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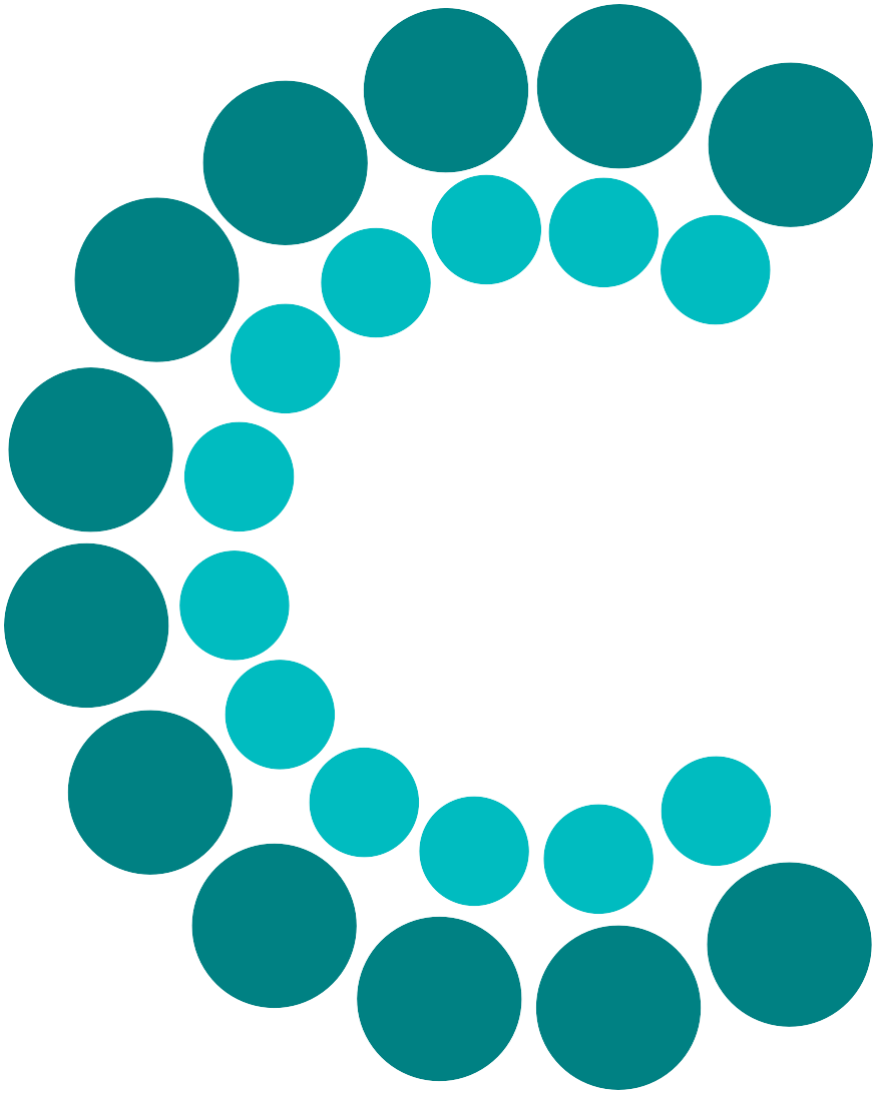

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HISTORICAL TRANSITION OF COMMUNITY CURRENCIES IN JAPAN

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ABSTRACT

This study investigates the historical transition of diversifying community currencies (CCs) in Japan. We searched for papers, reports, newspaper articles, and websites about Japanese CCs to acquire all available information on CCs issued in Japan. We classify the types of CCs by purpose and examine their development process by organizing the purposes, issuing forms, and starting year for each CC.

Our survey results show that 792 CCs were issued in Japan. The largest number of CCs was 130 issued in 2002. New CCs have gradually decreased since 2002, and approximately 15-20 CCs were issued annually since 2008. The purpose of issuing CCs also changed; CCs aiming to "create connections among people" were the most frequent, though this changed in 2002 to "revitalizing the regional economy." The number of issued CCs to "create connections among people" was in third place in 2011, while "promoting resource recycling" was second.

To classify CCs in Japan, we conduct a cluster analysis using sample scores obtained by Hayashi's quantification method type III as a dependent variable for the issuing purpose. Many CCs issued in the first half of 2000 belonged to Cluster 4, "formation of people's connection and regional economic revitalization;" however, those issued in recent years belonged to Cluster 3, "forestry and regional economic revitalization." Although the number of new CCs decreased drastically in the past 15 years, CCs are clearly evolving as a tool for solving social problems with changing issuing purposes.

KEYWORDS

Classification, cluster analysis, issuing purposes, issuing forms, Japanese CCs.

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1. INTRODUCTION

The first community currency (CC) in Japan was the Volunteer Labor Bank established by Teruko Mizushima in 1973 to support working women. Subsequently, in the 1980s and 1990s, the time-banking system spread throughout Japan[i] following the launch of time-based CCs (e.g., time stocks and "Fureai Kippu"), which were inspired by the Volunteer Labor Bank. A CC boom occurred in Japan from the late 1990s through the early 2000s, and over the years, hundreds of CCs that are tradable both in the reciprocal realm and the market realm have appeared (Miyazaki & Kurita, 2018). According to Lietaer (2004), more than 600 CCs circulated in Japan at the end of 2003, making Japan the world's most advanced and historic country in terms of CCs. However, few papers in English describe the current situation and changes with respect to Japanese CCs since the boom, except for a few case studies (see Kichiji & Nishibe, 2008; Kurita et al., 2012; Hayashi, 2012; Nakazato & Hiramoto, 2012; Miyazaki & Kurita, 2013; Kurita et al., 2015; September 2019).

Lietaer (2004) described why information about Japanese CCs was not transmitted worldwide as follows:

Nevertheless, remarkably little is available in any other language than Japanese on this topic [the largest diversity of complementary currencies experiments in Japan]. Even more surprisingly, within Japan itself the full range of currency experiments is rarely perceived because different Japanese "complementary currency schools" tended to ignore each other.

Lietaer classified Japanese complementary currency systems into four schools: 1) the pioneer issued by the Volunteer Labour Bank, 2) the Fureai Kippu system, 3) the Eco-money system, and 4) Grass-root initiatives. At present, the eco-money system no longer exists in Japan, and CCs of schools 1 and 2 are rarely issued. In the last few years, the CC boom in Japan has settled down, and there are moves to verify past efforts and explore new ways to utilize CCs. Recently, we have seen new types of development in the establishment of other types of currencies, such as CCs, that give children experience in business commerce and social participation (children's currency) and CCs aimed at conserving the natural environment and promoting local consumption of locally produced goods (see Miyazaki & Kurita, 2013; Kurita et al., 2015). We think that these CCs belong to the Grass-roots school, but it is not clear what kind of activities the Grass-roots school engages in and how it expanded in Japan. Seyfang and Longhurst (2013) attempted to classify the international diffusion of CC types focusing on Grass-roots innovations, but this study makes no positive reference to the Japanese initiatives. We therefore attempt to grasp the transition of such initiatives from the late 1990s to the present quantitatively. Through our analysis, it is possible to overview the scale and extent of the initiatives, which had been difficult to grasp in previous case studies.

To help understand the transition of the Grass-roots school in Japan, we surveyed 11 papers and reports in Japanese that investigated trends in Japanese CCs (Miyazaki et al., 2016). These studies attempted to give an overall picture of CCs in Japan by quantitatively evaluating the effectiveness of each. From the results of our surveys, we found many cases where mail-based questionnaire surveys or telephone-based interview surveys were implemented to investigate cases of CC introductions. Carried out with the principal purpose of understanding the present situation and extracting the issues involved, the surveys focused on the CC system and the entities issuing and operating the CC. According to the Sendai Urban Research Forum (2002) and Michimori and Miura (2002), who conducted early nationwide surveys, the organizations issuing and operating CCs and the commencement of such initiatives increased rapidly from 1999.

Regarding the purpose of introducing CCs, many of the issuing organizations cited social aims such as "community revitalization" and "creating connections among people," while other organizations cited economic aims like "shopping district revitalization," "invigorating town planning activities," and "simultaneously regenerating the local community and revitalizing regional commerce." (Japan Center for Regional Development, 2004; The Japan Research Institute, 2004; Yosano et al., 2006; Kimura, 2008). In general, a CC is used as a tool to solve regional economic poverty and community decline, but the goals of introducing a CC differ in each region. Some regions simultaneously aim for multiple goals. Meanwhile, as far as the issuance system is concerned, the most common format of currency issuance, the note format, accounts for half or more of the total. However, we can divide these note-issued currencies into two types by whether they perform an endorsement or not. The next most common currency system is the book type, and of the many such types that exist, some use the note issuance and book type together. In recent years, we have seen a gradual increase in regions adopting electronic centralized management methods

via IC cards and online accounts, but at the time of the initial surveys, only a few were examined during the first half of the 2000s.

We cannot know the transition in CC in Japan from these results because these previous studies targeted Japanese CCs at a certain point in time. In addition, since they were mainly conducted in the first half of 2000, no research has been conducted for all CCs issued in Japan. Therefore, no studies investigated the transition in Japanese CC from the end of the boom to the present[ii].

This study aims to clarify the expected roles and limitations of Japanese CC by determining the transition in the purpose and form of Japanese CCs from previous surveys and our survey. Asking why such diverse types of CC were created by exploring the reason and development process will elucidate the changes in Japan's economy and society through the transition of CCs.

2. METHODOLOGY

To make a complete list of CCs issued in Japan since the 1980s, we searched for information about Japanese CCs from media such as academic papers, reports websites, and newspaper databases (The Asahi Shimbun and the Nikkei). The information about each CC includes the circulation area, the start and end year, the purpose of issuance, the issuing form (e.g., Coupon type, IC card), and its convertibility. We divided the 47 prefectures in Japan into three areas, and gathered information on CCs in these areas. For each CC, we classified the purpose of issuance into 13 categories (Table 1) according to the Japan Research Institute (2004). The classification was carried out in two steps. In the first step, three authors independently classified the issuance purpose of CCs in an assigned area. In the next step, the validity of the classification was discussed and a final decision was then made. From the collected information, we could hardly obtain information about the end year of a CC and its convertibility. Regarding the former, about half of Japanese were CCs suspended or terminated within 2 - 3 years of its issuance (Izumi, 2006), though the termination was not announced in many cases.

Table 1. CC issuing purpose classification.

1) Creating connections among people	2) Promoting welfare and medical care	3) Promotion of recycling
4) Natural environment protection	5) Protection and restoration of cultural properties	6) Maintenances of roads, parks, and public facilities
7) Regional economic revitalization	8) Promotion of local festivals and events	9) Promotion of civic activity
10) Support for the agriculture, forestry, and fishery industries	11) Promotion of exchanges with other regions	12) International cooperation
13) Others		

Our study identified 792 CCs issued in Japan, 537 CCs of which fit within our classification of issuance purpose. Although there are CCs with only one purpose, many CCs have multiple. To specify the features of the combination of purposes, we conducted a cluster analysis using sample scores obtained by Hayashi's quantification method type III (Hayashi, 1951) as a dependent variable for issuing purpose. From the results of these analyses, we consider the features of issuing purposes according to issuing forms and transition.

