. However, trade stamps are on the decline owing to steep falls in sales turnover and in the number of participating shops. Consumer interest in stamps has also waned, and stamps no longer provide the means for bonding between consumers and the shopping district.

The second issue is the weakness of links between different groups. Various groups are undertaking local activities in Central District, but there appears to be no strong links among them. Such links are necessary to energize the community, but in this case have been inadequately forged.

The third problem is the aging of society and the decline of mutual assistance. An aging society experiences a host of problems. Senior citizens find it increasingly difficult to visit shops as they become less mobile. With few opportunities to get out and about, their feeling of isolation increases and they become estranged from their local communities. Relations with local residents also become weaker, and mutual assistance dwindles.

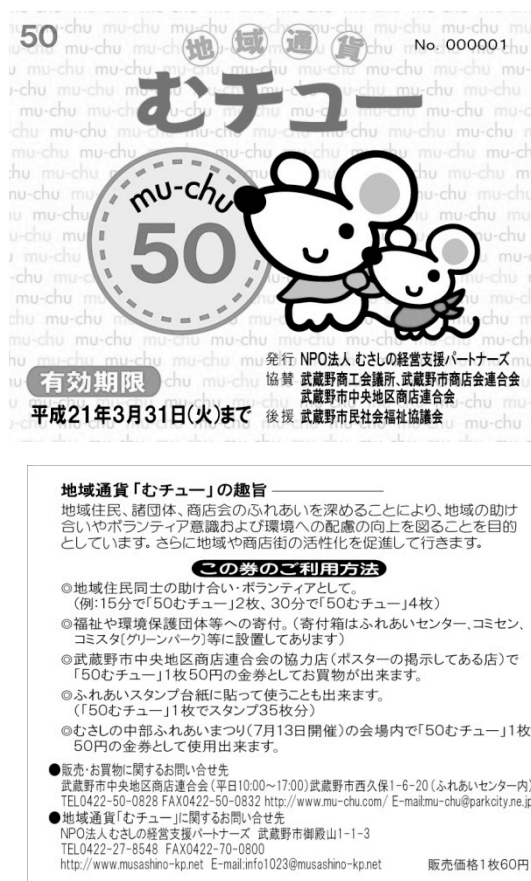
Central District is experiencing the types of problems outlined above. These can only be resolved with the cooperation of local groups and residents. A CC has the potential to bring about co-operative relations among the various local groups and residents and strengthen the social capital. Groups and residents can use a CC to add vigour to shopping streets, accommodate an aging society, and promote inter-group links and mutual assistance. Federation decided to introduce a CC as a way to tap this potential.

3.2 Design and circulation of the Mu-chu scheme

This section will outline the design and circulation scheme of the CC, the Mu-chu (hereafter, Mc), introduced in the Central District. The design is shown in Figure 1. A Mc note is equivalent to 50 yen. The Mc was introduced in order to promote inter-group links and mutual assistance, and thereby invigorate the local community and economy.

Experimental Mc circulation was implemented as shown in Table 2. A two-phase implementation was planned over a six- to twelve-month period beginning in 2008. In all, 11 shopping streets participated, with some 140 participating shops. The total issue in the first phase was equal to approximately 3.7 million yen, and in the second phase around 2.7 million yen. The amounts of money redeemed were approximately 3.5 million yen in the first phase and 2.5 million yen in the second phase, meaning that more than 93% was eventually redeemed. The first issue was carried out by NPOs, and the second by local merchants' associations.

Figure 1. Front (left) and back (right) of a 50 Mc note.



	First stage	Second stage
1. Experimentation period	07/2008 - 03/2009	05/2009 - 03/2010
2. Total number of participating shops	145	141
3. Total value of CC in circulation	¥3,770,200	¥2,735,400
4. Total value of CC redeemed	¥3,513,100	¥2,556,600
5. Rate of CC redeemed	93.2%	93.5%
6. Issuers of CC	NPOs	Local merchants associations

Table 2. Implementation of experimental Mc circulation.

Mc were issued by two methods. Table 3 shows the details of the total amounts issued. In the first method, Mc was bought by various groups and merchants associations and distributed to local residents as giveaway promotions from shops and rewards for community services. Service activi-

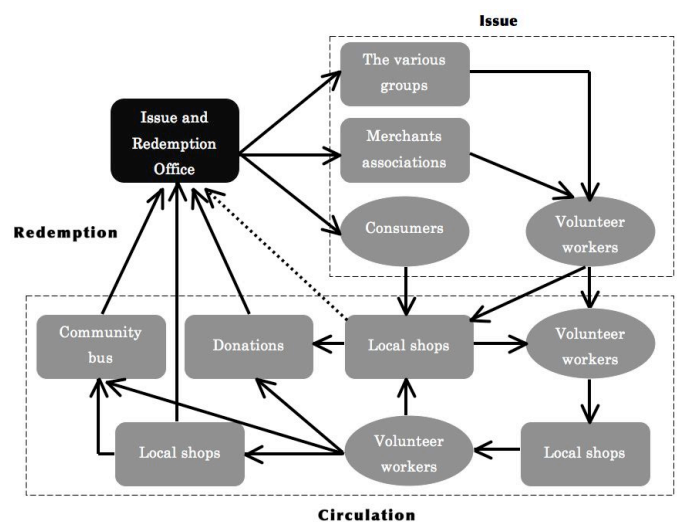
Method of Issue	First stage	%	Second stage	%
Rewards for community services and giveaway promotions	¥957,500	25.4	¥1,427,900	52.2
Donation	¥555,000	14.7	¥0	0.0
Purchase by consumers	¥2,257,700	59.9	¥1,307,500	47.8
Total	¥3,770,200	100.0	¥2,735,400	100.0

Table 3. Mc issued.

ties included helping with festivals and other events, communal cleaning, gardening, collecting caps from plastic bottles, and forgoing the use of plastic shopping bags. In Japan, the ‘no plastic bags’ movement is booming from an environmental conservation standpoint. When a customer declines to take a plastic shopping bag at checkout, he or she receives a point, and when a certain number have been amassed, they can be converted into Mc. In this circulation experiment, the various groups and merchants’ associations bought Mc at a rate of 60 yen per coupon (worth 50 yen) and distributed them to the volunteer workers and other recipients. The face value of the CC is 50 yen; for every coupon bought by the groups and merchants associations, 10 yen is contributed to running costs. The Federation also gave away Mc to groups and residents as a form of advertising. In the second method, local residents bought Mc directly and used them in the shopping streets. In this case, Mc came with a 20% premium for a limited time. A local resident buying 1,000 yen (20 coupons) of Mc received a premium of 200 yen (4 coupons). There are no differences in function between these and previous issues; the only distinguishing feature is that the character *toku*, meaning ‘special’, is printed in a red circle on the top-right side of the coupon.

Local residents who received or bought Mc used them as payment for mutual assistance, as donations, on shopping streets, on the community bus, and during events such as festivals. Mc could also be affixed to stamp cards. Shopkeepers who accepted Mc sometimes used them in other shops. In principle, only participating shops were allowed to redeem Mc for yen. Residents and shopkeepers could also donate Mc. The donations received were converted into yen and given as aid money for victims of disasters, funds for guide dogs for the blind, and support for social welfare councils. Mc had an expiry date. The distribution flow of Mc is shown in Figure 2. The arrows indicate the direction of the flow. Mc re-circulated repeatedly among groups and residents before eventually being redeemed for yen by shopkeepers or the company running the community bus. This figure shows the structure of possible distribution flow. Actually, many Mc coupons were redeemed as soon as they were used in shops as the dotted arrow shows. Mc issued as CC coupons has borne fruit. However, the problem of redemption by shopkeepers have also risen. The next section investigates the problem of shops redeeming Mc from the standpoint of the shopkeepers’ comprehension and behaviour.

Figure 2. The possible distribution flow of Mc.



4. RESEARCH METHOD AND RESULTS

4.1 Issues

Some Mc were given as gifts and rewards for community services. These were mainly used in local shops and for the community bus. Kurita (2010) focuses on the awareness and behaviour of general local residents to ascertain the effects of introducing Mc. According to Kurita, Mc gradually brought about positive effects after being issued in the form of CC coupons, as it transformed both the awareness of inter-group links and consumer behaviour. However, there was one major problem with Mc: shopkeepers tended to redeem it immediately. Most of the coupons given to and bought by local residents were used in the shopping streets and then redeemed (Table 4). Mc received by shops could have been used in other shops, given as rewards for mutual assistance, used for the community bus, or given as donations, but much of the Mc issued ended up being redeemed even before the expiry date (Table 5).

Implementation period	Redemption rate of Mc by shops (%)
First stage	98.4
Second stage	97.7

Table 4. The redemption rate of Mc by shops.

Implementation period	Redemption rate of Mc before the expiry date (%)
First stage	46.8
Second stage	66.6

Table 5. The redemption rate of Mc before the expiry date.

This shows that the shopkeepers' behaviour can have an effect on the circulation of Mc, particularly in terms of the shopkeepers' comprehension of CC, that is, whether shopkeepers have a full understanding of the difference between local coupons and CC, which can be reused many times. For CC coupons to circulate multiple times, shopkeepers must be fully aware of their significance in the ways they can best be used. If a shopkeeper uses Mc as gifts in other shops, that value remains in the community, but when a shopkeeper redeems Mc for yen, the value is lost from the local community. It is therefore important to promote circulation so that shopkeepers re-use the coupons. This problem also arose in the 1930s with the Prosperity Certificates issued by the Canadian province of Alberta. See Coe (1938). However, earlier research has not adequately addressed this issue, which has led us to believe that it is necessary to analyse the effects of shopkeepers'

comprehension and behaviour on the circulation of Mc². The next section investigates the relationship between shopkeepers' behaviour and the circulation of CC coupons, focusing on the shopkeepers' level of comprehension. Some problems are also brought to light.

4.2 Survey method

To carry out the research survey mentioned above, shopkeepers in the Central District shopping streets were selected to participate in face-to-face questionnaires and interviews. Shops where Mc had been accepted were targeted, and shopkeepers were asked about their comprehension of Mc and their ways of using it. Mc had been accepted in 106 shops in either the first or second circulation phase; a total of 84 shopkeepers agreed to participate in the survey. The survey contained questions regarding comprehension of Mc, whether it was redeemed for yen, and how it was used. To investigate the level of comprehension about Mc, questions were asked about six of Mc's features. There were also questions about changes after the introduction of Mc and opinions and demands relating to Mc were collected. The questionnaire that we conducted in the survey is found in appendix. The interviews were conducted in an open-ended format. In the interviews, we asked shopkeepers in detail for their reasons for redemption. The survey was carried out in two stages in October and November 2010.

4.3 Results

In order to survey the degree of comprehension of the CC, subjects were asked if they knew the features of Mc. For each of the six features that a subject knew about, one point was given, for a maximum of six points. The six features are as follows: (1) Mc can be used as a reward for volunteer work; (2) Mc can be donated to welfare and environment protection groups; (3) Mc can be used in participating

Table 6. Averages and standard deviations for levels of comprehension of Mc.

	Mean	SD
Overall comprehension level (0,6)	4.83	.82
Component features		
1. Usable as a reward for volunteer work (0,1)	.83	.38
2. Usable as a donation (0,1)	.60	.49
3. Usable in participating shops (0,1)	.99	.11
4. Usable at festivals and other events (0,1)	.87	.34
5. Usable as a stamp card (0,1)	.69	.47
6. Usable multiple times (0,1)	.86	.35

2 Several previous studies examined the economic effects of CC coupons. Coe (1938) notes how their use in large shops and redemption could become obstacles to their circulation. Nishibe (2005, 2006a), Kichiji and Nishibe (2008), and Yamazaki (2008) verify the economic effects of CC coupons by considering their redemption, turnover, and velocity of circulation. However, these studies did not focus on shopkeepers' values, comprehension of CC, or behaviour.

shops; (4) Mc can be used at festivals and other events; (5) Mc can be affixed to stamp cards; and (6) Mc can be used multiple times within the district without having to be redeemed. Table 6 shows the averages and standard deviations for the levels of Mc comprehension. Table 6 shows the overall comprehension levels and the levels for each of the component features.

The overall comprehension level average was 4.83. Given that the maximum score was six, we can see that to some extent, the main features of Mc were understood. What about the individual features? As Table 6 shows, shop owners understood that Mc could be recirculated, given as a volunteer activity reward, and spent at participating shops and festivals. The other two features, donation and stamp card use, were not well known. Although there was some degree of understanding, there was also variation across features.

Behaviours of shopkeepers	%
Reused all or part of the Mc received	41.7
Redeemed all the Mc received	58.3
Total	100.0

Table 7. Rate of reuse of Mc by shopkeepers.

Use	Number of times
1. Local shops	47
2. Community bus	2
3. Donations	2
4. Gifts	2
Total	53

Table 8. Shopkeepers' use of Mc.

Table 7 shows whether shopkeepers that accepted Mc reused some of them instead of redeeming them. It was found that 41.7% of shops reused all or some of the Mc received, and 58.3% redeemed all the Mc received. From this result, we can presume that 41.7% of shopkeepers were able to distinguish CC from local coupons and use them as such. Table 8 shows the ways in which shopkeepers reused the Mc received. Calculations were made as follows: if shop A has three Mc notes and reuses the first Mc in shop B, the second in shop C, and the third for the community bus, these are counted as having been used twice in shops and

once on the community bus. In this case, three Mc notes were used for three different routes. The sum of each shopkeepers' use routes are listed in the Table 8. As Table 8 shows, almost all of the Mc were reused in shops. Thus, the majority of Mc is circulated multiple times to bring about consecutive transactions, which leads to a 'multiplier effect' which creates effective demand. On the other hand, 58.3% of shops redeemed all the Mc they received, suggesting that they failed to understand the significance of Mc. As previously discussed, shopkeepers' comprehension shows some variation across features. Therefore, shopkeepers' comprehension level of Mc can have an effect on their behaviour. It could be that differences in the level of CC comprehension affected levels of its reuse. There could be differences in the levels of Mc comprehension between the group that reused some of the Mc and the group that redeemed all the Mc, which could have an effect on circulation. Next, we consider whether there is, in fact, such a difference between the reuse group and the redemption group, and investigate the relationship between CC comprehension and redemption.

Table 9 shows the differences in comprehension levels for each feature between the reuse and redemption groups³. There was no great difference between the two groups in their levels of comprehension of Mc usability for voluntary activities, in participating shops, and at festivals and other events. However, there were large differences between the groups in their levels of comprehension of Mc usability for donations, as stamp cards, and reusability. With regard to these three items, the reuse group had significantly higher comprehension levels than the redemption group. Remarkably, the difference (24.5%) between the two groups in comprehension of Mc's reusability within the district is statistically significant ($p < .05$). This is particularly important. If a shopkeeper comprehends that Mc can be used multiple times, it would not redeem all the Mc it received, but reuse at least some, whereas complete ignorance of this feature would leave redemption as the only option. As Table 6 shows, although Mc reusability is widely known, analysis of the data when categorized into these two groups reveals that the group that redeemed all the Mc received had a relatively low comprehension of this fact (Table 9).

We made a cross tabulation to better understand the relationship between the level of comprehension and behaviour (Table 10). Among those who redeemed all their Mc, some are ignorant of the fact that the currency can be circulated multiple times (I in Table 10). Given that no shopkeepers reused Mc without knowing about multiple circulation (II in Table 10), it is crucial for shopkeepers to receive information about multiple circulation so that they reuse Mc. However, about 76% of all shopkeepers redeemed all their Mc, even though many knew about multiple circulation (III in Table 10). Why, then, did they redeem all their Mc?

3 We obtained information on redemption from 84 shops, but one subject refused to give responses regarding CC comprehension for personal reasons. As a result, the relationship between comprehension and behaviours was analysed on the basis of data from 83 shops.

In order to answer this question, we analysed the interview results. We found that shopkeepers have two main motives for redemption. First, they have trouble with the accounting procedures. Some shopkeepers added Mc up in sales at shops. These individuals had to redeem Mc for yen in order to count Mc used in the shops as sales. If these shopkeepers reuse Mc without redeeming it, their sales will decline. Shopkeepers usually keep their sales at shops until they post their profits. Keeping Mc until the time profit is recorded and redeeming it then will have no impact on their sales. But, if these shopkeepers reuse Mc without redemption, their sales will drop for every Mc used. In order to avoid this type of problem, they can redeem Mc using their own money and post it as part of sales. But, many shopkeepers hesitated to behave in such a way because they fear confusing their own money with their shop's money.

Second, many were psychologically resistant. Some were unwilling to use Mc at other shops. They thought that the other shops had to redeem the Mc for yen before the expiry date and that it would require them to make the additional effort of going all the way to the redemption office. Accordingly, considerate shopkeepers hesitated to reuse Mc because they thought it would cause trouble for other shopkeepers. They resisted shifting this troublesome task to other shops with whose owners they were familiar. Further, some shopkeepers said that Mc should be used only by local residents, not by shops. They misunderstood the nature of Mc, believing that it was only for local residents, and never imagined that reusing Mc would lead to the revitalization of local communities. As just described, this sense of resistance among shopkeepers gave reuse of Mc an unduly large amount of influence. Psychological elements are not the sole source of negative impact on multiple circulation of Mc. However, some shopkeepers did show a strong

resistance to reusing Mc, despite knowing Mc that it could be reused.

To sum up the results thus far, the improvement of comprehension of Mc among shopkeepers is essential to promote its circulation, but accounting procedures and psychological resistance have had negative impacts on its multiple circulation.

Table10. Relationships between shopkeepers' behaviour and comprehension.

	Unknown	Known
Redeem	I 24.5%	III 75.5%
Reuse	II 0.0%	IV 100.0%

5. CONCLUSIONS AND IMPLICATIONS

CCs in Japan have undergone a peculiar process of evolution. At first, the voluntary eco-money gained popularity among community activists. Eco-money was introduced to foster mutual support among people within a community. However, since their sphere of use was limited to non-commercial transactions such as volunteer services and mutual aid, people who did not need mutual support had difficulty finding uses other than non-commercial transactions. To overcome this problem, CCs that are also usable in local shops and for payment of public utilities have emerged and become popular in Japan. Since local shops must stock with some amount of merchandise from outside their community, it is reasonable for local shops to be able

Table 9. Differences in comprehension levels for each feature between the reuse group and the redemption group

	Reuse group	Redemption group	Difference	p-value
Component features				
1. Usable as a reward for volunteer work	88.2	79.6	8.6	.462
2. Usable as a donation	79.4	46.9	32.5	.006**
3. Usable in participating shops	100	97.1	2.9	.853
4. Usable at festivals and other events	88.2	85.7	2.5	.997
5. Usable as a stamp card	79.4	61.2	18.2	.079*
6. Usable multiple times	100	75.5	24.5	.005**
N	34	49		

Note: **p-value < .05; *p-value < .1, two-tailed test.

to redeem CCs. A new type of CC in the form of coupons was thus created.

In this article, we have explored the history of CC coupons in Japan, focusing on the example of Musashino City: its experimental circulation and implementation of Mc. We have also examined the issues surrounding CC coupons. The most distinctive feature of CC coupons is that they are redeemable for yen and usable for both commercial and non-commercial transactions. However, if CC is redeemable in this way, the majority should be used in local shops and redeemed by the expiry date. However, many shopkeepers redeem them immediately.

Our analysis shows that level of comprehension of Mc, psychological resistance, and accounting procedures all have a substantial effect on Mc reuse versus redemption, and as a result, on average Mc turnover. For this reason, we propose two strategies to promote Mc circulation. First, practitioners should educate shopkeepers about CC, particularly about the difference between CC and local coupons. It can be hard for shopkeepers to recognise the essential difference between CC coupons and local or merchandise coupons. Since CC coupons are redeemable just as other coupons are, shopkeepers that have no interest in CC are often apt to consider them the same. As a result, shopkeepers without good knowledge of CC tend to redeem them immediately.

Second, softening the psychological resistance of shopkeepers is crucial to improving circulation of CCs. For this purpose, practitioners must develop new use routes for these shops. It is essential to create an environment in which shopkeepers can use Mc in places other than shops. For example, allowing CC to be applied to the usage fees of community facilities managed by local government would help in this regard. Enabling donations and payments to volunteer workers is an important factor in alleviating resistance to Mc. It is very important to create a CC coupon system well adapted to shopkeeper attitudes. An improvement in shopkeeper knowledge and the development of a CC coupon system tailored to shopkeeper attitudes is an important factor in achieving greater CC circulation⁴.

However, this study did not adequately consider the impact of accounting procedures or shopkeeper attitudes on the multiple circulation of CC coupons. Thus, we recommend that future research on CC coupon circulation focus on the relationship between shopkeepers' business practices, psychological factors, and coupon reuse. At the same time, we must explore behaviour affecting CC circulation from such perspectives as that of how shopkeepers' redemption practices may differ according to type of business or geographical area.

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4 It is difficult for shopkeepers to change their accounting procedures because accounting problems relate closely to their own business policies. For this reason, changing knowledge and attitudes is one of the most important strategies for improving CC circulation.

APPENDIX

Questionnaire for the shopkeepers

- Q1. Do you know that it is possible for you to use Mc in return for helping or volunteer activities?
- Q2. Do you know that it is possible for you to donate Mc to organizations that engage in social welfare or environmental protection activities?
- Q3. Do you know that it is possible for you to use Mc at participating shops?
- Q4. Do you know that it is possible for you to use Mc for at festivals and other events?
- Q5. Do you know that it is possible for you to use Mc as a stamp card?
- Q6. Do you know that it is possible for you to use Mc more than once?
- Q7. Have you ever used Mc without redeeming it?
- Q8. Please tell us where you used Mc.
- Q9. Please tell us the amount you have used Mc without redeeming it.
- Q10. Please tell us how many times you have used Mc without redeeming it?
- Q11. Please tell us why you redeemed Mc without using it.
- Q12. Did you feel a change after Mc was introduced into the community?
- Q13. Please give us your comments, ideas, hopes, and requests for Mc.



International Journal of Community Currency Research

Volume 16 (2012) Section D 146-155

A TWO-MARKETPLACE AND TWO-CURRENCY SYSTEM: A VIEW ON BUSINESS-TO-BUSINESS BARTER EXCHANGE

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ABSTRACT

This paper is a consideration of the definition of barter credit as a secondary currency. The business-to-business barter exchange and the national economy function as a system comprised of a currency component and a marketplace component. Barter activity including the creation of a medium of exchange is recognized and defined in national legislation of some key jurisdictions, and is defined de jure as a part of the national economy. The barter credit is thus de facto defined as a currency secondary to the national currency which is the primary currency. I consider three points: 1. The rule of "fair market value" guides behaviour in the barter exchange, 2. The option for business to operate in both the barter exchange and the national economy is a mechanism linking the two, 3. The barter exchange functions in such a way that there can be anti-deflationary dynamics in the region, as articulated by Stodder (2009).

ACKNOWLEDGEMENTS

The author would like to thank the organizers and participants of the International Conference on Community and Complementary Currencies 2011, University of Lyon, where a version of this paper was presented. Thanks are also extended to the two anonymous reviewers for their helpful comments.

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"This revolutionary cashless system is the currency of excess business capacity."
("Welcome to IRTA")

INTRODUCTION

Business-to-business barter exchanges share many of the characteristics of social currencies (Vasconcelos Freire 2009) but most are for-profit businesses operating in the private sector and have distinct legal status at least in some jurisdictions. Much of the development in the business-to-business barter exchange industry has occurred in the United States and in other countries such as Australia in the last 30 years where barter exchange is recognized in legislation. Barter credit exists as a type of sub-national instrument and barter exchange as a type of institution within the national polity.

I was struck by Stodder's proposition that the WIR, the "medium of payment" of the WIRBank, "coexists with SFr, as a secondary or "residual" currency" (Stodder 2009:26). To extrapolate a general statement, the barter credit coexists as a secondary or residual currency with the national or primary currency, standing in where the primary currency is unavailable. If this is the case, Stodder explains, barter exchange activity would have an anti-deflationary effect. Some of the explorations in this paper dialogue with this proposition.

This paper is a consideration of the definition of barter credit as a secondary currency and of its functioning. I propose that the barter credit is defined by political jurisdictions to function specifically as a medium of exchange secondary to the national currency for the purpose of trade of excess goods and services of businesses in the economy. Within the confines of these parameters, certain dynamics occur and certain mechanisms are at work. In this way:

1. The concept and practice of "Fair Market Value" serves as a rule guiding nominal price levels and valuation of goods and services traded within barter exchanges,
2. The option available to businesses to participate in the barter exchange and the national economy acts as a mechanism that links together the barter exchange and the national economy, and
3. The barter exchange functions as a secondary marketplace and secondary currency in such as way there can be anti-deflationary dynamics in the region.

1 BACKGROUND

1.1 Organization

In a study of Bartercard, a business-to-business barter exchange in Australia, the management attributed the success of barter exchanges to "effective administration, rigorous organizational control, and aggressive marketing to obtain the right mix of high demand services and products within the exchange" (Birch and Liesch 1998:332). Member businesses concurred, reporting they felt that effective management was a more important factor than poor economic climate to the success of the exchange.

The typical barter exchange is a small business managed by the owner with a small staff. Membership is comprised of small and medium businesses operating in the locality or region, the reach determined in large part by the owner's "local knowledge" and relationships with area businesses (Whitney 2010). Barter exchanges have on average 500 member businesses (Napoli-Cohen 2010). These businesses normally make 5 to 15 percent of their total annual sales in the barter exchange's marketplace (Birch and Liesch 1998, Napoli-Cohen 2011). Membership is granted by the owner and requires payment of a membership fee. The barter exchange operates as a kind of private club.

One of the main benefits to businesses of joining a business-to-business barter exchange is the opportunity to make new business connections and to become part of a network which lead to new cash sales and clients (Whitney 2010). Benefits include, "utilizing excess capacity, clearing slow-moving inventory while maintaining price integrity, networking, developing markets, capturing additional sales and increased profits, preserving cash flow, and accessing previously nonaffordable personal goods and services." (Birch and Liesch 1998:331) These benefit the business as a whole and not only the member's trade within the barter exchange. This indicates a dependence of the barter exchange upon its members' activity in the larger, national economy. The barter exchange acts as a marketplace to realize activity that is part of the national economy.

Limitations of the barter exchange include difficulty by members in exhausting their surplus credits, barter being less suited to goods than services, and the limited range of goods and services available in the exchange (Birch and Liesch 1998:332).

While the barter exchange is a zero balance, mutual credit system and therefore the same amount of buying and selling must occur to keep the exchange viable, the benefits identified have largely to do with enabling the business to expand and to sell. Is there possibly a greater 'push' or motivation among members to sell their goods and services than there is a draw to the barter exchange as a market for buyers? Barter exchange owners address the constant need to stimulate spending by expanding the membership and the variety of goods and services on offer (Logie 2010, Napoli-Cohen 2010). If the desire to sell remains higher than the desire to buy in the barter exchange, however, other dynamics could emerge.

1.2 Information Technology

As the barter exchange industry evolves, the offering of products and services continues to grow. Several barter exchange management software application companies offer services which include software licensing and secure data storage. These applications provide almost any barter exchange operator tools to reduce administrative cost and human error and to raise the efficiency of the exchange.

The barter credit system bears a relation to the closed, 'club' membership of the barter exchange. Participation is

exclusive and participants are known to each other and the exchange operator. Transaction information including account balances is completely known to the barter exchange operator and data is generated and recorded.

Stodder notes that information technology may make possible “completely centralized credit accounting...in decentralized markets.” (Stodder 2009:6) Business-to-business barter exchange as it is currently practised seems to fit this description. Barter credit in barter exchange is structured as a kind of information system. No scrip or “physical support medium” (Vasconcelos Freire 2009) is used but rather a system of accounts. With the widespread availability of sophisticated barter exchange management software applications, the usual way to structure and manage the barter credit system is essentially as an information system.

Vasconcelos Freire (2009) posits that social currency should “circulate in a circle” forming a closed loop. Failure to close the loop can lead to deterioration of the system. This occurs sometimes with systems where scrip or a physical form of medium of exchange is used and “leakage” takes place. In contrast, “...when there is no physical support medium circulating in the social currency system, but only a set of recorded information relating to transactions carried out by participants in the system ... the long-term risks and costs of sustaining the system are reduced.” (Vasconcelos Freire 2009: 84-85) This description can be applied to business-to-business barter exchange. The business-to-business barter exchange typically operates as a centrally managed system with an accounting and a marketplace component.

While software applications are not identical to each other, they need to address common issues faced by barter exchange owners. The functions packaged in an application embed best practices in the industry and the software becomes, in effect, a means by which practices are spread and become common. Thus, through the development and proliferation of barter exchange management software applications, standards of practice are shared and shaped. As well, barter exchanges are becoming increasingly networked through their software providers who build and operate common software platforms. These are multi-exchange clearinghouses owned and operated by barter exchange software providers or operated by industry organizations. The option to join a multi-exchange network is offered as one of many services that barter exchange owners can purchase in their software licensing packages.

The barter exchange industry has developed networks of barter exchanges. The International Reciprocal Trade Association (IRTA) operates Universal Currency, the largest multi-exchange platform of the Modern Trade and Barter Industry with about 100 participating barter exchanges. Through Universal Currency, member businesses can trade with member businesses of other barter exchanges. Universal Currency operates throughout the United States and beyond, the barter exchanges forming nodes of the network that connect member businesses. Not all barter exchanges participate and of those that do only about 10-

15% of their member businesses participate. Business-to-business barter exchange remains largely rooted in their particular localities or regions and the types of goods and services offered by member business are mostly appropriate for exchange in the locality or region (Whitney 2010). However, infrastructure exists and continues to develop for private, networked, transnational, centralized, information technology-structured barter exchange systems.

Universal Currency is run from an information technology platform owned and operated by GETS Plus, a barter exchange management software provider. Other barter exchange management software providers such as Barter BCL build on the fact that their barter exchange owner clients use their same proprietary software to build a common platform. Barter exchange owners can choose to join a network of exchanges who are other clients of Barter BCL. Barter BCL networks them through the platform and member businesses of barter exchanges in this network can seamlessly trade with each other over this platform.

2 DEFINING PARAMETERS

2.1 Legal Status

The legal status of community and complementary currencies has historically been an issue, a key point of contention being the constitutionality of the creation of “money”. While social money exist by-and-large with unclear legal status (Vasconcelos Freire 2009) business-to-business barter has clear legal status at least in some key jurisdictions. In the United States, a legal status was secured under the Tax Equity and Fiscal Responsibility (TEFRA) Act of 1982 due in large part to the advocacy of the International Reciprocal Trade Association. Under this act, barter exchanges are granted the status of “third party record keepers” with the same fiduciary responsibilities as banks (Whitney 2010). Barter exchanges are recognized as creating their own medium of exchange, and income earned in “trade dollars” is taxable. Barter exchanges and businesses are obligated to report annually on income earned in barter exchange to the US Internal Revenue Service (IRS) with Form 1099-B “Proceeds from Broker and Exchange Transactions”.

According to the IRS, “A barter exchange functions primarily as the organizer of a marketplace where members buy and sell products and services among themselves.” (“Bartering Tax Centre”) Barter marketplace activity is viewed as an activity of the national economy and hence taxable and barter credit is recognized as an operating within national institutions. Barter credit is defined de jure as a sub-national instrument with rules defining the parameters of operation.

2.2 Fair Market Value

Trade in the barter exchange market is expected normally to take place without the use of national currency. It is also expected that “fair market value” prices be used, “...when a barter exchange member sells a product or service to an-

other member, their barter account is credited for the fair market value of the sale. When a barter exchange member buys, the account is debited for the fair market value of the purchase." ("Bartering Tax Centre") Barter credit units are generally known as trade dollars in the US and the trade dollar regarded as having the same nominal value as the US dollar. "Trade dollars or barter dollars are valued in U.S. currency for the purposes of returns. ... Earning trade or barter dollars through barter exchange is considered taxable income, just as if your product or service was sold for cash." ("Bartering Tax Centre") Barter credit is described as playing the role of cash in barter transaction.