3. RESULTS

3.1. Transition of issuing purpose of Japanese CCs

Fig. 1 shows the time series of the number of new Japanese CCs from 1999 to 2016. The number of new CC in Japan intensified their increasing trend since 1999, but started declining after peaking in 2002; then, approximately 15 CCs were issued annually since 2008.

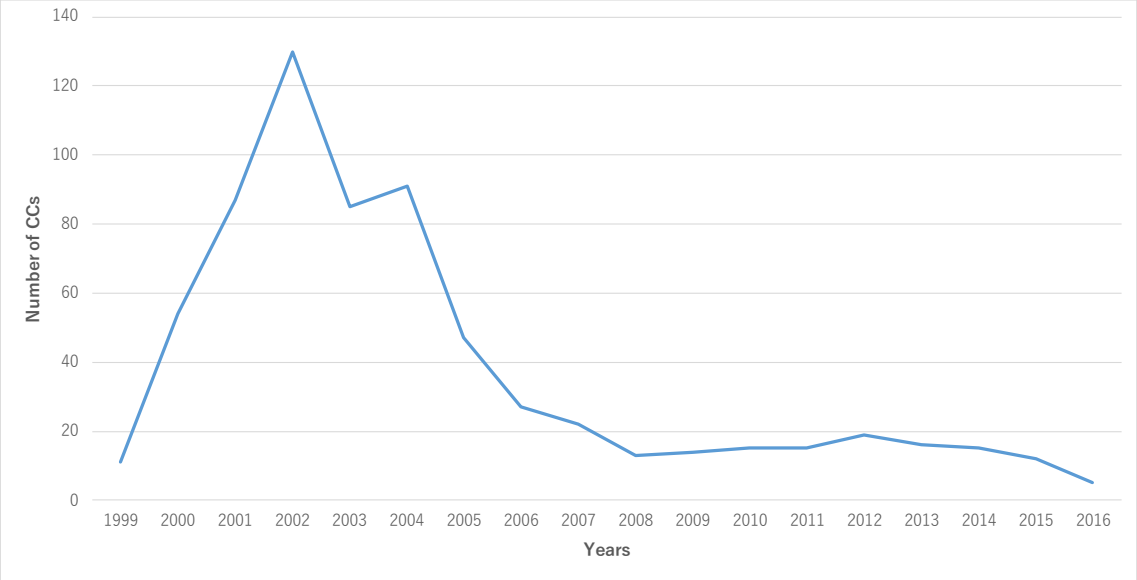

Figure 1. Time series of the number of new Japanese CCs.

Table 2 is a cross-tabulation showing the relationship between the issuing purpose and form. The most common purpose for issuing CCs was "creating connections among people" (349 samples), followed by "regional economic revitalization" (258 cases). The most frequently issued form is "coupon type" (429 samples), which actually accounts for 80% of the total. The second is "book type" (104 samples), and there are fewer CCs issued through digital media such as IC cards and online system than that for analog media. Focusing on the relationship between issuing purpose and issuing form, 93% of the book type, 62% of the coupon type, and 86% of the online system CCs were issued for "creating connection among people." On the other hand, 50% of coupon type, 35% of book type, and 68% of IC cards aimed at "regional economic revitalization." Since the book type is limited to between dozens of people to hundreds of participants, rather than revitalizing the regional economy, it is adopted for "creating connections among people."

Table 2. Relationship between CC issuance purpose and issue form in Japan.

		Issuing purpose of CC													Sum
		Creating connections among people	Promoting welfare and medical care	Promotion of recycling	Natural environment protection	Protection and restoration of cultural properties	Maintenances of roads, parks, and public facilities	Regional economic revitalization	Promotion of local festival and event	Promotion of civic activity	Support for agriculture, forestry, and fishery industries	Promotion of exchange with other regions	International cooperation	Others	
Issuing form of CC	Coupon type	264	57	122	127	11	17	220	68	101	80	32	15	40	429
	Book type	97	22	24	22	5	5	36	13	36	7	8	4	10	104
	Due bill type	8	2	0	2	0	0	7	1	3	1	1	0	0	12
	IC card	13	6	12	3	0	4	21	6	5	1	3	0	3	31
	Online system	18	3	6	5	1	2	11	7	5	1	5	1	3	21
	Others	8	3	4	4	0	0	9	2	3	1	1	0	4	15
	Sum	349	78	148	144	14	23	258	79	129	86	39	17	50	537

Fig. 2 shows the time series of the number of new Japanese CCs by issue purpose from 1999 to 2016. The purpose of issuing CCs changed; CCs aimed at "creating connections among people" were the most frequent. However, the most frequent purpose since 2007 was "regional economic revitalization." The number of issued CCs for "creating connections among people" was third in 2011, while the number of CCs for "promotion of recycling" was second. Many Japanese CCs have both single and multiple purposes, so it is difficult to determine the characteristics of CCs in Japan from only Fig. 2. Therefore, we must clarify the combinations of issuance purposes.

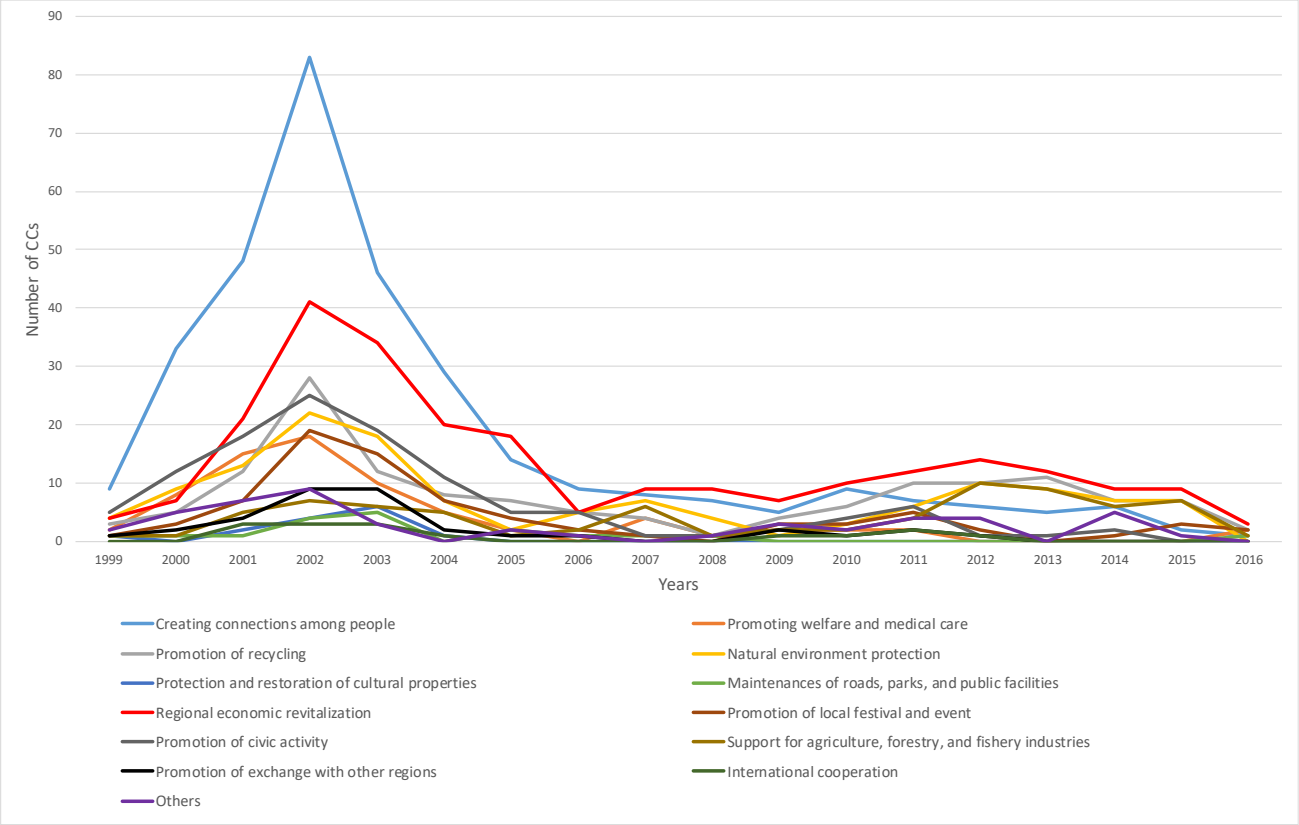

Figure 2. Time series of the number of new Japanese CCs by issuing purpose.

3.2. Characteristics of combinations of issuing purposes

Based on responses (categories) to the 13 issuing purposes of each CC (samples), Hayashi's Quantification Method Type III quantifies samples and categorizes simultaneously. In this method, a response matrix should be rearranged so that the correlations between rows and columns become maximal. a "category score" can be obtained for each issuance purpose as an element of the eigenvector corresponding to the maximum eigenvalue. A "sample score," which is an average value of the category score with which the CC responded, can be assigned to various CCs. We applied a hierarchical clustering method to all sample scores obtained by the Quantification Method Type III and estimated 5 clusters in advance from the results. We also conducted a non-hierarchical clustering analysis for all sample scores using the estimated number of clusters and K-means algorism. We used IBM SPSS Statistics 22 for all analyses. From the discrimination measurement plot, "promotion of recycling" and "natural environment protection" are related to dimension 1, "promotion of a local festival and event" and "promotion of civic activity" were related to dimension 2. From this result, dimension 1 on the X axis represents "Environment-oriented CC," and dimension 2 on the Y axis represents "Regional activity-oriented CC." We defined the following 5 clusters by examining the meanings represented by each dimension and the issuing purpose of the CCs belonging to each cluster.

Cluster 1: Revitalization of regional economies based on environmental protection and resource circulation

Cluster 2: Multipurpose CCs

Cluster 3: Revitalization of forestry and regional economies

Cluster 4: Formation of people's connections and regional economic revitalization

Cluster 5: Promotion of regional activities and community welfare based on people's connections

Fig. 3 shows the range of each cluster in a scatter plot of sample scores. Table 3 shows the number of CCs included in each cluster.

Table 3. Number of CCs in each cluster.