Business-to-business barter exchange is recognized in other jurisdictions as well. In Australia, the Australian Taxation Office rules in IT 2668 that business-to-business barter transactions are to be treated as cash transactions and are taxable (Birch and Liesch 1998). The value of the barter dollar is assessed against the Australian dollar and the price of items should be declared for taxation purposes "at fair market value" (Australian Taxation Office). This is deemed to be, "the cash price which the taxpayer would normally have charged a stranger for the services or the sales of the goods or property." The Australian Taxation Office remarks, "The rules of most business-oriented countertrade organizations specify a rate for converting credit units into an Australian dollar equivalent. Customarily the rules specify that each credit unit has a value equivalent to one Australian dollar." (Australian Taxation Office) Similarly, Revenue Canada IT-490 explains that in Canada income earned through barter exchange is taxable, the barter dollar is considered the same as a Canadian dollar and price of items should be valued as "fair market value" (Revenue Canada). In other words, barter credit units are normally expected to have the same nominal value as national currency units. When they differ, barter credit values are converted to national currency price values for final accounting, and prices prevailing in the national rather than the barter marketplace are to be considered the norm.

In the US, Australia and Canada, barter transactions are taxed like cash transactions. Governments expect income made in barter exchange be declared at fair market value. Additionally, it seems to be the common practice of governments and in the barter industry to deem the trade credit unit to have the same nominal value as the national currency. For example, the WIR, the credit unit of the WIR-Bank, is declared to have the same nominal value as the Swiss Franc (Dubois 2010). Bartercard identifies "clearing slow-moving inventory while maintaining price integrity" (Birch and Liesch 1998:331) as a benefit to businesses of barter exchange. It seems to be common practice to the point that it is assumed that there is a 1:1 relationship between national currency and barter credit nominal values. Pricing in barter exchange references pricing in the national marketplace and national currency and the national currency provides the reference for the nominal value of the barter credit.

The barter exchange marketplace appears to be considered a part of the national economy evidenced by the fact that

barter exchange income is reported to and taxed by the government. It follows that the barter credit also functions as part of the national economy. It is obviously not national currency but is expected to function within limits i.e. only as a medium of exchange within barter exchanges in the same way as national currency. It is by legal definition the functional equivalent of the national currency within barter exchange - the national currency is considered as a primary currency and the barter credit in relation to it as a secondary currency.

2.3 The Barter Exchange Marketplace and Barter Credit Price Values

A medium of exchange is created by the business-to-business barter exchange, the barter credit, to facilitate trade among members. It is a "currency of excess business capacity" in that it is a medium of exchange for a marketplace of excess inventory and service capacity, and its value is directly related by members to what it can buy and sell for them (Logie 2010).

Price values, as discussed above, are normally expected to have the same nominal values in the barter exchange as in the national economy. For example, one trade dollar equals one US dollar. The IRTA states that for the operation of Universal Currency, "...it is expressly understood that for all purposes of valuation one trade dollar is equivalent to one dollar in United States currency." For barter exchanges operating outside the United States, barter credit is valued at, "...the local US dollar equivalent of the country in which the transaction takes place." And where trade is done with a US-based barter exchange, "...the transaction will be valued in US dollars."

Working within parameters set by law, pricing items at the same nominal level in the barter exchange as in the national market is often a matter of policy of the barter exchange organization. The exchange may punish the inflation of prices by taking away membership (Whitney 2010). Under Terms and Conditions of Universal Currency, "Upon acceptance to the UC Member agrees ...To make available goods and/or services to other UC Members, for trade dollars at normal prevailing prices."

This barter credit valuation system is helped by the fact that members have businesses in the national market. Their prices are advertised and known to the public and can be readily compared by other members or barter exchange owner to prices of items in the barter exchange. The worth of the barter credit may also be facilitated by the fact that members are businesses in the national market - the quality of the items in the barter exchange system can be compared to that offered in the national market. Businesses' reputation in the community can be affected by its activities in the barter exchange and members. A fuller investigation of business practices and standards in the barter exchange lies beyond the scope of this paper.

Barter credit is created endogenously in the barter exchange system which is a zero balance system of accounts.

Barter credit comes into existence as items are sold and purchased. It normally has no value outside the exchange by decree. For example, the IRTA states in its Terms and Conditions that, "...Trade Dollars shall not be considered legal tender or security by either the UC or its Members...".

The zero balance account structure of the barter exchange limits the role barter exchange plays for the member business. Businesses as profit-making entities aim to have, generally speaking, positive account balances. This is possible in the national economy. It is not possible in the barter exchange, however, for all members to hold positive account balances. So the membership on the whole cannot sell more than it buys to accumulate credits and the use of the barter exchange can only be secondary for a normal business. Members are motivated to participate in the barter exchange to sell their excess inventory and service capacity and also by the facility it provides to conserve cash/national currency. This is achieved through the capacity to buy without or at a reduced amount of national currency.

The limited usefulness of the barter credit provides a market clearing mechanism in the barter exchange. The barter credit functions normally only as a medium of exchange providing a member little or no benefit as a type of asset. By contrast, national currency is – at least in a stable economy – a valuable asset that businesses strive to hold and accumulate and is relatively precious and scarce. For this reason, a secondary marketplace using national currency as the medium of exchange may not clear as effectively.

3 A TYPE OF REGIONAL ECONOMY

The WIRBank likens its own operation within the "WIR sector" to that of a central bank (Dubois 2010). Indeed, the WIRBank is structured more complexly and with additional features that allows it to create credit and make loans (Studer 1998) that simple mutual credit barter exchanges do not have. In most business-to-business barter exchanges the exchange owner is highly involved in managing the membership and the marketplace as well as the credit system and member accounts. The trade in goods and services among members is, in any case, a key feature of business-to-business barter exchange. The business-to-business barter exchange could be described as a type of regional economy with a centralized administration, a marketplace and a medium of exchange.

3.1 A Two-currency and Two-market System

Exchange in business-to-business barter is in "excess business capacity". Typically, 5 to 15% of a member business' total sales are made in a business-to-business barter exchange, the rest in the national market and beyond. The member business' ability to produce and deliver for the barter exchange market is dependent upon its activity on the whole. At the same time, its activity in the barter exchange could help to sustain and even grow the business. The business expects the main part of its income to be derived from its sales in the national marketplace. It participates in the barter exchange as a secondary activity to de-

rive some value from its excess business capacity. The business is an active member in two marketplaces, that of the barter exchange and that of the national economy. Through the activity of member businesses in both the national market and the barter exchange market a relationship between the two markets is created.

Barter exchanges try to operate within certain parameters, namely that: 1. Business-to-business barter transactions are treated as cash transactions, at least for taxation purposes where this applies, 2. The barter credit unit e.g. the barter dollar is deemed to have the same constant nominal value as the national dollar i.e. 1:1, and 3. The price of items traded in barter credit claimed for taxation purposes be at "fair market value". The barter dollar by definition functions identically to the national dollar within the barter exchange as a medium of exchange. The accepted practice is to keep prices in the barter marketplace and barter credit system at the same nominal levels as in the national marketplace and national currency system.

These definitions imply constraints that impact the management of the barter exchange. Experience has shown there to be a common tendency to inflation or creation of discount markets of barter credit (Studer, T. 1998, Defila, H. 1994, Birch and Liesch 1998). There are indications as well that small barter exchanges commonly experience decrease or cessation of trade activity by members after a "period of initial enthusiasm" (Studer 1998:32). Barter exchange owners expend much time and energy stimulating exchange between members and expanding the membership and offering (Logie 2010, Napoli-Cohen 2010 as cited above). Small barter exchanges seem to stabilize at around 500 members (Napoli-Cohen 2010) and threshold estimates range between "several hundred to a few thousand" (Studer 1998:39). In this respect, the WIRBank with about 60,000 business members and WIR890 million in deposits (Dubois 2010) cannot be readily compared to the small barter exchange. As important at least is the WIRBank's capacity to provide loans to members. The details of WIRBank's structure will not be elaborated here but Studer identifies this as "the most powerful driving force" to WIRBank's operation (Studer 1998:32). A full exploration of the systemic nature of barter exchange including the dynamics of and between inflation, discount markets, excess supply and excess demand lies beyond the scope of this paper.

It is possible that the stronger driver of demand in barter credit is a common desire to sell rather than a desire to buy in the barter exchange marketplace or that there exists a dynamic between the demand and supply of goods and services in the barter exchange marketplace that relates to the demand for barter credit. While the level of barter credit created does represent available buying power, it is also an indication of the sales that are made. It can therefore not be assumed that the demand for barter credit indicates a demand for purchasing power. A barter exchange with stronger desire to sell than to buy in its marketplace could experience problems, possibly chronic unused positive account balances or a discount market for barter credit.

The barter exchange owner imposes rules and enforcements to curbs inflation and discount market tendencies. For example, the WIRBank disallowed a discount market in WIR beginning in 1973 (Stodder 2009) and the IRTA recommends the revoking of membership of any business that inflates its barter exchange prices (Whitney 2010). Allowing for a portion of a transaction to be in cash may be another way of controlling the value of the barter credit. IRTA finds it acceptable practice to allow a portion of large transaction i.e. \$25 000 and over to be done in cash/national currency. The purpose is to allow the seller to cover cash costs for material inputs in a contract. Another cost is the transaction fee imposed by the barter exchange owner for the service it provides i.e. the opportunity to trade in the barter exchange, for example, 6% of the price of the item to the buyer and 6% to the seller (Logie 2010) to be paid in national currency. Tax would also be paid in national currency. The WIRBank allows its members to receive a portion of its sales revenue in cash, and allows members to decide on this proportion. Most members receive 30-50% of their revenue in WIR and the rest in Swiss Francs (Dubois 2010). This policy could have an effect on stabilizing the value of the WIR or barter credit as it reduces the cash cost of transacting in barter credit.

3.2 Productive Capacity and Economies of Scale

More fundamentally, the ability of business-to-business barter exchanges to meet these constraints depends upon member businesses' capacity to deliver goods and services at competitive or "fair market" prices. This would be difficult to achieve if members were not businesses for this requires market-level production efficiency and know-how to produce at competitive quality and prices. Consider a simple example - an inexperienced haircutter with no business location might not be able to gauge the quality and fair market price for his service on the barter exchange. A possible risk to the value of the exchange and to the value of the barter credit is introduced. This could lead to members seeking compensation for the risk or cost of holding barter credits. Conversely, a professional salon with experienced staff could bring value to the exchange and the barter credit. To meet the constraints of pricing at fair market value the barter exchange owner must manage quality - of the membership and that of the goods and services offered.

In being a market of excess business capacity, business-to-business barter exchange benefits from the capacity of the member businesses to produce at the quality and quantity that they do as members of the larger, national economy. Quantity or availability is not necessarily the same as that on the national market but supply is generally not an issue as members have unused capacity they are motivated to sell. More importantly, capacity of the participating business is geared to the scale and scope of their market in the national economy. If only 5 to 15% of a business' total sales are made in barter exchange it follows that the total volume of items produced is 20 to 7 times that which is offered by the business in the barter exchange. The unit cost for the items is accordingly low in the barter exchange relative to the volume of items offered. Its cost margins are

relative to the prices it charges on the national market. In addition, it participates in the barter exchange with excess capacity which, if unsold, would represent not only lost income but unrecuperated sunk cost. This provides the business with a margin and a motivation to be able to price items in the barter exchange at fair market value.

Given the parameters defined by law and common practice, business-to-business barter exchange is dependent upon the national market. More precisely, its market in excess business capacity needs the low unit production cost available to its member businesses to be able to price as fair market and same nominal levels as in the national economy. Members' individual choices to participate in the business-to-business barter exchange provides a mechanism that makes the adherence to these constraints possible. Members can choose not to participate, for example, when cost margins are too high or excess capacity levels too low for it to be worthwhile to put any particular item on offer, or to put a greater volume of items on offer in the barter exchange market when demand falls in the national marketplace.

Through the activity of member businesses, the business-to-business barter exchange and the national economy become intertwined. The barter exchange is and must be a marketplace of excess business capacity to sustain the value of the barter credit and maintain the viability of the system as a whole. The barter exchange is for the member business a secondary marketplace. Its main activity is in the national economy. The national economy provides the primary marketplace and primary currency. The barter exchange provides the secondary marketplace and secondary currency. Together, the barter exchange and the national economy function as a two-currency and two-marketplace system.

3.3 Keeping nominal price levels stable in the region: A two-marketplace and two-currency system

Businesses in a region normally face falling demand during a downturn in the economy. The fall in demand translates directly into fall in sales and fall in income for the business. At the same time, excess capacity increases as sales decrease. Falling income leads to a cashflow squeeze forcing businesses to reduce costs e.g. by laying off workers or reducing production. To maintain sales and income, in the face of decreased demand and higher levels of excess inventory and capacity, businesses often resort to reducing prices to attract customers. In a region with one, primary currency, the lowering of price is one of the main tools available to a business experiencing slumped sales. In a region where all businesses lower their prices, however, there might be no increase in sales and possibly a fall in income and increase in unemployment. This may lead to a downward spiral of a general fall in prices, or deflation. Stodder (2009) suggests that if barter credit functions as a secondary, residual currency to the primary, national currency that barter exchange activity would have an anti-deflationary effect. The following is an exploration of this idea.

A region with business-to-business barter exchange provides businesses with an additional option. Businesses can put their (growing) excess capacity to sell in the barter exchange marketplace. The possible increase in activity in barter exchange during downturns (Stodder 2009) suggests that demand and supply of goods and services increase together in the barter exchange during a downturn. An increase in demand could be due to businesses seeking to preserve cashflow and to cut costs by reducing cash purchases i.e. in the national marketplace and national currency by making purchases in the barter exchange instead. An increase in supply could be due to member businesses putting a greater volume of goods and services on the barter exchange market as excess capacity increases. The concurrent increase in demand and supply in the barter exchange could help to keep prices stable in the exchange.

The business-to-business barter exchange could help provide price stability during downturns in a region in two ways:

- By maintaining stable prices within the barter exchange,
- By helping to maintain stable prices in the national marketplace and currency by providing a secondary marketplace and currency for growing excess capacity.

The choice available to individual businesses to participate in the barter exchange and the national economy is the mechanism linking the two to create a two-currency and two-marketplace system.

The barter exchange is a secondary marketplace for excess business capacity. It provides the business with a means to distinguish items to sell in the national marketplace and national currency from items to sell in the barter exchange marketplace and barter credit system. The barter exchange provides the business with a separate facility to recuperate and lower costs from excess capacity. This is an alternative to lumping a growing inventory into the offering on the national marketplace when sales are decreasing. Instead, the growing excess capacity can be put in the barter exchange marketplace where demand may also be growing because other businesses experiencing the same downturn may turn to the barter exchange for buying to conserve cashflow in the national, primary currency. Price levels in the barter exchange could remain relatively stable if supply and demand in the exchange both increase. At the same time, the conservation of cashflow through the capability to buy in the barter exchange marketplace plus the separation of pricing from that in the national marketplace provide the business with the means to maintain its national currency price levels.

Stable prices in national currency would inform the dynamics of the barter exchange. Pricing within the barter exchange, following the rule of fair market pricing, follows pricing in the national marketplace. If prices in national currency are stable, prices in the barter exchange would tend to reflect this.

In a region facing downturn, these dynamics could have anti-deflationary effects.

3.4 Two-currency Pricing System

The barter exchange has a two-currency pricing mechanism that provides an alternative way to price. This is a system that requires a certain relationship between the primary, national currency and the secondary, barter credit. That is, that the barter credit functions like the national currency but has a limited use and therefore value. This describes how the barter credit is defined through legislation and through industry policy and practice i.e. the barter dollar is defined as usually having the same nominal value as the barter dollar, fair market prices are to prevail, and the barter credit functions only as a medium of exchange and has no store of value. In this way, the primary, national currency and the secondary, barter currency can function seamlessly in a two-currency system.

Pricing can be expressed seamlessly in nominal values between the two currencies when they both reference the primary or national currency. The "price" meaning the cost of an item can be differentiated by changing the proportion of each currency rather than by changing the nominal value. This is because the secondary currency is worth less than the primary currency due to its more limited usefulness. A higher price then could be expressed by increasing the proportion of national or primary currency in the price, a lower price as a lower proportion of primary currency. This two-currency pricing mechanism is used by the WIR-Bank by allowing prices to be expressed in a mix of WIR and SFr and by IRTA by allowing large transactions to be priced partly in national currency.

The region with a business-to-business barter exchange provides businesses with the facility to operate in a two-marketplace and two-currency system. This two-currency system provides a mechanism to maintain nominal price levels while reacting to changes in demand in the national marketplace and for the national currency. This would have an anti-deflationary effect in the region.

CONCLUSION

The business-to-business barter exchange is recognized in some jurisdictions. In the United States it is described as the organizer of a marketplace for exchange among businesses. Barter exchanges have the status and responsibility of third party record keeper as banks do. Transactions in barter credit are treated like transactions in cash for taxation purposes. The activities of barter exchange are treated in law as integral to the national economy. The barter credit seems then to be implied or defined as a stand in for cash. That is, the national currency is the reference and primary currency that defines the nominal value of the barter credit or secondary currency i.e. always identical to the national currency. Pricing in the barter exchange marketplace is defined by that in the national marketplace i.e. fair market value. The secondary, barter currency is defined as the functional equivalent of the primary, national

currency for barter exchange trade. But it is of lesser value because of its limited usefulness so it is a currency that extends the use of the national currency into the economy via the barter exchange. It is a residual (Stodder 2009) or extension currency of the national currency by definition.

The business-to-business barter exchange also provides the region with a separate marketplace that allows businesses to distinguish items to sell on the national marketplace from items to sell in the barter exchange. Trade in this secondary marketplace is facilitated and made separate in part by the barter credit system. The barter exchange is a facility that provides the possibility for businesses to maintain stable price levels in the national marketplace and national currency by providing this secondary marketplace. It also offers the possibility of maintaining stable price levels in the barter exchange system if demand grows with supply and pricing reflects fair market value.

Business-to-business barter exchange provides the region a facility for a two-marketplace and two-currency system. The interchangeability of the primary, national currency and the secondary, barter exchange currency is created by definition i.e. same nominal value and fair market pricing within the barter exchange system. Additionally, the barter credit is of lesser value because of its limited use. The interchangeability but difference in value of the primary and secondary currency creates a two-currency pricing mechanism that can maintain stable nominal price levels in the region. This is because cost can be expressed by changing the proportions of primary and secondary currencies in the price without changing price level.

The business-to-business barter exchange acts as an extension into the national economy, the barter exchange marketplace as a secondary, extension marketplace and the barter currency as a secondary, extension currency. Member businesses choosing to participate in the national economy and in the barter exchange is the mechanism relating the two systems. When businesses use the barter exchange during times sales are falling in the national economy, the barter exchange provides anti-deflationary effects.

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APPENDIX A

Keeping Nominal Prices Stable: A Two-currency Pricing System

The capacity to express price in both barter credit and national currency creates a two-currency pricing mechanism that functions to keep nominal prices stable. The following is an illustration of how this functions within a two-currency system with flexible pricing i.e. items may be priced with a number of different combinations of primary and secondary currencies.

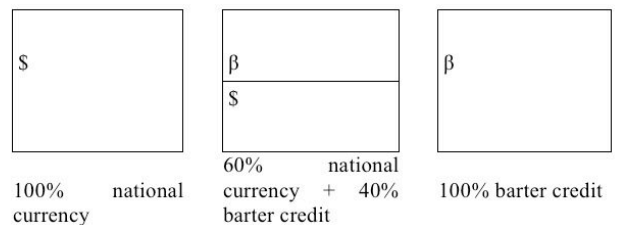
In this system, the national or primary currency is more highly valued than the barter credit or secondary currency. Participants operate within the constraints that the secondary currency references the primary currency and maintains fair market prices i.e. pricing in the primary marketplace prevails and final accounting is in national currency.

Nominal price levels in this example are identical (1:1) between primary and secondary currency but the system could operate in principally the same way if this were not the case.

A

Sellers change the price of items on offer not by changing the nominal price of items to sell but by changing the proportion of the price in barter credit and national currency. In doing so, the seller changes the price of the item on offer as requiring a higher or lower amount of national currency and barter credit in payment but the nominal price remains unchanged.

Example: A set price dinner for two costs \$70 at a restaurant, The Fish Plaice. The Fish Plaice is a member of a business-to-business barter market. It charges other members \$70 payable 60% in national currency and 40% in barter credit during peak hours. In off-peak hours it charges members \$70 entirely payable in barter credit. The nominal price is 70 regardless of the mix of national currency and barter credit in which it's paid.



Price in Business-to-business Barter System

Where α = proportion of price payable in national currency
 $\$$ = national currency
 β = barter credit
 nominal units is national currency and/or barter credit

The price is

$$P = \alpha(\# \text{ nominal units}) + (1-\alpha)\beta(\# \text{ nominal units})$$

In our example, the prices are

$1\$(70) + 0\beta(70) = \70 if paying entirely in national currency

$.60\$(70) + (1-.60)\beta70 = \$42 + \beta28 = 70$ nominal units if paying in a mix of national currency and barter credit

$0\$(70) + 1\beta70 = \beta70$ if paying entirely in barter credit

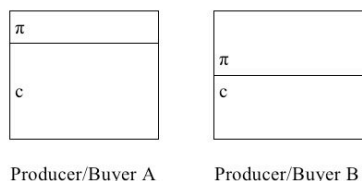
Adjusting the proportion of the price in national currency and barter credit adjusts the price or cost to the buyer while keeping the nominal price the same.

B

What is the cost to the buyer? The buyer who is a member of the B2B barter system is concerned with how many dollars she/he must pay. The buyer is also a producer in the business-to-business barter market. Her buying power is represented by the amount of barter credits she holds. She has earned it by selling her goods in the barter exchange. The price she charges is comprised of cost and profit. The lower the cost margin, the greater the ratio of buying power her cost 'investment' is yielding for her in the barter exchange.

Where P = price
 B = buying power
 c = proportion of the price that is cost
 π = proportion of the price that is profit

$$P = B = 1 = c + \pi$$



The cost, c\$, differs for every producer/buyer in the business-to-business barter market i.e. Each has her/his own cost margin.

C

In the business-to-business barter market, the dollar cost of a purchase is

$$\$C = \alpha(\# \text{ nominal units}) + (1-\alpha)(\# \text{ nominal units})c\$$$

Example: The owner of The Bread Shop wants to purchase the \$70 dinner for two at the Fish Plaice as a gift for her employee. The cost margin, c, for her store is .73 i.e. For every dollar of bread she sells, her cost is 73 cents and her profit is 27 cents. The cost of the dinner to the owner of The Bread Shop is

$$\$C = 1\$(70) + 0(70).73 = \$70 \text{ if paying with dollars only}$$

$$\$C = .60\$(70) + (1-.60)(70)(.73) = \$42 + \$20.44 = \$62.44 \text{ if paying 60\% in dollars and 40\% in barter credit}$$

$$\$C = 0\$(70) + 1(70)(.73) = \$51.10 \text{ if paying 100\% in barter credit}$$

A different member of the business-to-business barter market will face different costs for the same dinner depending upon that business' cost margin.

The capacity for each individual producer/buyer/member of the business-to-business barter system to make choices about the proportion of national currency and barter credit in the price of items to sell is an important feature of this complementary currency pricing mechanism. This creates a mechanism that is responsive to a very micro and local level – micro to the level of the individual buyer/seller, local to the level of the individual business as it operates in its milieu. Even within the business-to-business barter network the combinations of prices expressed as national currency and barter credit will differ and change.



International Journal of Community Currency Research

Volume 16 (2012) Section D 156-168

EMERGING TREND OF COMPLEMENTARY CURRENCIES SYSTEMS AS POLICY INSTRUMENTS FOR ENVIRONMENTAL PURPOSES: CHANGES AHEAD?

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ABSTRACT

Using complementary currencies systems as policy instruments for environmental purposes is a trend that seems to be progressively emerging in Europe. The Belgian Science Policy INESPO Project, which provides the framework for the research presented in this paper, is building on this emerging trend. The aim of the INESPO project is indeed to build new instruments for energy saving policies in the household sector based on the innovative coupling of Complementary Currencies (CC) and Smart Meters (SM). According to the rationale of the project, the new CC-SM instruments should promote behavioural changes in everyday life as well as encourage households to invest in energy efficiency. The idea behind the project is not to miss the opportunity of including an incentive scheme for behavioural change should a significant SM roll-out take place.

In order to gain insights for the design of the CC part of the instrument, a first step was to turn to projects that had in the past already used CC as policy instrument for behavioural change towards sustainability. To this purpose, projects which have pioneered this path in Europe were analysed. However, although this emerging trend for CC systems had not been left unnoticed by academics (see, for instance Seyfang, 2006 for an insightful discussion on the contribution of NU-Spaarpas to sustainable consumption, or Blanc 2010 and Blanc and Fare, 2010 for a system typology), it appeared that, to the best of our knowledge, no taxonomy of their constitutive parameters had been developed yet.

In this paper, we would like to contribute to the research on CC as policy instruments for environmental sustainability by presenting a selection of such CC systems and by proposing a taxonomy of their constitutive parameters. The resulting hierarchical classification of parameters is also intended to serve as a building tool for designing similar CC systems. However, in our view, “going down the bones” of CC systems, as it is done with the taxonomy, is not enough to make such CC systems thrive. Indeed, beyond the systematic list of parameters that will define the global architecture of the system, attention should also be given to “flesh” (e.g. expectations from stakeholders and carriers of the system) and “soul” (e.g. the conceptual framework used to build the system).

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INTRODUCTION

In the classification they propose for complementary currency systems, Bernard Lietaer and Margrit Kennedy (2008) underline the very small number of projects with environmental aims they could list at the time of their writing. Indeed, using complementary currency systems for environmental purposes is a trend that seems to be only progressively emerging in Europe.

The Belgian Science Policy INESPO Project¹, which provides the framework for the research presented in this paper, is building on this emerging trend. The aim of the INESPO project is indeed to design new instruments for energy saving policies in the household sector based on the innovative coupling of Complementary Currencies (CC) and Smart Meters (SM). According to the rationale of the project, the new CC-SM instruments should promote behavioural changes in everyday life as well as encourage households to invest in energy efficiency. The idea behind the project is not to miss the opportunity of including an incentive scheme for behavioural change should a significant SM roll-out take place.

In order to gain insights for the design of the CC part of the instrument, a first step was to turn to projects that had in the past already used CC as policy instrument for behavioural change towards sustainability. To this purpose, projects which have pioneered this path in Europe were analysed. However, although this emerging trend for CC systems had not been left unnoticed by academics (see, for instance Seyfang, 2006 for an insightful discussion on the contribution of NU-Spaarpas to sustainable consumption, or Blanc 2010 and Blanc and Fare, 2010 for a system typology), it appeared that, to the best of our knowledge, no taxonomy of their constitutive parameters had been developed yet.

As the process of designing the new CC-SM instrument was further carried on, the need for such a taxonomy was increasingly felt. Indeed, it seemed difficult to go on without a systematic and clear understanding of all the parameters of the CC system we had to build. The needed taxonomy was thus developed by first systematically analysing a selection of projects that had already used CC as policy instruments for sustainability. The aim was then to identify, during an iterative process, the main independent parameters of the CC architectures and sorting out the logical sequence for defining them when designing a new CC-SM instrument.

In this paper, we would like to contribute to the research on CC as policy instruments for environmental sustainability by presenting a selection of such CC systems and by proposing a taxonomy of their constitutive parameters. The resulting hierarchical classification of parameters is also intended to serve as a building tool for designing similar CC systems. The paper is structured as follows. The next section describes a selection of projects (NU-Spaarpas, E-

portemonnee and Torekes) that have already used CC as policy instrument for behavioural change towards sustainability, as well as two proposals that have similar objectives but have not been implemented yet (Biwa Kippu and Tradable Energy Quotas). The following section is dedicated to presenting the taxonomy of constitutive parameters of such systems. In the last section, it is argued that other dimensions should also be taken into account, when developing CC systems as policy instruments, with a special focus on conceptual frameworks for behavioural changes. Indeed, although not always being explicitly defined in projects, the way to frame behavioural changes can have a major influence on the way a project is built.

USING COMPLEMENTARY CURRENCIES AS POLICY INSTRUMENTS FOR BEHAVIOURAL CHANGES TOWARDS SUSTAINABILITY

Three projects were initially selected as highly representative of CC systems with sustainability aims. In the following paragraphs, those three projects (NU-Spaarpas, E-portemonnee and Torekes) which have pioneered the emerging trend of using CC as policy instruments for more sustainable behaviours in Europe are presented. However, in the process of building the taxonomy, two other projects were also considered. Although there were only in the form of proposals (Biwa Kippu and Tradable Energy Quotas or TEQs), they introduced new concepts that widened the range of key parameters to include in the taxonomy.

NU-Spaarpas

NU-Spaarpas was launched in the City of Rotterdam (NL) as a loyalty card scheme to be used in participating independent retail shops (van Sambeek and Kampers, 2004). This CC system aimed at promoting 'greener' consumption and behaviour. The basic principle of the system was that when a card holder bought a product in a participating shop, he was rewarded with more points when purchasing a product that was identified as 'green' than when purchasing another product. Besides, some eco-friendly behaviours, like recycling, were also rewarded with points. The points earned could then be used for a variety of products and services like 'gifts' in the participating shops, entrance tickets for events or one-day passes for public transportation.

A complementary objective of the project was to strengthen the competitiveness of local small and medium enterprises by offering them the advantages of belonging to a large-scale loyalty scheme. Since 'green' products were granted more points, it could also be expected that shops would be interested in proposing those products.

The NU-Spaarpas project started in May 2002, after a development phase headed by a private consultancy firm. Important financial resources were necessary to develop and run the project, with costs related to human resources and promotion, as well as to technology development and

1 Innovative Instruments for Energy Saving Policies (INESPO) project carried out in the framework of the Science for a Sustainable Development Programme of the Belgian Science Policy under grant INESPO SD/EN/09. Website: www.inespo.be

hardware. Those costs were mostly covered by the European Commission in the framework of the LIFE III Environmental Programme and by the Province of South Holland (van Sambeek and Kampers, 2004). The role of public authorities was not limited to funding the project, however, local authorities also actively supported it. Indeed, three departments of the Rotterdam Municipal authorities were involved in the NU-Spaarpas project.

Another striking characteristic of the NU card scheme was its strong private component. Indeed, the project was designed and headed by a private consultancy firm. Besides, a partnership was established with a cooperative bank, and, most importantly, the private sector played a key role in the loyalty scheme, with a number of participating small and medium enterprises that peaked around 80 in June 2003 (van Sambeek and Kampers, 2004). The NU project can thus be framed as an 'eco-business-behavioural' project, originating in a private initiative that succeeded in finding public and private support (see Joachain et al. 2009).

Designed in a top-down fashion, the project targeted the 'grey masses' of consumers that were neither pro-environmental, nor anti-environmental. This explains the openness regarding the list of shops participating to the scheme, and the products rewarded with points. All kinds of products were rewarded in the loyalty scheme, whether 'green' or not, with the products identified as 'green' receiving more points. This position was also adopted to target a large basis of consumers. According to the published results of the project, NU-Spaarpas included 10,000 cardholders and 100 participating shops at its peak time (van Sambeek and Kampers, 2004). The project came to a premature halt end 2003. This was mostly due, according to one of the leaders of the consultancy firm, to a change of political majority (see Joachain et al. 2009).

E-portemonnee

The project E-portemonnee, which was initiated in Overpelt (Province of Limburg, BE) with the name 'Zet milieu op de kaart' (literally put the environment on the chip card) is another case that illustrates the emerging trend to use CC systems as instruments for sustainability policies. The aim of this CC system, which is still running, is to promote sustainable behaviours (Bond Beter Leefmilieu, 2006). In order to do so, the system functions with two lists: a list of sustainable actions, the "Earning list" ("Verdienlijst") (e.g. switching to green electricity, following composting courses, placing a 'no junk mail' sign on the mail box) and a list of rewards, the "Silver list" ("Verzilverlijst") (e.g. entrance tickets for the municipal swimming pool, tickets for public transportation, energy saving lamp bulbs). By performing the targeted sustainable actions from the first list, participants earn points that they can use to obtain services or products from the second list.

This project, which is also fairly recent, was jointly set up by a non-profit organisation and 'Afvalintercommunale Limburg.net' (i.e. the structure put in place by the towns/

cities of the Province of Limburg for waste management). In 2003, the project was accepted for financial support by the Flemish Government, on top of the financing and resources provided by Limburg.net, with a total budget lower than 100,000 Euros (Bond Beter Leefmilieu, 2006). After a development phase, the project was launched in November 2005 in the town of Overpelt for a trial period that lasted until 31 October 2006. According to the published results for this trial phase, one family out of 5 has obtained / used E-portemonnee points (Bond Beter Leefmilieu, 2006). Building on the success of this trial phase, Overpelt carried on with the project and 5 other towns in the Province of Limburg joined E-portemonnee as well. It is the Belgian electronic Identity card that is used as a means of identifying the participants in order to manage their E-portemonnee accounts.