Cluster	Number of CCs
1	87
2	31
3	67
4	253
5	92

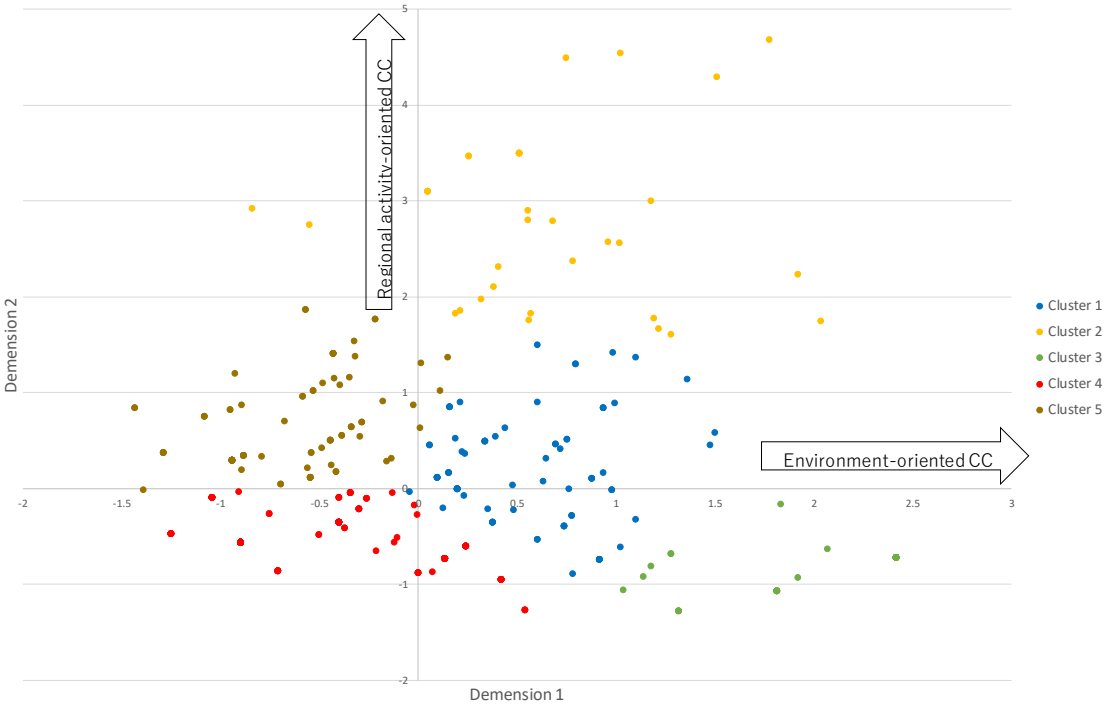

Figure 3. Scatter plot of sample scores by cluster: Some points contain some CC data.

Cluster 4 accounts for 48% of the all CCs because more than half of Japanese CCs aim at "creating connections among people" or "regional economic revitalization," or both. The CCs of Clusters 1, 2, and 3 positioned on the + X-axis are environmentally friendly type CCs for environmental protection and resource circulation. The CCs in Cluster 3 have a specific purpose, that is, to promote thinning forests by introducing CCs and revitalizing the regional economy simultaneously (e.g., "Mori Ken"[iii] and the "Kinoeki Project"). On the other hand, Cluster 1 contains CCs aimed at various environmental protections and resource circulation, such as cleaning beaches and recycling newspapers (e.g., "Beach Money" and "Pepa"). Cluster 2 is also positive on the Y axis, so CCs belonging to Cluster 2 are multipurpose and aimed for not only natural environmental protection and promotion of recycling, but also to promote citizen activities and local events (e.g., the "Atom Currency"[iv]). Since Cluster 5 is located in the second quadrant, it contains CCs aimed at promoting regional activities and welfare activities, including time-based money such as "Fureai Kippu."

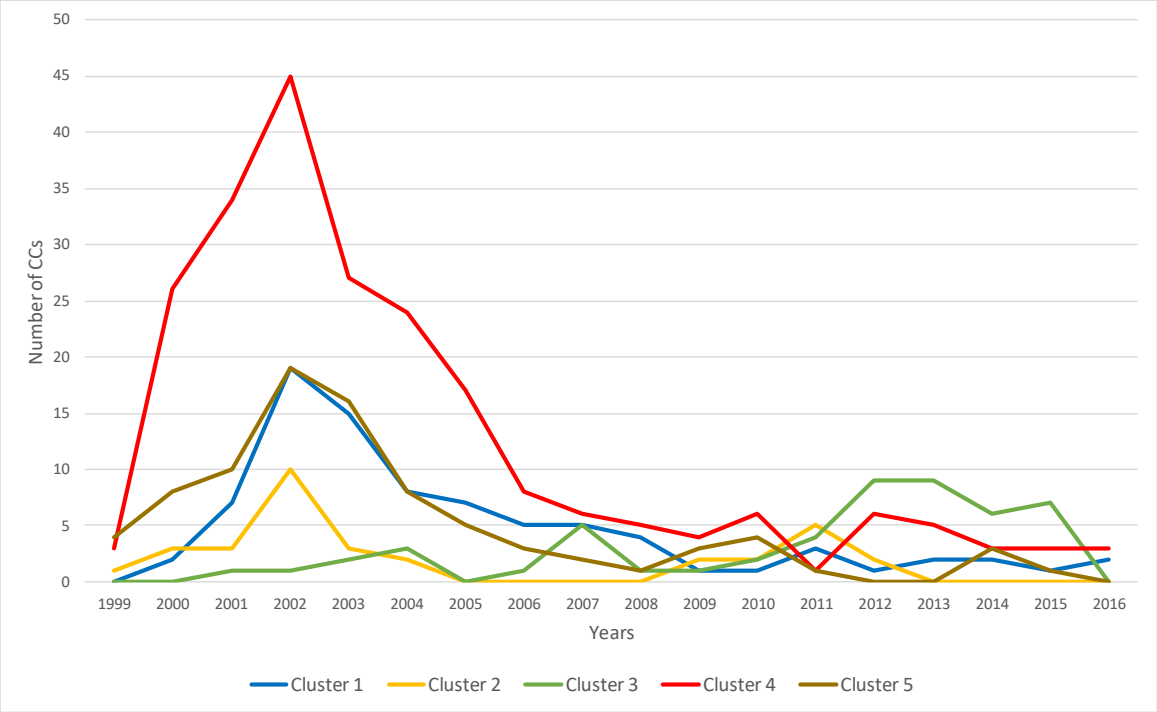

Figure 4. The time series of the number of newly issued Japanese CCs by cluster.

Fig. 4 shows the time series of the number of new Japanese CCs by cluster. Cluster 4 was the most frequently issued CCs in 2002, but Cluster 3, which targeted the regional economy and forestry, is the leader from 2012. Most environment-oriented CCs issued recently belongs to Cluster 3 because the number of new CCs belonging to Cluster 1 were less than 5 each year since 2006. The number of new CCs belonging to Cluster 4 has dropped to 2 in 2011, but the number is increasing since 2012. This is because CCs issued to "make connections among people" were triggered by the Great East Japan Earthquake in 2011. There were 10 cases of Cluster 2 CCs, a multipurpose CC, were issued in 2002, but there were no new CCs in this cluster from 2005 to 2008. The number of CCs in Japan with multiple purposes has decreased.

4. DISCUSSION

4.1. Comparison with previous survey

Here, we compare our findings to previous research results. Kimura (2008) is the most similar study to ours. He gathered information about CCs in Japan from September 2006 to July 2007 using a similar method and created a database of Japanese CCs. The database items included information such as start time, issuer, currency form, purpose, and CC use. Focusing on the purpose of CCs in the database, the CCs aimed at "revitalizing the community (promoting volunteer activities)" applied to 63.8% of CCs, followed by CCs aimed at "revitalizing the regional economy" at 20.7%. Although we report similar findings from our survey, we can see that the number of CCs issued to address environmental protection, which accounted for only a few percent in Kimura's survey, has increased greatly in our survey. Regarding the form of CC, there is no difference in our findings with that of Kimura (2008), in that coupon types were more frequent than book type.

Izumi (2006; 2013) conducted a hearing on CC operating organizations from 1999 to 2008 and found that transactions using CCs continued. The number of new CCs in Japan has declined dramatically since 2002 (Izumi, 2013), the number of CCs operating in Japan was the largest in December 2005. These facts also indicate that many CCs issued in Japan at this time stopping circulating 2-3 years from their launch.

4.2. Role of issuing organizations on the transition in CCs

While we show results consistent with previous studies, we can suggest a certain relationship between the activities of CC organizations that lead the introduction of CCs and the formation of each cluster. For example, the "Sawayaka

Fukushi (Sawayaka Welfare) Foundation," which spread the concept of time-based currency in Japan and Toshiharu Kato, who advocated "Eco-money," influenced the transition of Clusters 4 and 5 in the 2000s. We think that the number of new CCs belonging to Clusters 4 and 5 decreased in the second half of the 2000s because they reduced the involvement in the spread of these CCs. However, the Sawayaka Fukushi Foundation has been supporting the issue of CC called "reconstruction support currencies" to promote recovery from the Great East Japan Earthquake. This activity contributes to the number of newly issued clusters 5 in recent years. On the other hand, the Atom Currency (Cluster 1) launched branches in various areas of Japan from 2008, each of which shared a circulation scheme that succeeded at its headquarters, so the number of new CCs belonging to Cluster 1 has increased. In the 2010s, organizational activities such as "Transition Town" and the "Kinoeki Project" contributed to the rise in the number of new issuances in Clusters 3 and 4. These organizations regularly hold study sessions on CCs and shared knowledge of issuing and operating CCs. In particular, the "Kinoeki Project" systemized the method for exchanging thinning wood and CCs to enable introduction of this system in various areas in Japan. By this approach, the Kinoeki Project was implemented in about 40 regions in 2017. However, in all areas, the "Kinoeki Project" had a deficit balance after deducting subsidies from income. This means that the project is financially unstable (Fujimoto et al., 2015). Even CCs belonging to Cluster 3 have the problem of operating cost, and unless this problem is solved, not only does the number of new CCs decrease, but also the system itself using the CC may disappear. The field required the development of a CC system that revitalizes the regional economy without relying on subsidies, but there are few successful models in Japan.

5. CONCLUSION

We clarified the transition in the expected roles of Japanese CC by investigating the issuing purpose and form of all CCs issued in Japan. The results of our survey show that the number of new CCs in Japan fell dramatically until 2008, with peaks in 2002, suggesting that the expectation of CCs as a tool for regional economic revitalization and creating connections among people has been decreasing. However, new CCs have not disappeared: from 2008 to 2016, 15-20 new CCs were issued annually. New types of CC stand out (e.g., the "Kinoeki Project", the "Atom Currency", and reconstruction support currencies to recover from the Great East Japan Earthquake, etc.), while the combinations of issuing purposes have changed in line with the Japanese economy and society. One of the mechanisms through which new types of CCs are spreading is that an organization issuing a specific CC propagates its circulation model to various areas. CCs belonging to Clusters 1 and 3 are increasing in the 2010s because the "Atom Currency" (Cluster 1) and the "Kinoeki Project" (Cluster 3) spread their circulation model to other CC organizations.

In this study we focused on the starting year, purpose, and form of Japanese CCs, but we need to clarify the effect of the CCs in Japan by examining the duration of each CC and the degree that each achieved its purpose. It is also necessary to clarify the distribution process of the CC circulation model and how the issuing organization is involved in the process. Such findings may reveal how to revitalize the stagnant Japanese CC. To address these research subjects, we plan to conduct interview surveys and questionnaire surveys of the main issuing organizations in Japan we found in this study.

In addition, of the many types of digital CCs, we only checked the IC card type. Recently, some cases of attempts to issue other types of digital CCs have emerged in Japan. These digital CCs are characterized by benefits to both users and issuers, such as settlement by smartphone application and cheap system maintenance and management costs. It is necessary to continue attempting to determine what kind of cluster the digital CCs will form in the future.

BIBLIOGRAPHY

Fujimoto, C., Urade, T., & Kamihogi, T. (2015). The actual conditions and problems of the Kinoeki Project (in Japanese). Journal of Rural Problems, 51(3), 191-196.

Hayashi, C. (1951). On the prediction of phenomena from qualitative data and the quantification of qualitative data from the mathematico-statistical point of view. Annals of the institute of statistical mathematics, 3(1), 69-98.

Hayashi, M. (2012). Japan's Fureai Kippu Time-banking in elderly care: Origins, development, challenges and impact," International Journal of Community Currency Research, 16, 30-44.

Izumi, R. (2006) "The Development and Future Challenges of the Community Based Currency in Japan, (in Japanese)" Economic Bulletin of Senshu University, 40 (3), 97-133.

Izumi, R. (2013). Community currency system in Japan: its development and future (in Japanese). In Nishibe, M. (ed.) Community Currency, Kyoto: Minerva Shobo, 234-243.

Japan Center for Regional Development (2004). Regeneration of community by community currency.

Kichiji, N. & Nishibe, M. (2008) "Network Analyses of the Circulation Flow of Community Currency," Evolutionary and Institutional Economics Review, 4 (2), 267-300.

Kimura, K. (2008). Current status and issues of regional currencies aimed at revitalizing regional economies: Based on analysis of home-built database (in Japanese). Sankaiken Ronshu, The Osaka Prefectural Institute for Advanced Industry Development, 20, 107-112.

Kurita, K., Miyazaki, M., & 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, 136-145.

Kurita, K., Yoshida, M., & Miyazaki, Y. (2015). What kinds of volunteers become more motivated by community currency? Influence of perceptions of reward on motivation. International Journal of Community Currency Research, 19, 53-61.

Lietaer, B. (2004). Complementary currencies in Japan today: History, originality and relevance. International Journal of Community Currency Research, 8(1), 1-23.

Michimori, S. & Miura, D. (2002). Statistical survey report on Community Curency of Japan in 2001: Functional restricted currency and community regeneration (in Japanese). Kanmon chiiki Kenkyu, 11.（http://www.shimonoseki-cu.ac.jp/sanbunken/kyodo/report/2002_vol11/part-2/2-4.html）

Miller, E. J. (2008). Both borrowers and lenders: Time banks and the aged in Japan, PhD dissertation, Australian National University.

Miyazaki, Y. & Kurita, K. (2013). Community currency and sustainable development in hilly and mountainous areas: A case study of forest volunteer activities in Japan. Proceedings of 2nd International Conference on Complementary Currency Systems.

Miyazaki, Y. & Kurita, K. (2018). The diversity and evolutionary process of modern community currencies in Japan, International Journal of Community Currency Research, 22, 120-131.

Miyazaki, Y., Yoshida, M., Kobayashi, S., & Nakazato, H. (2016). Presentation of analytical framework toward an understanding of the evolution of community currencies: Through examination of previous research on nationwide survey (in Japanese). Papers of the 20th Annual Conference of the Japan Association for Evolutionary Economics.

Nakazato, H. & Hiramoto, T. (2012). An empirical study of the social effects of community currencies, International Journal of Community Currency Research, 16, 124-135.

Sendai Urban Research Forum (2002). Research on community currencies and their utilization examples.

September, J. (2019). Key factors for the durability of community currencies: An NPO management perspective, International Journal of Community Currency Research, 23(2), 17-34.

Seyfang, G. & Longhurst, N. (2013). Desperately seeking niches: Grassroots innovations and niche development in the community currency field, Global Environmental Change, 23, 881-891.

The Japan Research Institute (2004). Report on the survey on the actual situation concerning community currency (in Japanese). Treasury Division, Financial Bureau at Ministry of Finance, Japan.

Yosano, A., Kumano, T., Takase, T., Hayashi, N., & Yoshioka, I. (2006). Summary report on a snowball sampling survey of local currency in Japan (in Japanese). Bulletin of the Faculty of Sociology, Kansai University, 37 (3), 293-317.

Weekly Waseda (2010). Atom Currency, a program supporting local activities. July 15th, 2010 issue, 1224. http://www.waseda.jp/student/weekly/english/2010/1224/224e_notice.html

ENDNOTES

i - For further details about the evolution of time banking in Japan, please refer to Miller (2008).

ii - Miyazaki and Kurita (2018) aimed to show the diversity and evolutionary process of CC in Japan.

iii - For further details about the "Mori Ken," please refer to Miyazaki and Kurita (2013).

iv - The "Atom Currency" is distributed to people who have done "good things" according to the four principles of "area," "environment," "international," and "education" (Weekly Waseda, 2010).

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TOWARD SPATIAL ANALYSES OF LOCAL CURRENCIES: THE CASE OF FRANCE

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ABSTRACT

This paper suggests that studies on local currencies (LCs) should engage in spatial analyses, as far as their territorial distribution is highly heterogeneous. It provides a statistical overview of the territorial features of LCs functioning in France, wherein their number has increased solidly and remarkably fast over the last decade. However, there is a huge variety in their extent, and their development has not been spatially even, especially with regards to the administrative subdivision of the country in departments (counties or departments that correspond to the NUTS-3 level of regions according to the administrative territorial classification of the EU). This uneven distribution let us presume that it is interrelated with different territorial conditions, which motivated our research. We build a size index of LCs and provide a cluster presentation of them as of 2018. A departmental territorial breakdown of data shows statistically significant spatial concentrations of LCs in France. We then provide insights into the reasons for such concentrations.

KEYWORDS

Local currencies, France, territorial distribution, spatial statistics, size index.

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1. INTRODUCTION

France is the country that experienced the most impressive dynamics in the emergence of local currencies in the years 2010. These currencies are issued by nonprofits (under the legal form of associations) as a counterpart of the same amount in euros brought by users and put into reserve accounts. Providers (which can be shops, producers and other market activities, public services and utilities, associations) may ask for the repayment of the local currency they receive at the association that should use its reserve accounts for this purpose. This definition narrows the scope of what is often called CCs or complementary or community currencies. Under Longhurst and Seyfang's taxonomy, local currencies must be distinguished from "service credits" (like time banks) and "mutual exchange" (like LETS) and "barter markets" (like the Argentinian Trueque) (Longhurst and Seyfang, 2013). Under Blanc's typology, the local currencies under scrutiny in the present paper refer to economic projects aiming at protecting, stimulating or orientating the local economy, and are implemented in what is called a third generation of CCs, which are characterized by convertible schemes that include local businesses (Blanc, 2011). In any case, one should not confuse the specific category of local currencies, used in this paper, with the generality of complementary or community currencies.

Local currencies are not a new phenomenon. In the early 1930s, during the first years of the great depression and in contexts of harsh budgetary restrictions and booming unemployment, a wide range of complementary currencies of various kinds were issued by local communities that tried to compensate for the shortages of the legal tender, in some countries of Europe as well as in the US (Gatch, 2008; Kennedy et al., 2012). A very few of them had been banned, such as the currency of the municipality of Wörgl in Austria, before such kind of initiative would blossom in the country. When local governments were committed in their issuance, this did not last much, while central or federal governments barely paid attention to them. The only experience that survived this period is the still existing WIR Bank, in Switzerland, a model of mutual credit system primarily for B2B (Stodder, 2009; Vallet, 2016) rather different from local currencies. The other initiatives did not survive the period of the Depression and disappeared within a few years.

In the recent decades, and as a part of the dynamics of alternative currencies that were experienced since the beginning of the 1980s, local currencies re-appeared under various forms. They barely originated from municipalities and other local governments but were mostly the result of civil society association. After a period in which they were issued as lump-sums paper currencies to new members (Trueque, Argentina; see e.g. Orzi and Plasencia, dir., 2007; Gómez, 2009 ; Saiag, 2015) or for registered providers (Ithaca HOUR ; see e.g. Jacob and alii, 2004; Grover, 2006), new schemes emerged from the end of the 1990s and blossomed in the following decade, that soon imposed the three pillars of parity to the national currency, backing by an equivalent reserve in the national currency, and a convertibility limited to professional members. That was the case, with nuances due to local choices, of the local currencies of Brazilian community development banks such as the Palmas, of various German "Regio" currencies such as the Chiemgauer, of the BerkShares in the US, the Bristol Pound in England, etc.

Though LCs are not necessarily the tools and results of crisis management, the procyclical feature of the current financial and monetary systems and the major shock of the crisis of 2008-09 contributed to a new interest in the potential beneficial effects of various kinds of alternative currencies, including the local currencies that are dealt with in this text. The other major source of interest in these schemes lays in their potential contribution to the ecological transition at local level. In any case, they are seen as possible tools for a move toward more vibrant and resilient communities.

In France, longstanding reflections but limited experiences were revived after the shock of 2008-09. The first projects started in the aftermaths of this crisis, with arguments combining the search for local responses to it, the will to contribute to a global shift toward an economy less dependent on the financial system and the need for experimentations for territorial resilience building and ecological sustainability. The limits of the then ongoing experience of the SOL currency were overstepped in 2010, with the creation of the first French local currencies based on the three pillars of parity, backing and partial convertibility (Fare, 2011; Blanc & Fare, 2018). In 2018, 75 local currencies circulated in the country (74 at the end of the year, after one shutdown) and a total of 86 had been implemented since the beginning of this wave, which makes probably France the second country in the world by the number of this kind of currencies[i]. In Brazil, the number of community development banks topped 100 in 2013, mostly associated to kinds of local currencies (called moedas sociais) (Rigo, 2014; Rigo and França Filho, 2017). The dynamics

in France proves to be over that of the many US HOURS of the years 1990s (Collom, 2005), as well as the German Regios of the years 2000s (Thiel, 2011; Volkmann, 2012). As will be seen, though still growing in 2018, it is likely that the movement already reached its peak in terms of yearly launch of new currencies. It might be said that it is time to get a systematic statistical overview of such dynamics.

If statistical overviews of national dynamics of local currencies can be found in the literature (e.g. Collom, 2005, on the US HOURS-like systems), spatial presentations have been mainly omitted so far, most probably due to the lack of systematic data. In the case of LCs in France, no systematic statistical overview of LCs exists, with the exception of Fourel, Magnen and Meunier (2015, p. 55 sq), on the basis of a survey in 2014, which provided some (actually scarce) data on 14 cases of circulating LCs and on 18 projects. Since then, the impressive rise in the number of LCs throughout the country calls for further systematic evaluation. Moreover, as will be shown, their territorial distribution is highly heterogeneous: parts of the country experience strong movements on LCs implementation and development, while other parts look like deserts on this matter. This paper was then motivated by the lack of spatial analyses, be they on French LCs or on other kinds of complementary currencies and in other countries. It states that studies on LCs should engage in spatial analyses.