Even more so than in the case of NU-Spaarpas, public authorities played a central role in the development and implementation of E-portemonnee. Limburg.net was very active in bringing the project to life, and the Flemish authorities provided financial support. Besides, and most importantly, the implementation of the project took place at the level of the participating towns. Indeed, the decision to enter the scheme, as well as the financing and operating of the CC system was in the hands of municipal authorities. Each participating town had to build its own set of two lists, one with the actions rewarded, and one with the communal services and products offered. In this sense, E-portemonnee is very much anchored in the local community and used as an instrument for sustainability policies (see Joachain et al. 2009).

Compared to NU-Spaarpas, a major similarity is the use of the scheme as a policy instrument in a top-down approach with an important part played by public authorities. However there are striking differences in the exclusive focus on behavioural changes, and the leading role of local municipalities in E-portemonnee. Indeed, the consumption aspect is, to a great extent, absent from E-portemonnee: it is mostly everyday life actions that the project is aiming at changing. There is no loyalty scheme attached to E-portemonnee and hence, no economic development objective for local SME's. The role of the private sector is limited principally to sponsoring the project (e.g. through offering products for the "Silver list"). In line with this, public authorities are heading the project, and have decision power at most of the management levels of the project.

Torekes

The CC project Torekes, which was initiated at the end of 2010 in a deprived area of the City of Gent (Belgium), has mixed social and environmental objectives. Indeed, the aim of this project is to revitalize the area of Rabot-Blaisantvest which is, according to official figures (City of Gent, wijkfiches, Rabot-Blaisantvest), one of the most densely populated and poorest area of the City (e.g. population is 6 times denser, number of asylum-seekers and non-Belgian residents is more than twice higher, unemployment rate is much higher and revenues much lower than on average in

the rest of Gent). By rewarding actions that contribute to a greener environment and improve social cohesion, the Torekes is willing to improve the quality of life in this area. In order to achieve this, the 'two lists principle', as in E-portemonnee, has been favoured: a list of "To do" ("Te doen") and a list of "Presents" ("Kado's") (see www.torekes.be).

The social and environmental aspects of this project are, of course, reflected in the choices made for both lists. The "To do list" ("Te doen") explains how residents of Rabot-Blaisantvest can obtain CC units (called Torekes). This list includes items related to caring for one's street (e.g. repainting the front of one's house or putting a plant tub on the window sill), or contributing to the improvement of the area (e.g. participating to 'cleanup days' or taking care of the community barbecue). Residents of Rabot-Blaisantvest can also be rewarded for helping others to do sports (e.g. as football trainer for kids or by coaching adult for jogging), and for doing something for the environment (e.g. switching to green electricity, placing a no junk mail sign on their letterbox). In turn, they can use their Torekes for a list of "Presents" like public transportation tickets or to go to the movies. Torekes can also be spent in shops (e.g. groceries, bakeries, bike shops, second hand shops) and to do sports. But the most innovative, and probably one of the greatest success of this project is to propose Torekes as the only means of payment accepted for renting a small plot in community gardens that are participating to the project.

Torekes results from the joined initiative of non-profit organisations and the City of Gent. The Flemish Region is backing the project that they view as a pilot experiment for using CC as policy instrument for social innovation. This pilot project is intended to run until end 2012. The first results gathered after six months show that around 1 household out of 10 in the area have been in touch with Torekes. Details are also provided on how Torekes were obtained and used. Two facts stand out from those detailed results. On the obtaining side, collective actions (like 'cleanup days') organised by neighbour association or schools have encountered an enormous success. On the using side, Torekes have mainly been spent in shops, which could be expected, but the other great favourite was the renting of a plot in the community gardens (Torekes, verslag, 2011). This success of collective actions and community gardens is all the more interesting as it is the result of co-building this project with experienced local associations. Besides, as it is argued by a participating non-profit organisation, the fact that community gardens could only be rented in Torekes was a key motivator for residents to participate (Bienstman, 2011). This illustrates how offering a reward that is well in phase with the participants' needs and that can only be obtained with CC units is a powerful reinforcer for a CC system.

Another view on the question: tickets and quotas

The proposal that was made by Lietaer and Takada to public authorities in Shiga Prefecture (Japan) stems from another rationale than NU-Spaarpas, E-portemonnee and

Torekes. Indeed, the idea behind this proposal was to develop a new policy instrument that could contribute to restoring the ecosystem of Lake Biwa without bringing an additional burden to public finance. A short description of the proposed scheme, as presented in Lietaer and Takada (2010) is given in the following paragraphs. Each family has to contribute to the system by providing a given number of "tickets" (named Biwa Kippu) to public authorities each year. Some exceptions are foreseen (e.g. for people with disabilities). The Prefecture of Shiga issues the tickets and selects the activities through which families can earn those Biwa Kippus. No payment in Yen is accepted by the Prefecture in place of the tickets, but Biwa Kippus can be exchanged between families (on a free market basis). Non-profit organisations also play a role in the scheme, either by achieving some of the tasks and earning Biwa Kippus or by acting as intermediaries between public authorities and the residents (e.g. organising and supervising some of the proposed activities).

Another proposal that presents some similarities with Biwa Kippu is the Tradable Energy Quotas (TEQs) that was pioneered by Fleming. This proposal was able to raise interest from public authorities in the UK and led to a report published in association with The All Party Parliamentary Group on Peak Oil (Fleming and Chamberlin, 2011). This type of schemes also became an object of research for the academic community that explored, amongst others, its link to complementary currencies (Seyfang, 2007). In TEQs scheme, as explained in Fleming and Chamberlin (2011), public authorities play a central role by defining a 'Carbon budget' and issuing TEQs units accordingly to individuals. Every adult receives an equal 'free entitlement' of units in a TEQs account, while other economic actors have to bid for their units. Units are used when buying energy (i.e. a calculated number of units is deducted when buying electricity, petrol, etc.). It is foreseen in the scheme to lower the 'Carbon budget' every year in order to bring UK into a more sustainable trajectory regarding the problematic of climate change and peak oil.

As this brief description shows, Biwa Kippu and TEQs are built around a model that is very different than the one used for NU-Spaarpas, E-portemonnee and Torekes. Indeed, whether by using 'tickets' or 'quotas', public authorities are regulating the contribution of households/individuals to reach specific objectives. In the case of Biwa Kippu, the system sounds like a 'tax in CC' or rather given the nature of the contribution that is asked from families, a kind of "civil service". However, bearing in mind the possibility of families to buy Biwa Kippus with Yen, on a free market basis, this system can also be viewed as a kind of tax that families can pay either in Yen (at a price that will be determined by the market) or by giving some of their time to the restoration of the ecosystem of the lake. Regarding TEQs, targets are set by public authorities regarding carbon emissions (i.e. the 'Carbon budget') which determine, in turn, the quotas allocated to each adult in the country. If the quota is exceeded, participants have to bid

for their extra units, which brings market mechanisms back into play, as is also the case of Biwa Kippu.

In both proposals, participation is mandatory and it is expected that, amongst other reasons, individuals will be motivated to participate on the basis of their willingness to comply with the regulations set by public authorities. Both projects are also based on a top-down approach imposed by public authorities. Biwa Kippu and TEQs are proposals for systems that have not been put in place yet. It is not the purpose of this paper to explore the feasibility of such systems or the many issues that would go along with their application. Rather, they have been taken into account as theoretical alternatives to projects like NU-Spaarpas, E-portemonnee and Torekes where participants act on a voluntary basis and are rewarded for performing the desired behaviours.

DEVELOPING A TAXONOMY: METHODOLOGY AND RESULTING HIERARCHICAL CLASSIFICATION

Methodology

The previous section highlights the fact that CC systems used as policy instruments for behavioural changes towards sustainability display similarities but can also be designed in very different ways regarding objectives, architecture and management. Bearing in mind the main goal of the INESPO project, which is to design new policy instruments that integrate CC and SM, it seemed crucial to gain a clearer view on the constitutive parameters of those CC systems. Indeed, in the literature, useful descriptions of NU-Spaarpas, E-portemonnee and Torekes were found, as well as different system typologies. This, together with interviews that we carried out, provided a mix of information regarding how those systems were set up, their functioning, the actors involved, the form of the currency they used, etc. However, what was lacking in order to design the INESPO system was a systematic and hierarchical classification of the constitutive parameters of those systems.

Taxonomy, although best known in the realm of biology, seemed the most appropriated methodology to develop such a hierarchical classification of CC parameters. Indeed, on the one hand taxonomy is also used in social sciences (see, for instance, for a taxonomy of intrinsic motivations for learning, Malone and Lepper, 1987) and, on the other hand, developing a taxonomy also provides a checklist of parameters to build CC systems, which is precisely what is needed for INESPO.

It was thus requested to literally go 'down the bones' of those CC systems to come up with a well-structured list of parameters that could be used for designing the INESPO systems. In order to do this, we proceeded in an iterative manner, with feed-back at each stage between the parameters that resulted from the systematic analysis of the selected systems (i.e. NU-Spaarpas, E-portemonnee, and Torekes) and the parameters that were identified as necessary to build the new INESPO CC system. Besides, proposal

(i.e. Biwa Kippu and TEQs) were also taken into account for the alternative choices they provide compared to already implemented systems.

This taxonomy was thus developed for CC systems that are used as policy instruments for behavioural change towards sustainability. In doing this, the objective was on the one hand to provide a systematic classification of parameters for existing systems, and, on the other hand, to serve as a tool for building similar systems, as was experimented with INESPO. The question of whether, and to which extent, this taxonomy could be usefully applied to and perhaps used as a building tool for other kinds of CC systems than those considered in the framework of this research deserves further investigations.

Taxonomy of constitutive parameters for CC systems

The work carried out to build the taxonomy sheds light on two main aspects of CC systems: their objective(s) and their architecture. Indeed, setting clear objectives for the CC system is an all-important step that involves discussions, and sometimes co-creation between developers and carriers of the project, as well as stakeholders. The architecture itself which is the object of the taxonomy presented in the following paragraphs will have to reflect those objectives.

Taking a broad look at the taxonomy, we see that the architecture of the CC systems rests on three main pillars for which the following terminology was chosen: the rules, the user access points and the management (see figure 1). Each pillar is constituted by one or more blocks of parameters and, as could be expected, there is an important number of parameters within each block. When building a new system, choices will thus have to be made for all those parameters of the architecture, so that they all contribute to the objective(s) which must be well-defined before developing any CC system. However, in this paper, we will concentrate on those parameters that are the most visible for the participants to the CC systems and that belong to the pillar we have called the rules.

Rules

The rules relate mostly to what people will see and understand from the CC system. They comprise three main blocks of parameters that have to deal with: the motivation to participate, the operations and the currency itself.

Indeed, in the phase of designing a CC system, the first logical step, once the objective(s) are set, is to decide how to motivate people to get on-board. The next step is then to design the functioning of the system accordingly, and then to choose the parameters for the currency itself. All those choices are interrelated in the sense that they create dependencies, and, should all contribute to build a consistent CC system.

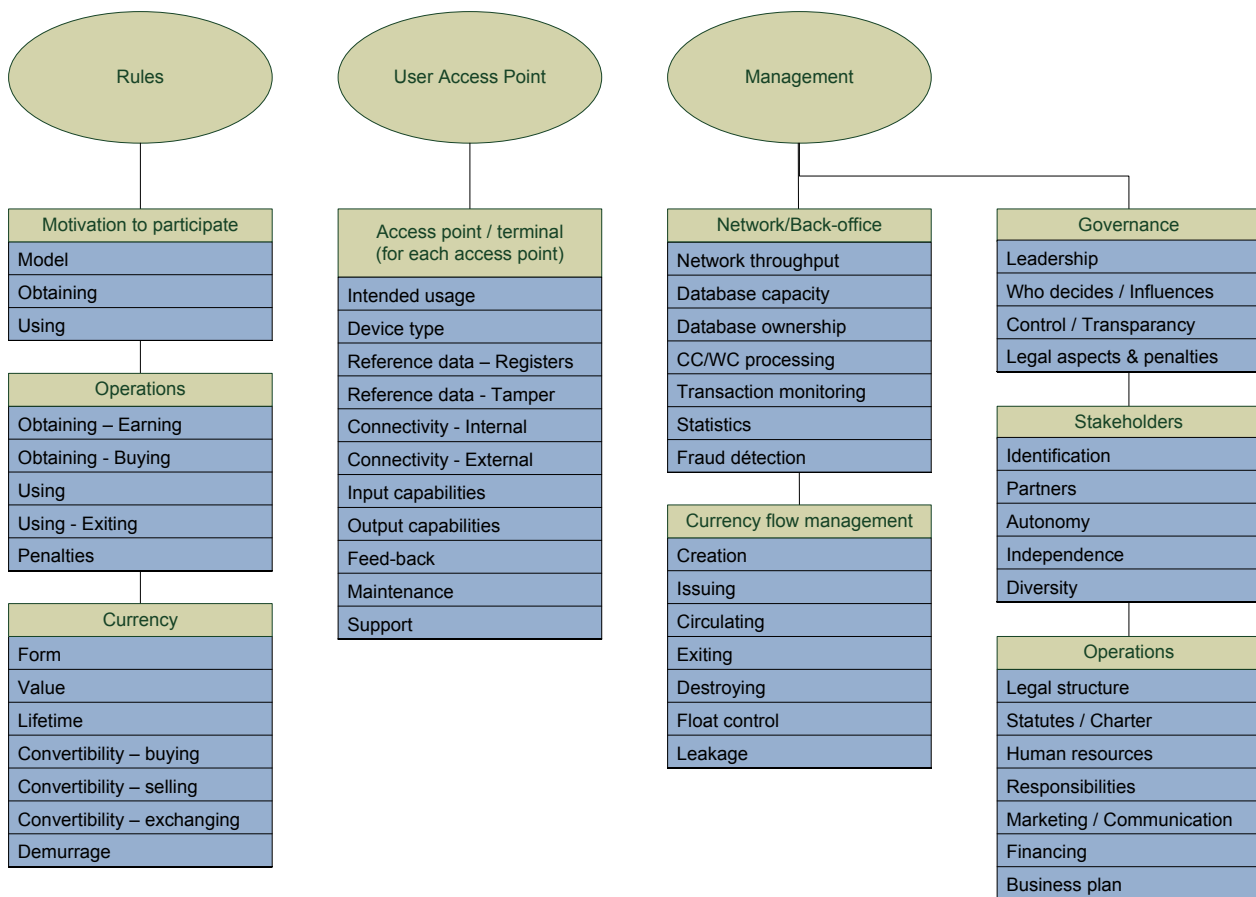


Figure 1: hierarchical classification of parameters for the CC systems

Motivation to participate

According to what is shown in Figure 2, three main parameters are impacting the motivation to participate to CC systems: the model chosen, as well as the rationale to obtain and use the CC units.

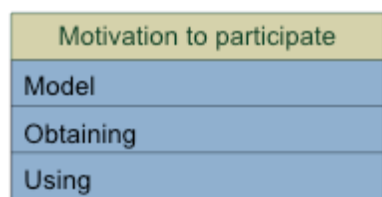


Figure 2

Model

The model describes what kind of rationale is used for the system as a whole to motivate people to participate. A first possibility is to use what could be viewed as a “push” mechanism: CC units are given to those who are participating on a voluntary basis to the CC system. Since we are working with CC as policy instruments, we opted for the terminology of rewarding for this type of model. The term voluntary was rejected because it did not allow differentiating such top-down policy instruments from grassroots CC systems based on reciprocity (e.g. LETS, Time Banks) that are also voluntary systems. E-portemonnee is a very good example of such a rewarding model: CC-units are given to participants to reward sustainable behaviours (e.g. com-

posting, switching to green electricity, etc.). NU-Spaarpas, with its dual policy instrument-loyalty scheme structure is slightly more complex. However, it can be argued that both parts of the NU-Spaarpas system are built on a rewarding model. Indeed, this is rather straightforward for the policy-instrument part of the system (e.g. participants receive points for recycling). Regarding the loyalty part of the system, it can also be considered as a rewarding system, with the difference that shops participating to the scheme are giving (and financing) CC units and not public authorities.