So far, a few master theses on French LCs developed kinds of regional analysis, while no published academic paper was identified. Poveda (2015) zoomed on the Eusko, the successful local currency implemented in the Northern Basque country. Simon (2018) tried to embrace the whole national dynamics through the viewpoint of the French administrative breakdown of the "regions", but this level (that divides Metropolitan France into 13 regions) seemed too large to provide accurate conclusions.

The present paper aims at analyzing the main characteristics of the French dynamics of LCs, on the basis of an original database (see Appendix 1) that allows displaying its spatial dynamics. By analyzing these spatial dynamics, we may understand better and learn more about the territorial conditions of France. And the reverse might be true as well; analyzing the territorial socioeconomic conditions can contribute to the increase of our knowledge on the preconditions for the successful functioning of LC schemes. The authors' intention with the present paper is to launch new perspective in the academic research dealing with monetary innovations under territorial lenses by accounting for territorial specificities through a spatial quantitative analysis.

The paper starts with the presentation of the overall evolution of French local currencies during the period 2010-18, on the basis of this original data. As there is a huge variety in the extent of LCs, we build a simple and original size index of LCs and consequently define 5 clusters depending on this index (Section 2). Then, we deal with the spatial features of the territorial distribution of the local currencies in a NUTS-3 regional (i.e. departmental) breakdown by applying descriptive statistics and correlation analyses. This unveils a degree of spatial concentration that shows how the process of creation and implementation of this kind of schemes is not spatially even (Section 3). The paper then emphasizes the spatial heterogeneity of local currencies in France (Section 4).

2. THE EVOLUTION AND THE EXTENT OF LOCAL CURRENCIES IN FRANCE

Since the birth of the Abeille (in Villeneuve-sur-Lot) in early 2010, the rising field of local currencies structured around two overlapping networks. The first historical one is a network called "SOL Movement", which is based on a formal nonprofit, originating from the previous SOL scheme that led to a few experiences in France from 2006 to 2012 (Fare, 2011)[ii]. These experiences were not exactly local currencies as defined in the introductory section, but rather and mainly rewarding schemes for ecological consumption (though their scope was initially much broader). This network was rejuvenated in 2011-12 with the birth of the SOL-Violette (in Toulouse), a paper local currency based on the three pillars seen above that had been first implemented in France by the Abeille. This formal network not only serves as a forum for experience sharing, but also provides technical support and works at the improvement of the economic efficacy of the experiences by developing advocacy, promoting the involvement of local governments[iii] and looking for technical solutions such as the use of digital versions of the currencies (not in order to replace the paper notes but to be used beside them, as in various British schemes or in the case of the Chiemgauer).

The second network was built as an informal collective grouping of persons and experiences, starting with the case of the Abeille, and can be called the "MLCC network"[iv]. This informal grouping used to organize national encounters

twice a year and wrote a manifesto in order to frame what could be called, initially, "local complementary currencies", then, "local citizen complementary currencies", thus contrasting with local currencies from local governments or from merchant's associations[v]. Overall, this network used to be oriented toward the clear definition of the values and principles a local currency should be respectful of, thus playing a very normative role – e.g. considering as a requirement that the projects be implemented by citizen. It maintains a website that contains an extended database on French experiences and projects, though based on voluntary declaration of their promoters[vi].

Though separated and distinct in their nature, these two networks overlap in that local currencies' associations may participate in both of them, and also co-operate on various points. It should be added eventually that a few local currencies are external to both networks, such as a few cases of currencies issued and managed by local merchant's associations.

We built an original database of circulating LCs as of 2018, starting with the data provided by the website of the MLCC network that we refined by checking and completing it (Appendix 1). An overall number of 75 local currencies was identified as circulating in 2018, and a few others had circulated before but stopped their activities. Figure 1 displays the evolution of this number of local currencies in France from 2010 to 2018, taking into account the original cases of SOL schemes that circulated before 2010. This overall number is remarkable, though most of them are of a small size and their potentials are underused (Blanc & Fare, 2018).

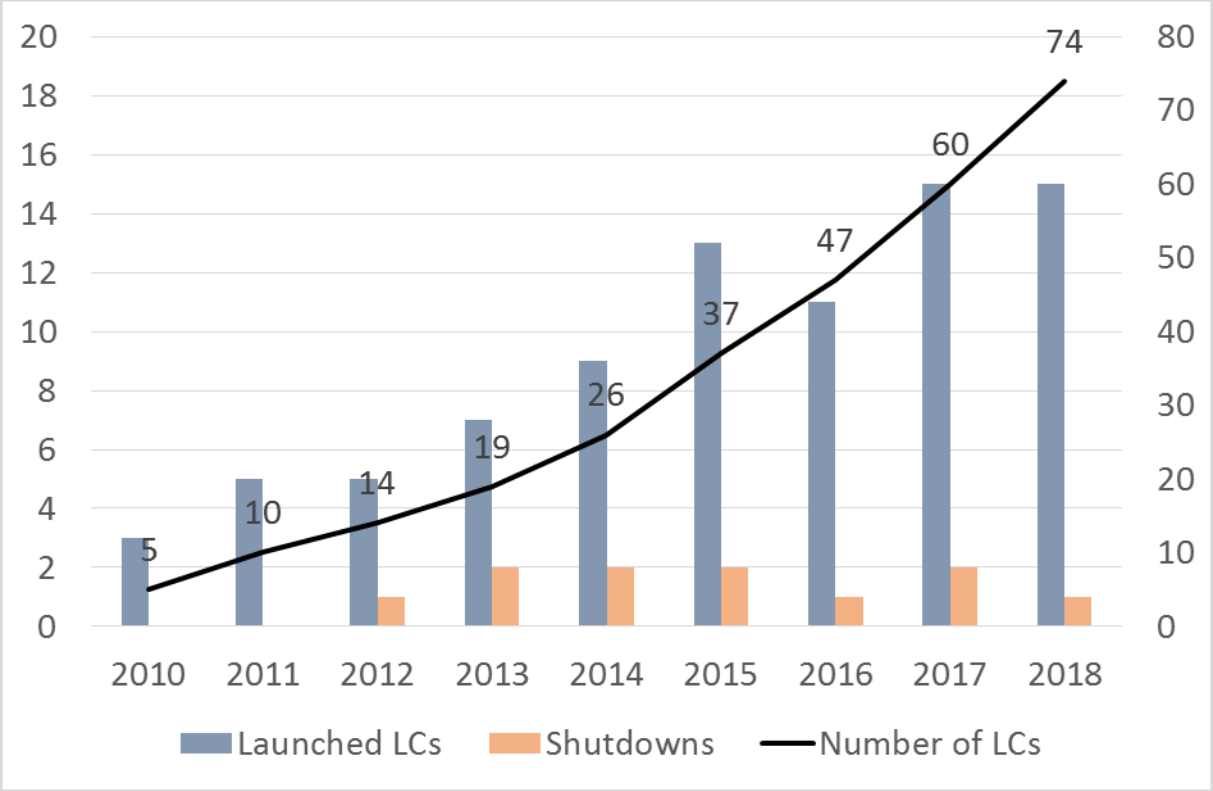

Figure 1: Number of local currency schemes in France, 2010-18. Left scale: launched and shutdowns. Right scale: net number of circulating LCs, end of year. Source: authors

We included in our database basic data on the number of individual users, the number of providers and the money supply of each circulating LC as of 2018 (see Appendix 1 for details on the way this dataset has been completed). While the important number of estimates prevents from developing in-depth calculations, it may be used however to provide a gross estimation of the overall extent of LCs as of 2018. Table 1 displays such an estimation. At first glance, the uneven size of the LCs is a major fact, since the median of the data distribution is far below the average. A small number of LCs are thus much more extended than the others and pull up the average significantly. The ten biggest LCs, i.e. 13.3 % of them, display 57.8 % of the money supply. The biggest one (by far), i.e. the Eusko (in the Basque country), makes 30 % of the overall money supply. The concentration is less important with regards to the number of individual users and providers. Moreover, the money supply median is much lower than the median for

the number of individual users and providers. This indicates that the success of LCs is not only related to the number of individual and professional users they manage to enroll, but it also and especially translates into the extent of their circulation. The biggest case (that is, the Eusko) displays indeed a ratio of money supply per individual user of nearly € 333, while the average is € 89. The importance of the money supply of the Eusko and of the 10 biggest cannot be explained by specific issuing rules, since almost all LCs were issued the same way in 2018. The development of digital versions of some LCs (which notably allow monthly conversions that push the money supply up) was too preliminary in 2018 to explain such gaps.

Table 1: Basic data estimates on the 75s French LCs as of 2018. Source: authors.

	Money supply	Number of providers	Number of individual users
All local currencies	€ 3,333,770	9,185	37,433
Of which: Eusko (cluster 5)	*30.0 %*	*7.1 %*	*8.0 %*
Of which: the 10 biggest (clusters 4 and 5)	*57.8 %*	*33.2 %*	*42.1 %*
Average	€ 44,450	122	499
Median	€ 19,000	90	311

In order to take account of the various size of these LCs, we built an original size index according to the following formula:

$$S_i = M_i \times (P_i + U_i)$$

With:

- S_i the size index of the currency (i)
- M_i its money supply
- P_i the number of accepting places (or so-called "providers")
- U_i the number of individual users (which, under the French legal framework, are supposed to be formal members of the issuing non-profit organizations)

We estimated this size index for each circulating local currency for the year 2018 and, in order to simplify this set of data as well as to overcome the problem of approximate estimations for several cases for which the data were not complete (see Appendix 1), we classified them into five clusters, from the smallest experiences (Cluster 1) to the most extended ones (Cluster 5) (Table 2).

This synthetic index can be used as a general comparison index on the size of local currencies (as previously defined, that is, based on the three pillars seen above), notwithstanding possible exchange rate issues between the national currencies that back them[vii]. Table 2 provides examples of non-French European or North-American cases for uses of international comparison. As clusters are built on classes of size indexes, the correction of data by purchasing power parities would probably not generate changes in this table.

In this paper, the clusters are used on a static way, since the observed cases are put into clusters as of their state of development in 2018. When thinking dynamically, the observer could think that the trajectory of a given LC should be to climb the steps of the clusters one after the other. However, a more detailed observation rather leads to think that, whereas LCs may change their clusters when maturing, many do not change significantly toward cluster 5. Some of the oldest LCs are indeed stuck in Cluster 1 (Commune), Cluster 2 (Luciole) or Cluster 3 (Abeille), and we may observe stagnation or a low pace of development of many LCs, while shutdowns of rather small ones have been

experienced during the period 2010-18. Conversely, high ranked LCs, which are schemes whose clustering is high, seem to have reached a high cluster one or two years after their launch.

Table 2: Clusters of circulating local currencies, France, 2018, and international comparison. Source: authors.

Cluster	Cluster 1 – LCs with inward circulation	Cluster 2 – Small LCs	Cluster 3 – Medium LCs	Cluster 4 – Extended LCs	Cluster 5 – Major LCs
Range of size index	$S_i < 10^6$	$10^6 \leq S_i < 10^7$	$10^7 \leq S_i < 10^8$	$10^8 \leq S_i < 10^9$	$10^9 \leq S_i < 10^{10}$
Number of cases (France, 2018)	11	32	22	9	1
Some cases (France, 2018)	Commune Trèfle	Bou'SOL Lignière Luciole Nissart Galais Lien	Abeille Florain MIEL Pive Pêche Rollon Roue 84	Cairn Doume Elef Gonette Léman SOL violette SoNantes	Eusko
Similar European and North-American cases (country, year of data)		Totnes Pound (UK, 2008)	Ithaca HOUR* (USA, 1998) Epi lorrain (Belgium, 2015) BerkShares (USA, 2017)	Brixton Pound (UK, 2016) Grama (Spain, 2018)	Chiemgauer (Germany, 2017) Bristol Pound (UK, 2017)

** Ithaca HOUR is not of the same type of local currencies as the others, as seen above, due to the lack of backing and of convertibility in U.S. dollars. We put this case in the table in order to get a broader view.*

Figure 2 displays a map of France with the location of the 75 existing local currencies in the metropolitan territory of France, weighted according to their cluster. This map shows that local currencies are distributed unequally on the French territory. The next section furthers the analysis on this phenomenon of spatial concentration.

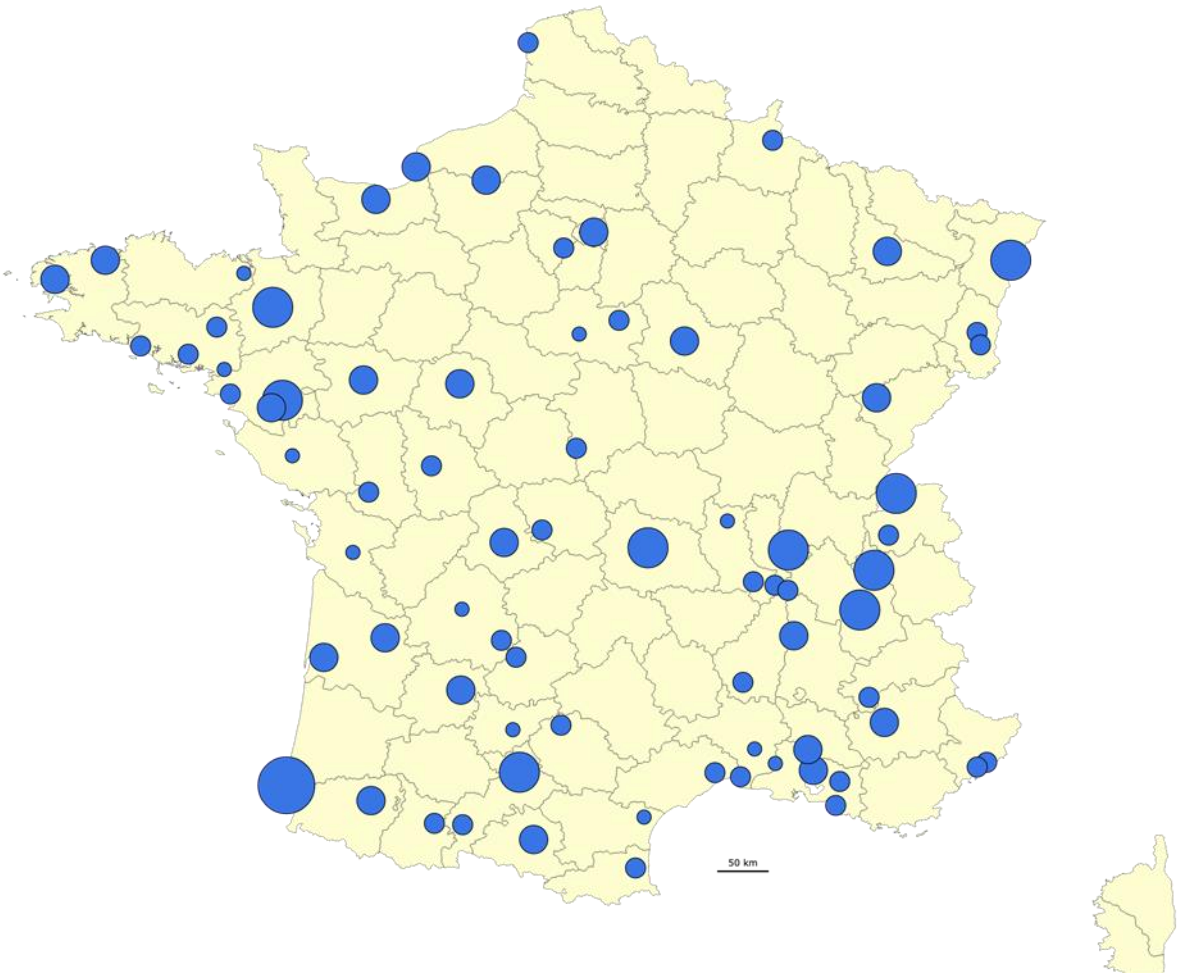

Figure 2: Location and size of the circulating local currencies in Metropolitan France in 2018. Source: Own editing. Map of Metropolitan France with departmental delineations.

3. THE SPATIAL CONCENTRATION OF LOCAL CURRENCIES IN FRANCE

As observed, the spatial distribution of local currencies in France is not even. Figure 3 displays the evolution of their localization between 2012 and 2018. They developed at first in the south and southeast of France, then spread over western and northwestern places, with a few eastern and northern cases. Figure 4 shows the map of France with the connectivity graph of the circulating LCs based on their GPS coordinates. The distance-based threshold value of neighborhood is adjusted to be the lowest where each point has at least one neighbor, in order to avoid isolates, which is 160.1 km in this case. Those schemes are considered as neighbors, and therefore connected by a line on the map, whose beeline proximity is within that distance value. Three major concentrations can be seen in the northwestern, southwestern and southeastern part of the country. If the spatial distribution were even, we might conclude that the socioeconomic conditions within the country are spatially even too, or that the territorial inequalities do not influence significantly the evolution of LC schemes. However, none of them is the case, as we see on the maps of Figure 3 and 4.

Figure 3: Localization of LC as of 2012, 2015 and 2018. Source: Own editing.

Figure 4: Connectivity graphs of the circulating LCs in France in 2018. Source: Own editing.

The uneven distribution is not only a matter of observing variety among departments with regards to the number of LCs in them, but also a matter of observing that this variety does not reflects the demographics. To do so, we calculated an estimated absolute value per department of the aggregated volume of LCs that circulate in them (Figure 5), derived from the size index presented above. The most populated areas of France, including Paris and the region Île-de-France (more than 10 million inhabitants), display very few numbers of LCs circulating with low volumes. Among the most populated departments of France, letting aside the departments that compose the Île-de-France region, the Nord (with Lille as a major metropolis) does not display any LC, while the Bouches-du-Rhône (with Marseille) experiences several but with low volumes. Figure 5 shows the distribution of the aggregated volume in the departments that experience such circulation.

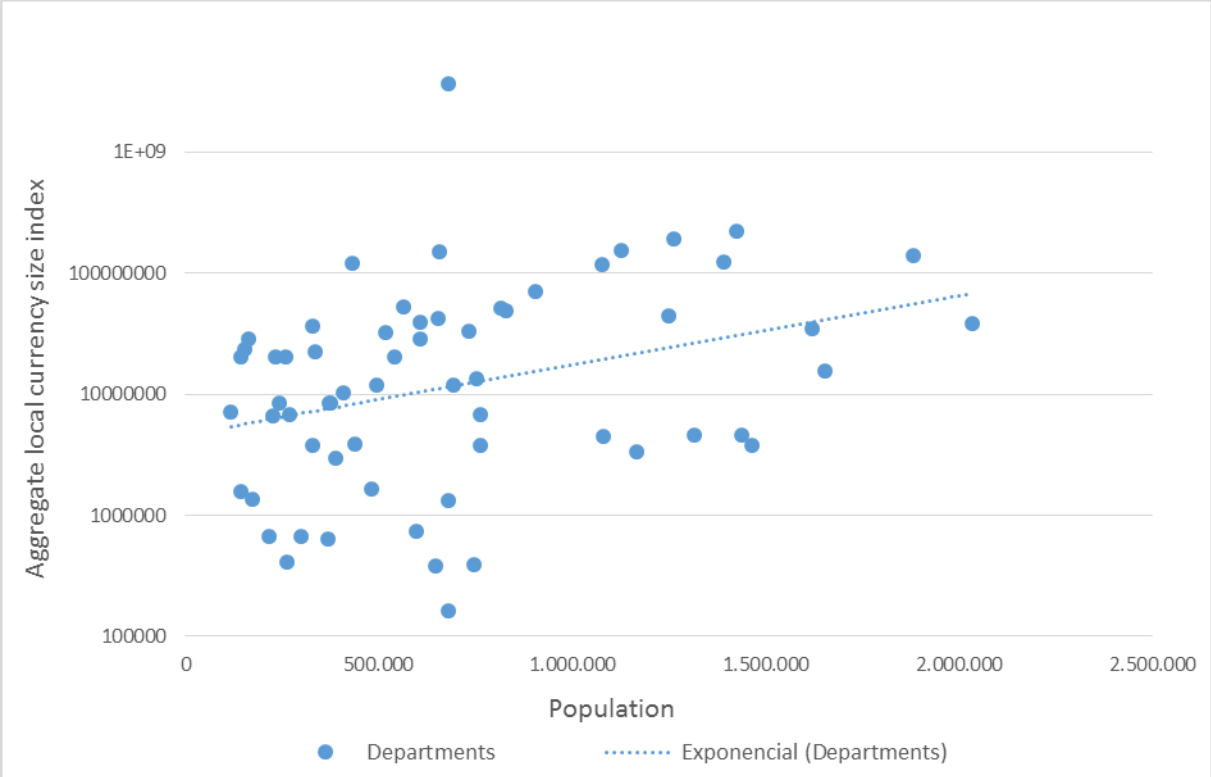

Figure 5: Estimated value of the aggregate LC size index and population per departments. Source: own editing.*

** Remarks: 1) The actual absolute value of the aggregated volume of LCs is given by the addition of the size indexes of the LCs of each department that experience the circulation of LCs. When a local currency circulates in various departments, we consider a rough share of this circulation per department. In the case of the Leman, which mostly circulates in Switzerland, we attribute a share of 33% of its circulation for France, equally distributed between the departments of Ain and Haute-Savoie. 2) Due to the important size index of the Eusko (department of Pyrénées-Atlantiques), the graph is shown in logarithmic scale.*

For Figure 5 presented above, we used an estimation of the actual absolute value of the aggregate LC volume. However, later on, we are going to use the aggregate ordinal cluster value of LCs per departments. The reason behind this is partly technical; in several cases, we do not have reliable data on the absolute value of volume of LCs, while we can still safely classify those cases into appropriate clusters. On the other hand, the number of schemes is still taken into consideration this way, but not as much as in the previous approaches that consider purely the number of schemes and ignore their volume.