The experiences of E-portemonnee and NU-Spaarpas do not seem to offer much of a choice regarding the model used: they both are built on a rewarding model, as it is also the case for the Torekes project. However, CC systems are in a process of rapid and continuous evolution, and new choices are emerging for the model. Indeed, as explained in the first section, Lietaer and Takada (2010) proposed a CC scheme to restore the ecosystem of Lake Biwa in Shiga Prefecture that would not rest on a voluntary basis. In essence, the idea behind this type of model is that public authorities make it mandatory to handle in a certain number of CC units (in this case, ticket”) at the end of a given period. The public authorities determine how those CC units can be earned, and establish a proper mechanism to allocate the CC units. In the case of Lake Biwa, the proposal was built around the obligation of earning the CC units through activities to restore the ecosystem of the lake Biwa.

This opens up, at least theoretically, a second possibility for the model that can be viewed as a “pull” mechanism: residents are required to provide a certain number of CC units at the end of a given period. Bearing in mind the fact that this taxonomy is primarily built for CC as a policy instrument, we opted for the terminology of regulatory for this kind of model. The regulatory model is indeed close to the mechanism of a tax or a civil service. As a variant, we have seen that it is also possible to work with CC units allocated to citizens according to specific targets (e.g. in a similar way as in the TEQs proposal, for instance). In the framework of the INESPO project, this would come down to setting energy consumption targets for households and allocating a given number of CC units to them. Regulatory models differ radically from rewarding models in at least two ways: the participation is mandatory and they use the willingness to comply with the regulation as a motivating factor. As can be expected, the choice between a rewarding and a regulatory model is thus a crucial one that will orient the system on two very different paths, right from the beginning of the design phase.

Obtaining and Using

Going a step further in the analysis brings us to the rationale that has to be chosen for what we have termed obtaining and using the CC units. Bearing in mind the fact that CC units are not always earned – for instance, in some systems it can be foreseen that CC units are also bought – the denomination obtaining seemed best to encompass all the possible ways of getting CC units. In the same way, systems can foresee that the obtained CC units are spent in bakery shop or redeemed for public transportation tickets or even converted back to Euros, for instance. The term using seemed thus the most adequate to reflect all the possible uses of CC units, from to user viewpoint.

It must be underlined that, at this stage of the design, we are still working with the rationale that will be used to determine how CC units can be obtained and used, in order to motivate participants, and not the actual obtaining and using lists, for instance. This rationale will provide clear guidelines of what is or is not acceptable in order to build those lists at a later stage of the system design. In the case of E-portemonnee, for instance, the rationale for obtaining points could be defined as promoting behaviours that contribute to environmental sustainability. The specific aspects of environmental sustainability that would be tackled (e.g. waste, mobility, energy, water) as well as the actions rewarded on the obtaining list (e.g. using public transportation or switching to green energy) would be defined at a later stage by each participating municipality.

Turning back to the design of the new CC-SM instrument in the project INESPO and supposing it was opted for a rewarding model in the first place; a possible rationale for the obtaining parameter is to strictly stay in line with the energy saving objectives of the project. This sets a clear agenda for defining the obtaining list at a later stage of the system design (operation). Actions or investments can be accepted or rejected for the obtaining list in so far as they

do or do not lead to energy savings (e.g. insulating the home would be on the obtaining list whereas switching to green electricity would not).

A more inclusive rationale might be chosen for using CC units. Indeed, in order to motivate participants, it can be foreseen that CC units be used not only for investments that lead to energy saving, but also to receive tickets to go to the movies, for instance or to pay for green electricity (provided an agreement is set with energy suppliers of course). In this process of enlarging the base for using the CC units, special attention should however be devoted to avoiding a rebound effect.

For systems based on a rewarding model, it is straightforward that the rationale for using CC units (i.e. what is proposed as a reward) is essential to motivate people to get on-board. This can be illustrated with the Torekes project. Indeed, in the co-creation process of the project with stakeholders and non-profit organisations, it was possible to identify the renting of a plot in the community gardens as important for many residents. Proposing this in the using list proved a great motivator for people to get onboard.

However, the importance of the rationale for obtaining CC units should not be underestimated as a motivational factor or as a disincentive. Indeed, the obtaining process can most probably draw boundaries in the public, with some being receptive to what is proposed and others more reluctant. In NU-Spaarpas, for instance, there was an objective of reaching the ‘grey masses’ in the project, which led to an inclusive rationale for obtaining the CC units (e.g. CC units could also be earned when buying other products than the products and services identified as ‘green’, although the scheme had sustainability objectives).

Different elements will impact the rationale for obtaining and using the CC units. Besides the model, other factors could also have an influence, such as the scope of the project (e.g. inclusive project or focused on a specific target group) or the desired perception for the project (e.g. a project that makes sense as consistently promoting environmental friendly behaviours, energy saving behaviours, neighbourhood enhancing behaviours, care for the elderly behaviours, etc.). The needs for objective measurement, for evidence of the desired behaviours as well as technological constraints also have to be taken into account, and will often limit the possibilities.

Clearly, a trade-off will be necessary at this point between the objectives of the project, the technological constraints, and what makes sense to the participants. A balance will also have to be found between developing the attractiveness of the system and staying in line with the objectives of the project (e.g. avoiding a rebound effect).

For systems based on a regulatory model, since none have been deployed yet, it is only possible to conjecture about key elements for obtaining and using CC units in such a configuration. In this respect, the rationale to calculate the number of CC units received as a target for consumption in

a TEQs like system (obtaining) or the number of CC units due by residents in a Biwa like system (using) seems absolutely crucial. Bearing in mind the mandatory participation to such systems, criteria to do the actual computation should be based on objective data and perceived as fair and socially acceptable by the citizen. In this case too, it is very probable that a trade-off would be necessary at some point between taking into account all the parameters that can have an impact on the calculation of the CC units due or received and the practicalities of the system.

Operations

In a very practical sense, the operational aspects of the CC system translate the vision that was created for the system in the former block (motivation) into rules that will apply to participants, as shown in Figure 3. This section is focusing on the parameters for the operational aspects of the CC system, as seen from the user point of view. Other operational aspects of the system (technical, financial, legal, management, etc.) are covered in the third pillar, devoted to the management. In this sense, it could be assimilated to translating the “internal rules” of the project into “external rules” as they should be understood by participants.

Operations
Obtaining – Earning
Obtaining - Buying
Using
Using - Exiting
Penalties

Figure 3

A first and central rule to be understood by participants is how they can obtain their CC units. This corresponds to a key step in the operation block which is based on the rationale defined in the motivation block. But here, the outcome will be to define what people must actually do for obtaining CC units. Typically in the case of a rewarding model, this will lead to a list of behaviours and the number of CC units that can be earned for each behaviour (obtaining-earning). It can also be foreseen that CC units be directly bought with State-issued currency (obtaining-buying).

In the case of E-portemonnee, the obtaining – earning list was adapted for each participating town but would typically comprise sustainable behaviours related to waste (e.g. following a composting course, using reusable nappies, placing a 'no junk mail sign' on the letterbox), to energy (e.g. placing/using a condensation boiler, switching to/using green electricity), and to mobility (e.g. using public transportation). In the list, the equivalence in points for each action is given (e.g. using 100% green electricity is worth 300 points per year).

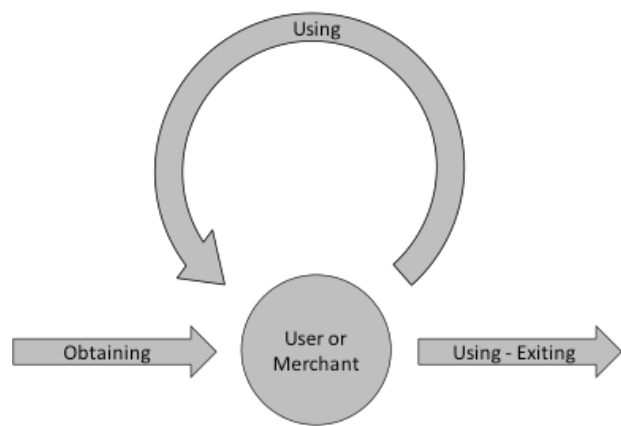


Figure 4

Once the rules have been established regarding how to obtain CC units, the trajectory of those CC units in the system has to be defined (using, and using-exiting). Every time a CC unit is used but does not leave the system (e.g. CC units are used as a means of payment in a shop) the term using has been favoured. When using a CC unit means it is exiting the system (e.g. CC units are returned to the issuing authorities) the term using-exiting has been chosen. Indeed, in such a case, the CC units have finished their trajectory and are exiting in the system as shown in figure 4. Another major way for CC units to exit the system is when convertibility is foreseen for selling the CC units back to State-issued currency (see below in the currency section).

Most importantly, the designers of the system should decide whether the CC units should be encouraged to cycle in the system, or not. There seems to be opposite rationale between encouraging cycling and direct exiting. Indeed, cycling seems more related to a system designed to foster exchanges (e.g. WIR in Switzerland, Chiemgauer in Germany or RES in Belgium), while direct exiting seems more appropriate to CC systems used as behavioural changes policy instruments that do not include the direct participation of shops (e.g. E-portemonnee in Belgium). The number of actors and dependencies between them (e.g. shops buying and selling items to each others) could be a limitative factor for cycling, while the attractiveness of goods and services proposed as a reward, or the easiness of conversion seems to be promoting direct exiting.

Finally penalties can be foreseen for those that do not follow the rules of the system (either by cheating or by negligence), which should be clear to all participants.

Currency

As for the operational aspects of the CC system, choices have to be made regarding the currency itself. Those choices will determine how the CC system is looking like from a user’s point of view. What will they have in their hand? NU points stored on a chip card, Torekes paper notes, or E-portemonnee points stored remotely on an elec-

tronic account in a database but that they can access via their Identity Card?

Currency
Form
Value
Lifetime
Convertibility – buying
Convertibility – selling
Convertibility – exchanging
Demurrage

Figure 5

Form

The form describes the unit of account chosen, as well as the vehicle selected for circulation of the CC units. A determinant choice for this parameter is whether to use paper notes (as in Torekes) or electronic money. Electronic money can either be stored on a smart card, or remotely in a database, with the necessity for identification of the owner. Several possibilities exist for identification, like Identity Card (E-portemonnee), a smart card (NU-Spaarpas), a SIM card (mobile phone), a password, biometric systems, etc. Different aspects will influence the decision taken regarding the form of the CC, amongst which, the traceability of the CC units requested for security or monitoring reasons, or, on the contrary, avoided in order to protect privacy. The practicality of the system will also play a role in the decision, as well as other factors like technical constraints, the acceptability of the system by some stakeholder (e.g. merchants, intermediaries) if any, the level of security requested and the overall transactions costs. Taking the user’s point of view into consideration will lead to paying special attention to other aspects like user-friendliness and acceptability.

Value

The value is a critical choice for the architecture of the system in the sense that it creates links (financial, symbolic, reference, etc.) between the inside and the outside of the CC system.

The value describes the standard(s) in relation to which the CC units are evaluated. Those standards can be multiple, anchored in State-issued currencies or not. The value can be also informal, in the sense that there is no strict relation to a given standard, but rather an informal link (e.g. the number of CC units for the goods on the using list has been calculated with the rule of thumb that each CC unit is roughly equivalent to 0.10 Euro).

In the case of the INESPO project, for instance, the value of the CC unit could be defined as 1 kWh primary energy (or 1 spared kWhp) for instance. In this sense, the value of the currency would be anchored in a physical unit. An alternative choice would be to define the value of the CC unit in

relation to multiple standards, thus not only 1 INESPO = 1 kWhp (or 1 spared kWhp) but also in relation to behaviours like insulating or following energy education courses; without having to necessary link such actions with precise energy savings.

Lifetime – convertibility - demurrage

Other parameters, like how long the CC units are valid (lifetime), whether or not it is convertible in official currency (convertibility for buying CC, convertibility for selling and convertibility to exchanging CC), or if it loses value / give interest with time (demurrage / interest) further determine the CC. They all convey important meanings that derive from the rationale chosen for the CC system. Convertibility, for instance, can open up the boundary of the system. However, if the system is too open (e.g. 1 unit = 1 euro), users will map the motivation to obtain CC units into motivation to earn money. On the other side, if the system is too isolated (CC units cannot be used in the outside world), the CC system can only work once a critical mass is reached.

The other two pillars: User Access Point and Management

This paper is focusing on the taxonomy related to the first pillar of CC systems (the Rules). Regarding the analysis of the two other pillars (User Access Point and Management), complementary instruments and methods have to be mobilized (e.g. ICT infrastructure use or development and stakeholder analysis) that will be developed in further publications. The objective of the following paragraphs is thus to give an overview of the blocks of parameters that are to be found in those pillars, as well as linking them with the questions arising from the building of the INESPO project.

User Access Points

Access point / terminal (for each access point)
Intended usage
Device type
Reference data – Registers
Reference data - Tamper
Connectivity - Internal
Connectivity - External
Input capabilities
Output capabilities
Feed-back
Maintenance
Support

Figure 6

As shown in Figure 6, User Access Point relates to devices where users interact with the CC system. This may include specific devices, such as a SM in the INESPO project, but also covers Web sites, Smartphones, payment terminals, etc. Beyond thinking in terms of what interactions are nec-

essary or desirable, it is also a matter of defining where and how those interactions will take place. In the case of the INESPO project, with a combination of CC and SM one or more devices are required on which users will interact with the system. Each device must be conceived with a clear idea of its intended usage(s), such as the simple consultation of earned points, a feed-back on energy consumption or an interface for exchanging points against goods or official currency in the case convertibility is foreseen. In the INESPO project, at least one device (device type) is always required for measuring the energy consumption: the smart meter that will be installed in each household. Other device types may be used for further interactions between the users and the CC-SM system, like mobile phones, personal computers or dedicated terminals used by merchants as a support for the CC earning and exchanging.

Each device needs to be clearly specified according to its major characteristics that we have organised in five groups: reference data, connectivity, input, output and maintenance.

Reference data relates to information that is critical for the calculation of allocating CC to users. Examples thereof are the measurement registers of the energy consumption or the balances of the earned points in E-portemonnee. Depending on the criticality and the value of this data, a number of tamper protections may be required.

Devices will most generally be interconnected to the system and will therefore need some connectivity, either to communicate in-house, for example with a display in the kitchen for the feed-back of SM to the users, or externally using mobile, power line communication or broadband connections. The external connectivity requires a very special attention as it needs to consider both the technological aspects (wire or wireless, bandwidth, geographic coverage, reliability, investment and usage costs, etc.) and the privacy aspects (integrity, confidentiality, non-repudiation).

Equally important are the input capabilities of the device that determine what information the user may provide to the system and how (e.g. keyboard, buttons), as well as the output capabilities (e.g. display). The latter are of the utmost importance for providing a correct and effective feed-back (information media, format, frequency and motivation factor), one of the pillars for increasing energy awareness in the households.

Finally, maintenance and support aspects should not be overlooked, as technical failures are one of the most powerful disincentives in adopting a new system.

Management

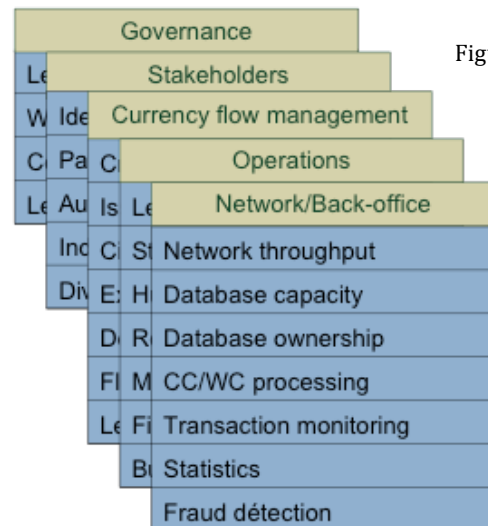


Figure 7

Setting-up adequate rules and developing efficient user access points are fundamental, but the entire system will not run very long unless it is correctly managed. Defining the governance is mainly about defining the organisation of the leadership (organs and the relations between them) and the decision process (who takes the decisions and how, which entities can influence them). But this is not sufficient: a well-defined control mechanism and re-evaluation process with associated transparency rules must be planned straight from the beginning to ensure a permanent adequacy of the system to the main objectives. Other parameters, like the legal framework also have to be considered. Other blocks are equally important in the management pillar (Stakeholders, Currency flow management, Operations and Network/Back-office) on which we will not expand in this publication.