We use below a departmental breakdown to implement a spatial analysis of LCs[viii]. Departments may appear as relevant territories for such an analysis, given their size, the availability of socio-economic data built by the INSEE[ix] and the fact that several LCs are expressly built to circulate throughout their department of implementation[x]. The 75 circulating LCs that were identified in France as of 2018 may be compared to the 96 departments that compose this territory. Departments allow thus a much finer grained analysis than the regional breakdown used by Simon (2018).

In order to prove statistically the existence of the territorial concentration, we calculated a departmental aggregate adding up the ordinal cluster value of the LCs that circulate in them. It is thus derived from the above-mentioned synthetic size index S and the subsequent clusters. Territorial concentration is often called spatial autocorrelation, which is a more technical term. A commonly used statistic is Moran's I that measures the degree of spatial autocorrelation of given values. Applying this statistic to our data, the population weighted global Moran's I analysis and its permutation test confirm the presence of the spatial autocorrelation of the aggregated cluster LC value at departments (Figure 6). The population weighted local Moran's I analysis shows statistically significant spatial concentration of low aggregated cluster value of local currencies at some of the northern departments, while there is another spatial concentration of high aggregated cluster value at some of the southern and southeastern departments (Figure 7).

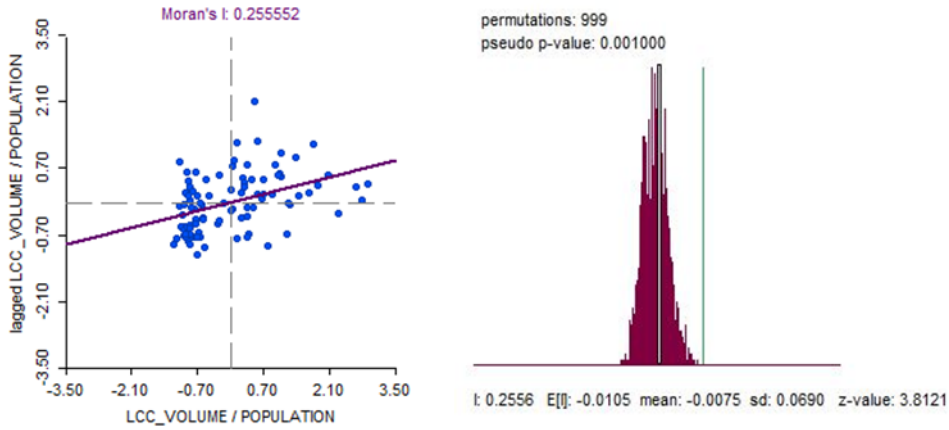

Figure 6: Population weighted global Moran's I statistic on the spatial distribution of aggregated cluster value of LCs per departments and its permutation test. Source: Own editing.

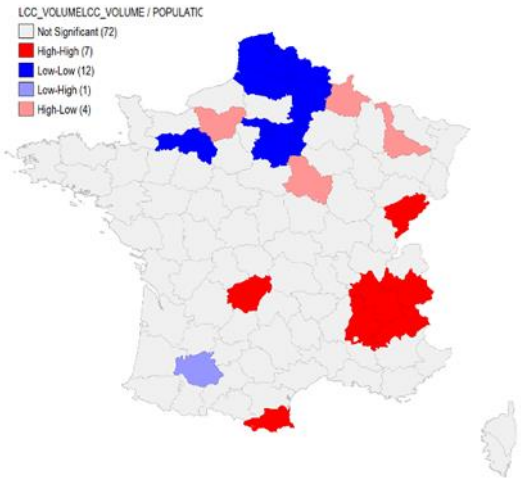

Figure 7: Population weighted local Moran's I statistic on the spatial distribution of aggregated cluster value of local currencies per departments. Source: Own editing.

We performed another test, although less sophisticated than the previous one, to underpin the argument of the spatial concentration. Table 3 shows the number of French departments according to their geographical position within the country as well as according to the existence of any local currency schemes within them. (Herewith, we took off the two departments of Corsica and the city of Paris.) As we see, only the northeastern part of France consists of departments mainly without local currency. Analyzing statistically the association between the geographical location of the departments and the existence of local currencies, we can see in Table 4 that there are some sorts of dependencies between these variables at significance level $p<0.05$. These results confirm the above presented spatial autocorrelation test results.

Table 3: Number of French departments according to their geographical position and the existence of local currency schemes. Source: Own editing.

Location	Are there circulating LCs?		**Total**
	Yes	No	
Northeast	8	15	23
Northwest	20	7	27
Southeast	15	8	23
Southwest	15	5	20
Total	58	35	93

Table 4: Association between the location of the French departments and the existence of local currencies. Source: Own editing based on Table 3.

	Value	Significance
Pearson Chi-square	10,472[a]	,015
Phi	,336	,015
Cramer's V	,336	,015
Number valid cases	93	

The results of the statistical analysis may be enlightened by the broader territorial socioeconomic conditions of the country. In the years 2010, a debate spread over in French academics and beyond on the territorial dynamics within the country (see notably Davezies, 2012 and the controversial Guilluy, 2014). The role of the rising metropolises was put central stage. As the important urban areas attract skills and capital from abroad and generate most of the nation's GDP, the effects of these metropolises on the other territories, called "peripheral" by Guilluy (2014), was particularly debated: are metropolises attractive centers that capture growth and wealth at the expense of their peripheries, leading to their impoverishment and desertification, or do they serve as an engine for the growth of the latter? And, consequently, what are the effects of the public policies that support the attractiveness of metropolises on the peripheral France?

The fate of middle towns in this context of rising metropolises and declining traditional industries, notably in the northern and eastern parts of the country, was also discussed[xi]. Middle towns were generally considered weakening by the surge of metropolitan areas. In order to assess their situation, the CGET[xii] built an index of fragility of middle towns based on their demographic dynamics, economic dynamics and poverty rates on the period 2008-2013 (Boutet, 2017). It showed a more complex situation than the too general viewpoint that would consider middle towns as declining. According to the CGET, declining middle towns are indeed mostly found in northern, northeastern and central parts of France, while many others are considered in a favorable situation in northwestern, western, southwestern, southern and southeastern parts of the country. Interestingly, the central and northeastern middle towns of France, which are overall the most fragile, are situated in departments with smaller number of LC schemes and limited volume of circulation. It seems that the departments that experience higher aggregate cluster value considerably overlap the departments in which the situation of the middle towns is less fragile than in others. One can conclude that, in general, LCs are less developed in vulnerable areas with impoverished populations.

So far, we illustrated and proved statistically the existence of a territorial concentration of LCs, providing some limited qualitative explanation. In order to get a more detailed and sophisticated representation, we need to consider broader aspects by applying further quantitative methodologies in form of correlation analysis than justifies our attempt to model the spatial spread of local currencies at departmental level in the next section.

4. SPATIAL HETEROGENEITY AND CONCENTRATION OF LOCAL CURRENCIES

Analyzing the socioeconomic factors which might influence the aggregated cluster value of the functioning local currencies, our first finding is that we cannot model this with any official statistical data in departmental breakdown. The reasons are mixed and multiple. One of them pertains to the problem of scale-dependency. Whereas 17 of the 75 LCs are supposed to be built for an area that corresponds with the territory of a department or higher, the claimed territory of the 58 others is much smaller than the departments wherein they are implemented. The actual extent of their circulation is even smaller than their claimed territory. The only case in Cluster 5, the Eusko, managed to reach 1.8 % of the population of its claimed territory of circulation (Pinos, 2019), and this one provides 45 % of the overall population of the whole department of Pyrénées-Atlantiques. Besides, the aggregated cluster value of LCs at the departmental level hides the inner differences and heterogeneity within the departments. Finally, the whole metropolitan territory of France itself is spatially heterogeneous. In this part, we are going to deal with the spatial heterogeneity of the country, dividing it to four parts: northeast, northwest, southwest and southeast. We show that, despite the lack of regression model among the multitude of all departments, correlations between departmental aggregated cluster value of local currencies and some explanatory variables may be found when considering quarters of the country.

At first, we wanted to explain the aggregated cluster value of local currencies, as dependent variable, with the following explanatory variables available on the website of INSEE:

- population in 2018
- social spending per capita in 2015
- unemployment rate at the end of 2016
- part of unemployed young population with low education in 2014
- poverty rate in 2014
- part of population geographically remoted from basic healthcare service centers in 2016
- inequality rate in 2017
- rate of social economy employees in 2015
- household waste recycling rate in 2013
- rate of population concerned by a local Agenda 21 program in 2014
- banks and saving cooperatives in 2017
- number of small shops in 2017
- employment centers per 100 000 inhabitants in 2017

The above-listed variables, apart from the population, can all be considered as proxies by which we could make some limited indirect deductions about the socioeconomic and environmental policy conditions that influence the aggregated cluster value of the functioning local currency schemes. However, as written above, our attempt to model the interrelations failed in respect to the whole country, partly due to its spatial heterogeneity. On the other hand, in case of some variables, we can model some sort of relation within certain quarters. We accept the existence of relationship between the observed variables wherever the explanatory power of the model is at least 40% and the result within the given quarter is significantly different from the rest of the country according to the Chow test at significance $p<0.05$.

As we showed previously, there are three major concentrations in the northwest, southwest and southeast. In the northeastern part of the country, there are only few local currencies with low volume, therefore we dispense with this quarter and focus only on the other three quarters.

Northwest:

In case of the northwestern part of France, it proved advisable to pull out the departments of Île-de-France from the correlation analyses because they behave as outliers in most of the cases. The reason is mainly that Paris and its region have a barely comparable weight, in respect of many socioeconomic dimensions, than the rest of the country, while the aggregated cluster value of the local currencies is low there. So, after pulling out the departments of Île-de-France, 20 elements remained in the multitude. Among these elements (departments), the aggregated cluster value of local currencies correlates in a positive way with the population, the number of financial institutions (banks and cooperatives) and small shops, the recycling rate, and it correlates in a negative way with the part of population geographically remoted from basic healthcare service centers (Figure 8). The Chow test shows significant difference in case of these variables between the quarter and the rest of the country (at significance $p<0.05$).