DISCUSSION

In the preceding paragraphs, the idea was to go 'down the bones' of existing CC systems, in order to come up with a taxonomy of constitutive parameters that could also serve as a building tool for the INESPO system. This resulted in a hierarchical classification of parameters, with some playing a major role for the architecture of the system, as well as a logical sequence to design the new system. It must be noted that, although there is a logical sequence in the choice of parameters for the building of a system, some of them may only be defined within an iterative process. Indeed, decisions regarding parameters can influence what will be chosen for parameters within the same pillar or for parameters belonging to the two other pillars of the system. This pleads even further for an iterative process when building a CC system to ensure consistency between the different choices to be made. Furthermore, dynamic analysis of CC systems (stability, critical mass, etc.) is also necessary within this iterative process, but is outside the scope of this paper.

Bones, flesh and soul

In our view, “going down the bones” is not enough to make a CC system thrive. It provides a systematic list of parameters that will define the global architecture of the system. But, beyond this structure, the experience with CC systems shows that “flesh” is also needed, that comes from knowing more about the expectations of stakeholders and people that will be carriers of the system. In order to take this aspect into account in the INESPO project, for instance, a better understanding of motivation factors and social acceptability of the system is foreseen through the organisation of focus groups.

The Torekes project that was described in the first section of this paper offers some complementary insights on how to give flesh to CC systems used as policy instruments. Indeed, by linking the project to local non-profit organisations, Torekes could benefit from the field experience of those organisations. This contributed positively to the reflection on what could motivate residents to participate (i.e. the community gardens, for instance). In turn, developing a new CC system also gave new stamina to the initiatives of the participating non-profit organisations. Experiences of grassroots CC systems might also provide many valuable insights on how to give flesh to CC systems (see, for instance, on this subject, the work of Rogers -www.valueforpeople.co.uk).

But bones and flesh are still not enough. We would like to argue, bringing the bones/flesh metaphor a step further that, for the type of projects considered in this paper, the way to frame behavioural change could well be viewed as the “soul” of such systems. In the following paragraphs we will illustrate this concept by showing how two different theoretical frameworks for behavioural changes might impact the design of a CC system, taking the example of the INESPO project.

Individual choices or social practices? The differences it makes in the design of the CC-SM instrument

While the way to frame behavioural change is not always explicit in the process of building a CC system, it should nevertheless be questioned, as it can act as an underground force that shapes the design of the system in one or the other direction. Indeed, many theories have been developed to explain behaviours. Most of them have been devoted to analysing the determinants of behaviours at the individual level (e.g. Ajzen, 1991; Triandis, 1977, 1980; Stern, 2000). Beyond the particularities of each theory, common denominators are to be found between them, like the central role played by individual choice and the linear causality chain between, in a simplified version, attitude, intention and behaviour. Of course, those theories have reached greater levels of complexity (e.g. by introducing the role of habits, for instance), and empirical studies have shed light on paradoxes and inconsistencies between attitude and behaviours.

It nevertheless remains that, in the light of such frameworks, the role of public authorities could be understood as finding and acting on determinants of individual choice, removing obstacles and favouring motivators so that people change their behaviours in a more environmental-friendly manner.

Bearing this in mind, how could this conception of behavioural change affect the design of the new CC-SM instrument in the INESPO project?

In a framework based on individual choices, the objective of the project is to lower energy consumption for as many households as possible. Supposing the choice is made for a rewarding model, the CC-SM instrument is seen as mobilising two major strategies of behavioural change: rewarding through the CC part of the system and providing feedback through the SM part of the system. It might also be argued that the creation of the system itself could change the internal and external context in which the behavioural changes have to take place. Indeed, the setting up of such a system could be seen as a powerful way for public authorities to convey a message about energy consumption in the households.

In such a framework, the main focus is, most logically, on providing a highly motivating using list for the CC part of the system, a user-friendly feedback through the SM displays and an effective marketing campaign for the project itself.

This conception of behavioural change has also an impact on the choices made for some key parameters of the CC system. For example, bearing in mind the objective of the CC-SM instrument to lower the energy consumption of each household, it follows that the obtaining-earning parameter is anchored in the difference of consumption, which we represent by $\Delta C = C_{i,y+1} - C_{i,y}$ (where $C_{i,y}$ stands for the energy consumption of household i during year y). This difference of consumption is measured by the SM technology.

In turn, since the obtaining-earning parameter is anchored in the difference in consumption of each household, it seems quite logical to link the value of the currency with the kWh (primary) energy saved, for instance.

This short sequence shows how the framework chosen for behavioural changes has a cascading effect on the objectives, focus and design of the system. In the next section we will see how by challenging the idea that energy saving is a matter of individual choices only, social practices theories can influence the design in a very different way.

The emerging framework of social practice theories

Theories of social practice can offer a rather different view on energy consumption in the households. Taking the definition proposed by Reckwitz (2002) a practice is to be understood as a routinised way of ‘doing something’ which different individuals reproduce at different times and places. We can thus talk about the practice of cooking, of

doing the laundry or, like Shove and Walker (2010), of the practice of showering for instance. Those practices consist of intertwined elements that belong, according to Shove and Pantzar (2005) to three main categories: images (meanings, symbols), skills (forms of competence, procedures) and stuff (materials, technology). Taking the example of cooking, for instance, this practice is thus related to images of good health, or sharing with friends, for instance, but also to cooking skills and stoves. Social practices theories are concerned with those routines of everyday life that are commonly shared, and how people 'make sense' of them.

Most importantly for our discussion, a major consequence of using a social practices framework is that the focus is shifted from energy consumption (which is mostly invisible to people) to the many meaningful activities that lead to energy consumption in a household.

Once again, the question has to be asked of how this very different view on behaviours could affect the design of the CC-SM instrument. Since practices are anchored in the reproduction of routines by different agents and at different times, social reproduction is thus what keeps practices alive. However, as underlined by Warde (2005, p. 141), "(Practices) are dynamic by virtue of their own internal logic of operation, as people in myriad situations adapt, improvise and experiment".

It follows that the role of public authorities could be reframed, compared to how it is conceived in a more individualistic conception of behaviours, in terms of promoting more sustainable paths for the evolution of practices. This is all the more relevant since the importance of public authorities in the evolution of practices linked to hygiene, for instance, has already been underlined in Shove and Walker (2010).

The objectives of the INESPO project are then shifted accordingly from lowering energy consumption in households to making energy consuming practices evolve in a more sustainable direction. This increases the focus on developing a better understanding of those energy consuming practices and how people make sense of them. Building on those insights, the obtaining-earning list would then propose alternative and less energy consuming practices, instead of being based on the difference in the aggregated consumption of the households.

In turn, it would not be logical anymore to link the value of the currency with the abstract notion of kWh energy saved, but rather to link it to practices on which people can have a self-reflexive view. If empirical studies show, for instance, that washing laundry at a high temperature and with a high frequency has a significant impact on household energy consumption, the target might then be to promote more sustainable practices in this field (e.g. washing at a lower temperature when possible or airing clothes to wash them

less frequently), and to reward them with CC units accordingly.

Research is still necessary for using a social practices view on domestic energy consumption and there are many technical challenges in developing tools that provide a disaggregated measurement of energy consumption². Besides, whatever the underlying theoretical framework, related societal risks, such as privacy issues or potential mission drifts, have to be seriously investigated.

Bearing this in mind, the objective of the preceding paragraphs is essentially to show how two different frameworks for behavioural change could lead to a different understanding of the objectives of a project, as well as to different choices for some of their constitutive parameters.

CONCLUSION

Changes can come from many places.

In the preceding paragraphs, we have shed light on CC systems that are precisely seeking to promote changes towards sustainability. To gain a better understanding of those CC systems, this paper has presented a taxonomy of their constitutive parameters that can, in turn, be used for building new similar systems. The taxonomy is based on three pillars: the rules, the user access points and the management. The rules, which have been the main focus of this paper, are in close connection to what people will see and understand from the CC system. There is a logical sequence to be followed when making choices for the parameters that constitute the rules. Firstly, the designers of the project have to decide about the manner to motivate people to get on-board (motivation to participate), then design the functioning of the system accordingly (operations) and then choose the parameters for the currency itself (currency). All those choices are interrelated, and create mutual dependencies.

Besides the taxonomy which can be used as a designing tool, we have argued that other dimensions have also to be taken into account when building such CC systems, and we have drawn more particularly the attention on the frameworks used to understand and explain behavioural change itself. Indeed, as was illustrated with some elements of the design of the CC-SM instrument, changing from a more individualistic framework to social practices theories could lead to very different choices for the some parameters of the CC system.

But the mere fact that public authorities are starting to experiment with some pilot projects, as presented in the first part of this paper, brings in itself seeds of change. It is too soon to conjecture what the future will be for such CC projects. Will public authorities carry on with experimenting new pilot projects? Will an innovative instrument such as the CC-SM cross the political agenda in case of significant SM deployment? Will existing pilot projects evolve into

² See, for instance, Klopfert and Jossen (2011) on the Energy Consumption Advisor (ECA) project.

large scale policy instruments? The first results that were publicly released on the two projects that are currently running (E-portemonnee and Torekes) seem encouraging, but further research is needed to investigate their strengths and weaknesses in a more robust manner. Besides, other important issues such as their legal framework, for instance, will have to be dealt with, if those systems are to be developed into larger scale projects. But whatever the future of those projects might be, if CC systems are to become convincing instruments for sustainability policies, appropriate attention should be given to their bones, flesh and soul. This might, in turn, bring further changes to CC systems themselves.

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International Journal of Community Currency Research

Volume 16 (2012) Section D 169-175

TROPHIC CURRENCIES: ECOSYSTEM MODELING AND RESILIENT ECONOMIES

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ABSTRACT

Wealth is limited. We propose that value is infinite. Any currency isolates certain forms of value to transform into wealth, but those other forms of value remain even as they are undervalued. An economic system with a single currency will only recognize a very limited set of activities as valuable. As a consequence, many of the activities that constitute a functional community, and in turn a functional economy, lie outside of the value analysis of our existing economies. In this paper we present a theoretical currency model analogous to trophic food chains. As plants, grazers, and predators all have different perspective on value and operate accordingly, so do similar distinctions exist in society. We suggest that appropriately differentiated currencies from supranational currencies to regional, sectoral and down to timebanking and nonreciprocal exchanges can help better activate the value in the world, empowering communities and economies.

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1 INTRODUCTION

Every form of wealth is by definition limited. Wealth is that which is identified as valuable to any individual whereas value is that which has the potential to be valuable to anything. We cannot allow a lack of certain forms of wealth to equal an inability to resolve specific individual and social needs. The predominant currency structure in most economies today is a functional monoculture (Lietaer et al 2010). National and supranational currencies like the dollar and euro are used in an attempt to denote all value. These currencies, issued by fiat from banks and other centralized institutions, are expected to resolve all transactional needs. Fiat currencies are by their nature scarce, as they are used to calibrate use and importance of limited commodities.

There is a lot of wealth in the world. There is much in the way of dollars and other assets that can be used as leverage or bets on the future. Many of our communities, however, remain entrenched in apparent poverty. With all the wealth that exists in the world, how is it that so many of us are poor?

In this paper we present a theoretical answer to this question derived in part from ecosystem ecology. We posit that value is infinite. Value appears as unrealized potential beyond what any particular perspective recognizes as such. In philosophical terms, this can be understood analogously to Deleuze's concept of the virtual (Deleuze 1968; Deleuze and Parnet 2007), the undifferentiated infinity out of which actualities emerge. Stepping away from the conceptually laden framing of top-down relations we apply a center-edge relationship, which we believe captures aspects of hierarchic relations while remaining fluid. Centers of wealth define and actualize a limited set of value as valuable, namely that which they regard as the causal substance that reaffirms their position. Different centers have divergent views of what is valuable, but value transcends those individual perspectives. Overall, value extends beyond the substances or attributes any given center declares to be valuable.

In socio-economic terms, no single type of currency is capable of denoting and rendering as valuable the infinite value that exists in the world. The activities and objects banks and bankers find valuable are not identical to the value identified by programmers, teachers, the unemployed, or people who work as bankers once they are outside that role. Although banks and other issuers of currency may denote certain activities as valuable and employ dollars accordingly, the recipients of that currency will not simply share the same perspective. These unique perspectives are not easily translated across groups, but difficulties of translation are not the same as priorities of significance: just because we do not value our families and friends in dollars does not mean they are less important than the homes for which we pay rents or mortgages. The powerful currencies in use today are able to functionally overwrite these relations by focusing us on only one possible per-

spective; work to pay the rent can become seen as more important than time with family and friends.

Consequently, we require appropriately differentiated currencies capable of denoting different types of value: individual; networked; geographical. We suggest a model of currencies analogous to trophic pyramids of ecology (Lindeman 1942) whereby the layers of the pyramid represent the different functional perspectives of value and different currency types operate complementarily to facilitate the expression and recognition of this value which otherwise is elided by the dominant forms. Conventional currencies work in the perspective of the global market, but fail to recognize the value of our local communities.

Our economies operate with highly optimized national and supranational currencies, the apex predators of currency systems. However, apex species exist on the basis of the primary production system on the bottom of the pyramid and each following layer that refines sunlight into protein (Allen et al 1999). Consequently, ecosystems are not defined solely by the actions of apex species - wolves, humans, and so forth - and our understanding of our economies should also recognize the other layers of value. To this end complementary currencies can define and render functional the appropriately differentiated ranges of activity of different layers. We should think of complementary currencies as actually complementary and not competitive. They identify and make more active the value beyond that identified by dollars and euros. In a competitive scenario, the predominant currency will almost always win. It is at the apex because it already has. Only when we view complementary currencies as operating on levels different from the dollar driven economy can we demonstrate their different, complementary roles in facilitating active and productive communities.

In this regard, we recognize timebanking, the mutual exchange of services rendered through time, as providing an appropriately differentiated economic and social role that could be understood as denoting the primary production system of our economic ecology. The objective of the Time For the World project (TimeFTW.org) is to develop ways to leverage timebanking towards broader social and economic renewal and create and empower contexts that facilitate the emergence of more refined but community responsive economic systems. This paper presents part of the theoretic framework behind this project.

We believe that this trophic value model can be articulated for fields beyond currencies and economics: from business and entrepreneurial enterprise seeking unique value propositions, to social processes and change under frameworks of emergence, and back to ecology itself. The trophic model derives from ecology, but we view it through a general systems lens. By examining the model in complementary scenarios we believe we can gain better insight on a diverse set of rules and limits that allow for broader mapping of applications.

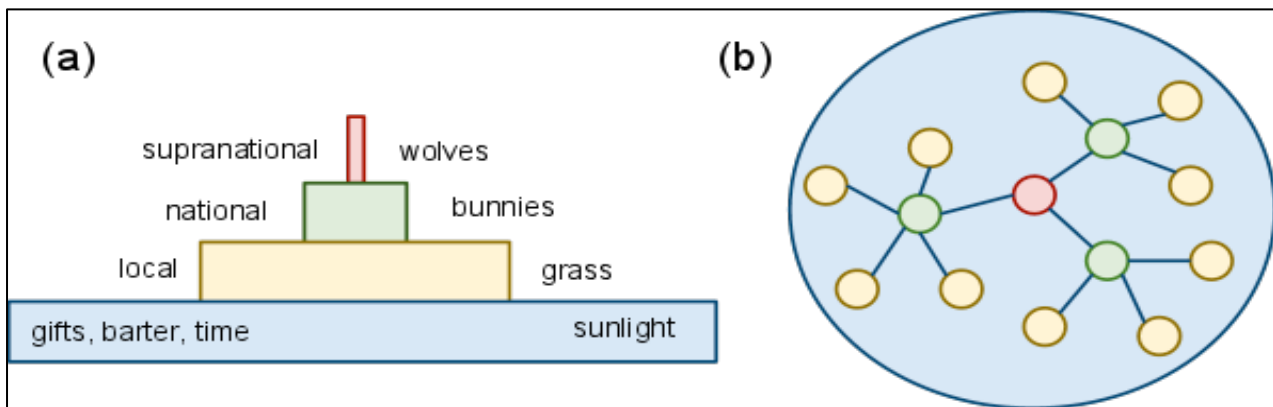


Figure 1: Representation of trophic relations in forms of a hierarchic pyramid (a) and heterarchic network (b). The biological example in (a) refers to the amount of energy flowing through an ecosystem; the currency example draws an analogy to our notion of value and wealth in economics. Value as described exists throughout the system but wealth is conventionally only recognized in its condensed, transformed, and more powerful forms on the top of the pyramid. Wealth is the allocation of certain forms of value as defined on one trophic level, which in turn becomes a valuable resource for the level that consumes it.

2. ACCOUNTING FOR SCARCITY

We orient our economies around scarce resources and act as though scarcity connotes value. In physiology this is like saying that food is more valuable than air - air is everywhere, but food only lives or grows in certain places. Organismal systems allocate stores of resources based on abundance or reliability. Humans typically store about two weeks of food in our bodies. We store about five days worth of water. We store about five minutes of oxygen.

We store little air not because storage is difficult but because we seldom need to rely on our stores. We store lots of food because in human prehistory food could be difficult to acquire. When what you eat runs away from you instead of sitting prepared on shelves, your dinner is never certain.

Air is no less valuable than food, and in conditions where air is unavailable getting more air becomes the most important thing you can do. The existential question of ten minutes without air or ten minutes without food leans heavily towards the former. However, these instances are rare and as a result we do not have to allocate many resources towards accounting for air. We do not all have tanks of breathable air sitting nearby, but nearly everyone reading this has a refrigerator or pantry. We all have some bank of food upon which we rely.

Similarly, when we look at the sources of energy for ecosystems, sunlight is not a scarce resource for most of the world most of the time. Other energy sources are by contrast much more scarce. Nearly all other energy resources are derived from the sun. Plants transform sunlight into biomass that we burn in ovens and our bodies. Fossil fuels stem from ancient sunlight concentrated and refined through biomass, time and pressure. Globally, these are all more scarce but more energy dense than sunlight. Hence, we already have markets for them.

Markets generate and transmit information about resources, providing contexts that inform other actors. With this information, actors can assess sets of options and decide what they want to pursue. In an idealized market scenario actors engage in degrees of competition, collaboration, and innovation as they settle into niches through which they render unique value. This process of innovation and differentiation can be seen as analogous to species differentiation. Thus, just as we have different types of predators, different species of wolves, different packs, and different individuals, so we also have money lenders, banks, credit unions, and so forth.

In this manner we can draw an analogy and model between economies and ecologies as illustrated in Figure 1. Economies do not begin with global financial markets. Those markets are derived from and ultimately still depend on interactions within and between communities. Following this thread, though, we face certain problems in our current mode of economics. Our primary currencies, dollars, euros, yen, are scarce, issued as fiat currency by banks. These currencies are sensible when they are used to determine allocation of scarce resources, like the food the wolves eat. However, just as the wolves do not pay attention to or account for the air, grass, and sunlight upon which they depend, so too are these currencies incapable of providing appropriate valuation of resources that are relatively more abundant. From the perspective of our economic systems, CEOs are valuable because they are scarce. The majority of people become worthless because cheap labor is abundant. However, without lots of different people trying to do lots of different activities that may require further coordination we would have no need for CEOs.

3. ACTIVATING VALUE

Resources in an ecosystem derive from several sources. They derive from the detritus of dead and decaying organisms. They derive from geological processes that slowly

turn ocean beds into mountains, allowing a slow release of scarce compounds like phosphorus required by plants. Synthesizing these compounds into other molecules requires energy. The vast majority of the energy available to life derives from sunlight. Without the sun, there would be very little life on earth. Sunlight, the most abundant and predictable energy source, is fundamental to the configuration of life on this planet.

However, when we look at an ecosystem we typically prioritize the final products of trophic processes: the animals that live within it (Allen et al 1999). Thus, we recognize, for example, a wolf as a symbol of a rich ecosystem. The wolf recognizes as valuable and accounts for the protein of the rabbit. The wolf leaves to the rabbit the task of accounting for its resource. That wealth, however, was processed from the carbohydrates of the grass which has processed the energy of the photon. The wolf values a highly refined, concentrated, and reduced form of solar energy, not the solar energy itself.

Ecosystem ecology considers the flow of material and energy through a system (Allen and Hoekstra 1992). It considers how that energy is captured, transformed, stored, and dispersed. That energetic flow is described through models like food webs and food chains, called trophic models. A plant is able to convert the energy of light at around 36% efficiency through photosynthesis. The rest is radiated off as heat, a necessary byproduct of the process of creating complex molecules out of raw matter.

Animals eat plants for the carbon and the energy embedded in the chemical bonds. Of that energy, increasingly marginal amounts get captured and incorporated by the consumer. Terrestrial trophic chains typically have four to five levels, from primary producers - plants - to apex predators - wolves, lions, hawks, and so forth. Approximately 90% of the energy is lost in the transition between levels through processes of transformation, be it in the formation of different compounds or in the behavioral requirements of the consumer. Thus, in a four level system, for every 1000 calories of plant material, the wolf only gets one calo-

rie. The energy of the different layers are in different forms and those forms are able to do different things - fats or lipids make for much more compact storage than carbohydrates, for example - but the energy loss along the way means that apex predators are typically rare. There simply is not enough energy available for it to be refined and concentrated into massive populations of lions.

The predator searches for lipids and proteins because they offer a more powerful form of energy for those species. Lipids and proteins are therefore valuable to the predator. The processes that create and refine the energy to become those compounds are important, but the lion and wolf do not focus further down the chain. They focus on what they eat. The predator's survival is partially contingent on plants' ability to engage in their production and exchange, but the predator does not need to tend to those processes. Hundreds of million years of evolution has largely solved that problem, and evolutionary processes of local and global death and extinction have for the most part stabilized ecologies. There are and will always be episodes of death and extinction - these are critical components to a functional system - but in most cases the large battles have been resolved.

Human economic systems have not had that time to evolve and resolve. Recent rates of growth and innovation have been spurred by the unprecedented availability of powerful yet limited energy sources, but have not provided the time for over-extensive behavior to resolve. New predatory players have emerged rapidly over the past several hundred years, and each has competed for position. Perhaps only now, when global economic systems appear to be shuddering, is this resolution underway.

4. VALUE ELIDED AS NOISE

National and supranational currencies have been in competition for apex status. Territorial and trade network expansion through the past century has applied pressure towards currencies able to address movement over broad stretches of time and space. As a result, those national cur-

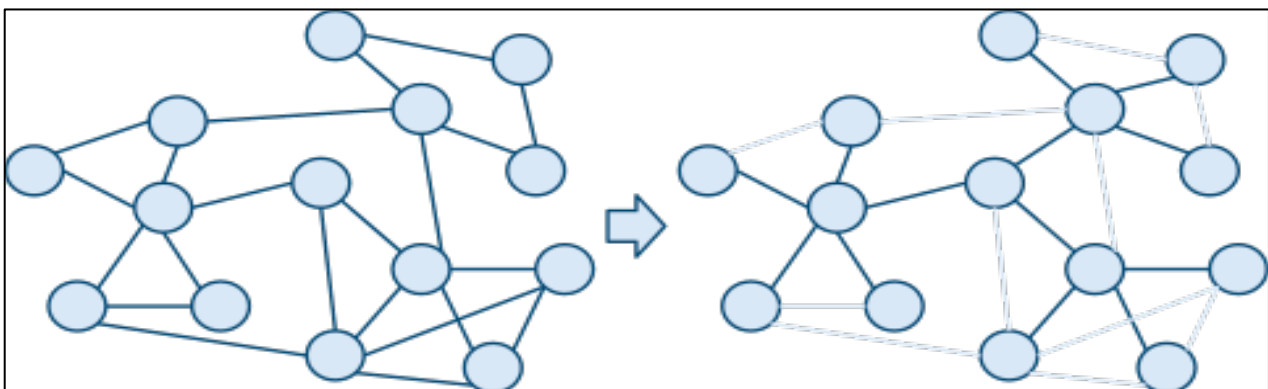


Figure 2: Network elision by emergent structuring. In order to normalize flow of information, energy and material, structures recode relationships between components. Those relationships persist, but become pathological towards goals of structure, like the word of mouth that slips beyond official information channels.

rencies now actively compete for significance. Replacement by the Euro of most national European currencies illustrates this process. Just as most European currencies have become subsumed into the Euro as those countries have pursued broader market access, so too have more geographically localized currencies been subsumed by national currencies as central authorities extended their reach. Proposals for global currencies or non-topographic currencies like the Terra TRC, Ven, and bitcoin attest to a recognized need by some for a translocational currency structure able to normalize accounting and transactions in disparate locales.

The replacement or outcompetition of localized currencies by more global ones has not been without cost. Emergent structures redefine the context from which they are derived to accentuate or prioritize the particular relationships and flows that constitute them. (Figure 2) Once established, structures redefine their foundation. They rewrite the network or system to support and affirm their existence. In the process of this operation, prior relationships are devalued, elided, and treated as system noise, much as word of mouth or rumor runs askew of official information channels. These alternate flows may be ignored or suppressed as they are identified as valueless or dangerous to the goals of the system. The value of activities are reduced to value as assessed through issuers of currency. Activities are reduced to monetized costs and benefits. In economic terms, the world becomes defined by dollars.

To illustrate this with an fictional example: A prehistorical community could have operated with gift and barter exchanges to fulfill needs if exchanges were not too complicated. As more people or more types of objects are involved in the exchanges, calibrating value into the future can become more difficult. A local currency could emerge to solve this difficulty by affixing value to a particular object like an amount of wheat. Prices become assigned to declare how much wheat any other object or service is worth. The local economy problem has been solved.

If people with a wheat-based economy wish to trade with others with a shell-based economy, new difficulties emerge. How does a shell compare to an amount of wheat? The solution to this problem may involve the addition of or replacement by a currency that can address trade between communities. Either wheat or shells may become this regional currency, or a third alternative like beads could take over. If it was one of the initial two currencies, one of the communities may have capital advantage over the other. One area might have better farming conditions; the other might have more shellfish. Regardless of what is chosen, we may assume that the initial currency would remain stable. It did work in its local context, after all.

We might think that the new currency will simply add capability. Local trade still matters. However, this new currency is defined in terms between the two communities and will not just replace the older versions. Relations that are deemed nonessential to the recognized goal of the emergent structure are pruned. These tangential or lateral

relationships do not vanish, but are disregarded. Currency or information no longer moves as well along that connection. Functionality has been lost in favor of optimization.

5. REFINING THE INFINITE

Through this discussion we can see an elision of value by wealth. We reduce the types of substances or activities we consider valuable through the lens of aggregated wealth. Wealth is the concentrated center in our center-edge relationship. Wealth defines what is immediately valuable to itself and prunes away that which is outside its perspective. Wealth is limited and scarce. Some have it, most do not. Value is not wealth. Value is infinite. Value is everything that could become different forms of wealth, but it always extends beyond the reach of any particular wealth. The wolf seeks protein and values sources that offer it. Our dominant economies value what can be expressed in dollars. But this never captures the full potential of our communities. Everything has value.

Value refines upward in the trophic chain. Just as sunlight is processed and transformed, so value is transformed into particular forms of wealth. Value refined into wealth may be identified as valuable to something else, as the rabbit is valuable to the wolf. This is what entrepreneurs attempt. They seek alternate forms or dimensions of value, activities that are outside of the market's gaze, and render or reduce it to a concentrated form that is more recognizable. Many of these efforts will be dismissed. Most entrepreneurial efforts will not gain traction. This is part of the energy loss function involved in moving between levels of activity. A few appropriately configured or positioned efforts will succeed, like the microcomputer or the automobile, and many of our activities will become recoded in the process - how we work and where we live is largely determined in the context of computers and cars.

Refining value increases its tractability and power, but at significant loss. Ninety percent of the energy that is in grass does not make it into the rabbit for the wolf. Without that loss, however, there would not be a rabbit. The loss is part of the rabbit's functional physiology. When we refine materials, we dismiss most in favor of the parts we prefer. This would be a problem if sunlight was scarce. Although it is on certain dimensions - it goes away every night - it has a persistence that renders it functionally infinite. Although all of our personal time is finite, the aggregate number of us with time now and in the future is infinite. The scope of possibility is infinite. We are only bounded by our limited perception of the possible and means of manifestation. Faced with limits in what we recognize, as with the limits of dollars and fossil fuels, we innovate on different dimensions - solar, wind, time. By recognizing the infinity of value and the potential that exists in yet untapped resources, assets, or dimensions, limits are merely system elements against which we calibrate and reorient.

Wealth, by contrast, degrades as it moves down. The thermodynamics of living systems declares that as we use concentrated resources they turn into forms less utilizable to

us, or less valuable. Use degrades. The food we eat is broken down and turned into manure. It is still useful, but differently so. Its use shifts to a long term consideration, such as the maintenance of soil fertility with which we will grow next year's crop. We do not eat the degraded product. We eat what was grown from it.

Wealth flowing down the chain becomes of less quality and more scarce. If one person distributes \$100 among ten people, each has \$10 assuming no other loss and equal distribution. Each individual can do less with their \$10 than the former could do with \$100. Perhaps we could find a way to pool that money in order to leverage it for shared benefit, but even that would be at a loss due to costs of communication and coordination.

The capabilities of ten people with \$10 will not be the same as one person with \$100 if we render that capability only in dollar terms. If we render it more broadly than that, the group with a distributed \$10 can be more capable. People's assets extend beyond what is denoted in dollars. If they can use their accumulated \$100 to build tools to communicate and coordinate the richer value and assets that extends beyond themselves and the reduced but powerful currency they were given, they can potentially do more than one person with \$100. If we can find ways of expressing the value that extends beyond the view of wealth we can indeed generate more wealth, but that wealth like all new wealth will be generated through a broader recognition of value. The challenge lies in creating useful and flexible tools for communication and coordination and rendering the value that lies outside the scope of wealth.

We have poor neighborhoods not because there is not enough money or it is improperly distributed but because we are trying to use the wrong tool for the job and limit ourselves to one perspective, denominated in one currency. Dollars do not represent local, neighborhood, or individual value. They do not represent the value of safe communities, civic participation, or thriving arts communities. Saying Wall Street should be able to value those types of activities is like saying wolves should eat sunlight. Similarly, saying that we should value the benefits of functional neighborhoods with dollars and euros is like saying plants should capture and consume protein. They can't, they won't, and we shouldn't expect them to do so. That does not mean functional neighborhoods do not matter. Rather it means that today's bank currencies are incapable of comprehending the infinite value of our neighborhoods.

6. IMPLICATIONS

We suggest that complementary currencies be treated as complementary and either established as non-competitive with dominant currency structures or seek to be competitive in different modes by redefining sets of relations. Rabbits do not compete with wolves for resources. Rabbits compete with other herbivores when the need for competition arises. Local currencies that attempt simply to copy national transactional dynamics will in most cases have only marginal penetration. The national currency is better

optimized for the economic context within which it operates. It helped define that context. Changing only the scale of exchange is insufficient.

Better implementations of complementary currencies are likely to be those which reconsider sets of relations that constitute an economy and empower the relations and value that is unrecognized or elided by dominant structures. Efforts to facilitate neighbor exchange of goods and services in value-flexible ways such as lending circles and timebanking are examples of exchange structures that attempt such a re-transcription.

Our trophic model for currency systems, though early in development, offers a potentially powerful framework for considering structural relations and interceding in entrenched system pathologies. Additionally, it helps illustrate the extended value proposition that all complementary currencies offer. In analogy to the energy in trophic food chains, the overall value is greater on lower levels or towards the periphery and only gets refined and scarce on higher levels or towards the center. Complementary currencies offer a way to express and activate value in different economic or social sectors in contexts ranging from local to global. However, we cannot propose how complementary currencies ought to be structured or define value. In particular, we do not wish to recommend iterative movement down the chain of currencies from national to local. Rather we suggest that sustainable economies should begin by reconstituting gift, barter, and time exchanges where valuation is more flexible and expansive. Further currency experiments should seek to address the unresolved or newly discovered challenges of more coordination.

Resilient economies begin in the household, neighborhood, and other forms of local community. They level up to broader reaches of exchange as needs arise. All economies depend on globally abundant resources and calibrate towards global scarcity. We should not expect currencies focused on global scarcity to be able to address global abundance. Rather, we need currency structures that can be calibrated for disaggregated local scarcity.

Functional ecosystems are those with a context that facilitates capturing globally abundant sunlight as best plants can, not as we think they should. By leveraging locally or individually scarce but globally or collectively abundant resources like time, through the valuative reconstitution of interpersonal relations, and by creating an empowering context that encourages all of us to do our best, we can create a context for functioning resilient communities and resilient economies. By appropriately differentiating currency systems as complementary we can better activate the unique and abundant value of life.

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