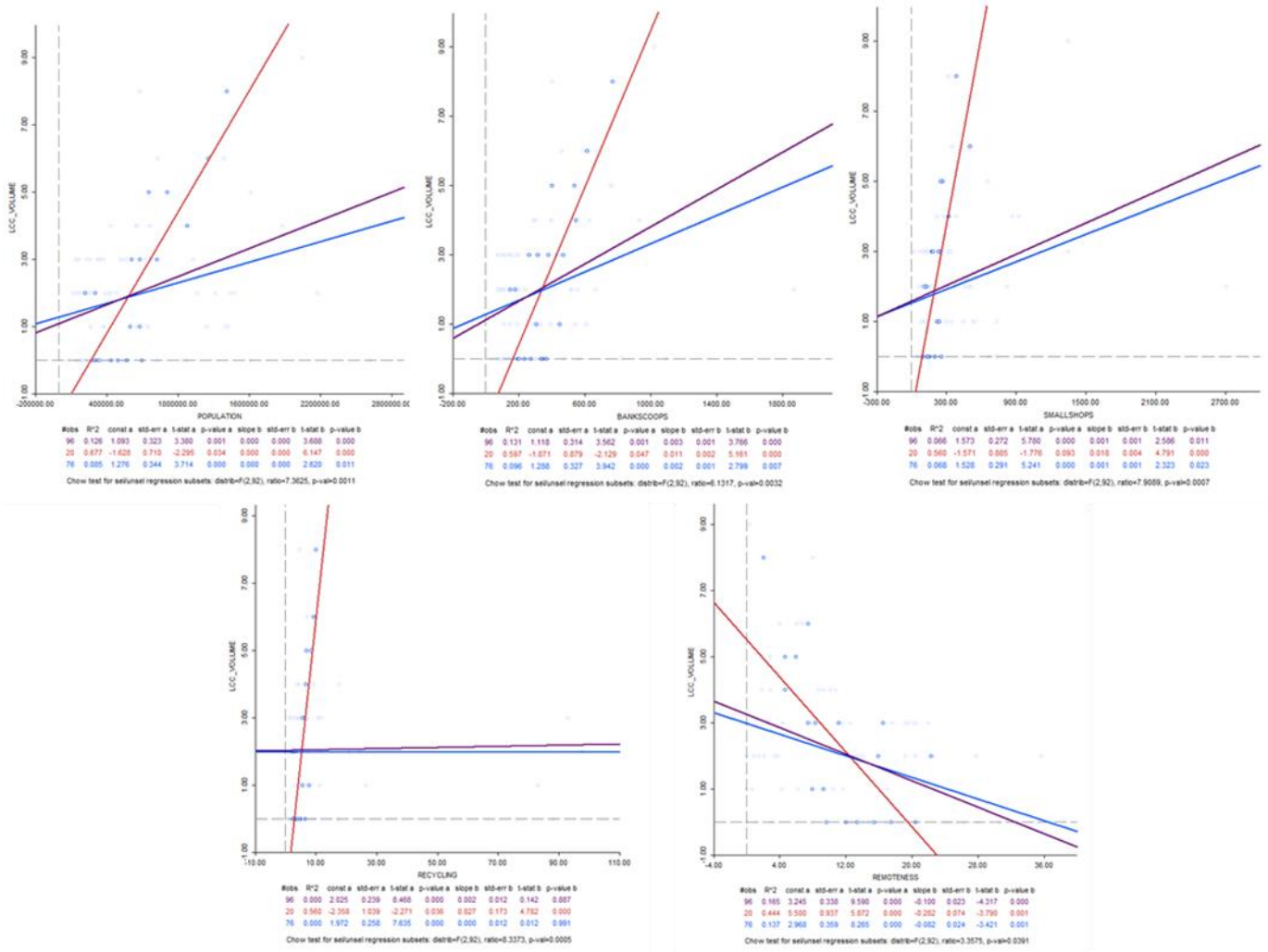

Figure 8: Relationship between the aggregated cluster value of local currencies, as dependent variable, and the population, the number of financial institutions (banks and cooperatives) and small shops, the recycling rate, and the rate of geographically remoted population as independent variables (Notes: in purple: correlation in the whole country; in red: correlation in the northwest; in blue: correlation in the rest of the country). Source: Own editing.

Southwest:

Among the 20 departments of the southwestern quarter, only the inequality rate shows correlation with the aggregated cluster value of the local currencies (which is approximately 40%) and, accordingly, the relation of these variables is significantly different inside from outside the quarter (Figure 9).

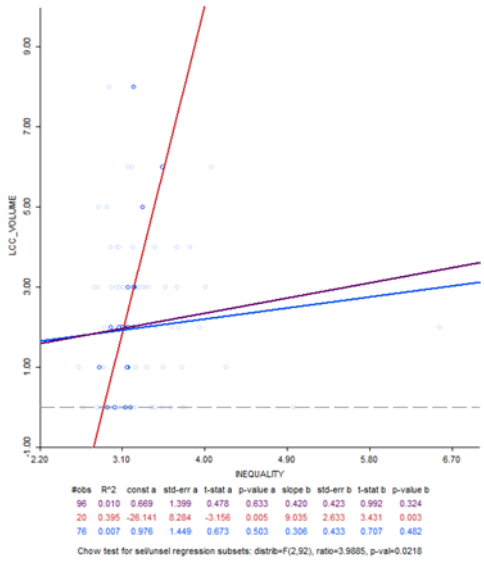

Figure 9: Relationship between the aggregated cluster value of local currencies, as dependent variable, and inequality rate as independent variable (Notes: in purple: correlation in the whole country; in red: correlation in the southwest; in blue: correlation in the rest of the country). Source: Own editing.

Southeast:

After setting aside the two departments of the island of Corsica, 23 elements remained in the sub-multitude of the southeast. As Figure 10 shows, the population and the number of financial institutions prove to be in stochastic relationship with the aggregated cluster value of the local currencies in this quarter.

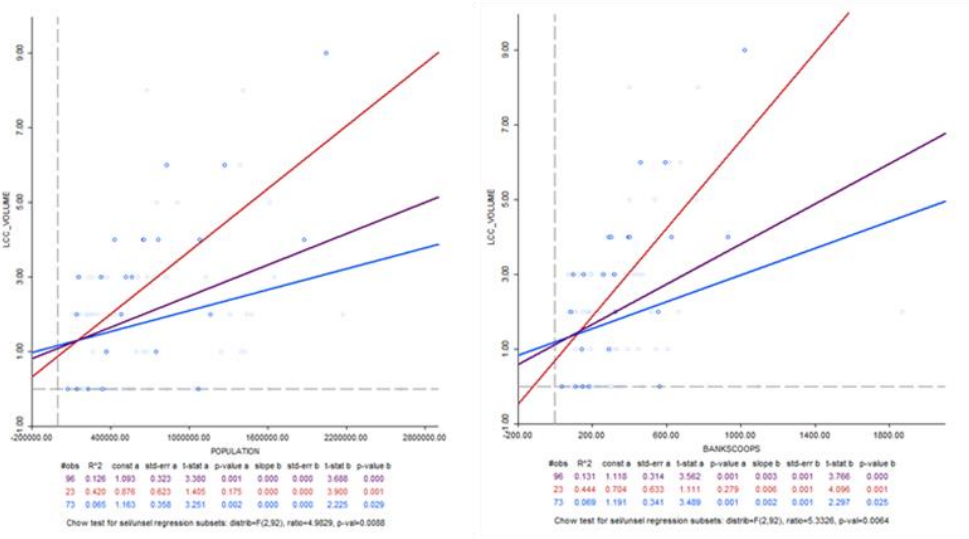

Figure 10: Relationship between the aggregated cluster value of local currencies, as dependent variable, and the population and number of financial institutions as dependent variables (Notes: in purple: correlation in the whole country; in red: correlation in the southeast; in blue: correlation in the rest of the country). Source: own editing.

At the regional level and for a lower number of LCs, Simon (2018) concluded that the number of LCs was positively affected by the population size and the percentage of organic agriculture fields, while it was negatively affected by the income per capita. Our method differs notably with that of Simon (2018): the analysis uses departmental breakdown and it relies on the criteria of aggregate cluster value of LCs in each department. Our findings tend to confirm the positive role of pro-environment indexes as well as that of the overall population (having excluded the departments of the Île-de-France region) and adds a few other explanations, which are diverse in different quarters of the country.

Based on the correlation analyzed above, we can state indeed that different factors are interrelated with the spatial concentration of local currency schemes within different quarters of France. In the northwest, four variables (population, number of financial institutions, number of small shops and recycling rate) are in a positive relation and one variable (rate of population geographically remoted from basic healthcare service) is in a negative one with the aggregated cluster value of LCs per department. This may mean that the use of LCs is notably related to a concern over the environment, to vibrant local economies, in the context of a higher access to conventional financial infrastructure/services, while they are less common in sparsely populated areas. In the southwest, one proxy for the social conditions (inequality rate) implies that mainly social considerations are relevant within this quarter of the country, though it seems impossible to give a straight interpretation to this relationship. In the southeast, geographic and economic conditions are found to be relevant; the bigger the population, and the more there are financial institutions, the higher aggregated cluster value of circulating LCs may be observed.

The spatial heterogeneity of France has been analyzed so far in regard to the aggregated cluster value of LCs per department. We also took into consideration the sum of existing schemes and projects in the making at departmental level, as another dependent variable instead of the aggregate value of circulating local currencies. Yet this can be spatially modeled in a limited way only. As Appendix 2 shows, in this new configuration the chosen dependent variable is spatially auto-correlated in form of spatial lag. This means that the aggregate number of LCs (existing ones and future projects) in the neighboring departments explains to a certain extent the aggregate number of LCs in any given department. While national networks do exist, as the above-mentioned Mouvement SOL and Réseau MLCC, which may support the spreading of LCs all over the French territory, closer social networks between activists may play a major role in the implementation of LC projects in neighboring areas.

We can also see that the aggregated cluster value of the existing LCs, the population and the part of population geographically remoted from basic healthcare services, as independent variables, can only weakly explain the estimated number of future schemes in regard to the whole country. Based on this result, we can forecast that the spatial concentration of the newly implemented local currencies in France will continue in the upcoming years along the lines and trends of the existing schemes. In other words, wherever the number of small LCs (i.e. with a low size index) is relatively high, more launches of new schemes could be observed in the near future, while in those areas where fewer but higher volume LCs operate, the already functioning schemes will most probably grow further instead of the inauguration of new ones. This analysis implies that in the northeast, where both the aggregate number and cluster value of LCs are modest, fewer new projects should be expected to be launched in the near future too.

5. CONCLUSION

The recent wave of local currencies, which spread in a dozen countries in the past decades, proved to be particularly fertile in France since the outbreak of the latest 2008 financial crisis. At the end of 2018, within a decade, 74 schemes were circulating, 11 had been shut down, and there were still dozens of projects under way (of which it is however impossible to assess how many would be launched). The existing local currency systems are diverse not only in terms of their size and volume but also of their spatial distribution. In section 3, we illustrated statistically the spatial autocorrelation of their aggregated cluster value calculated at departmental (NUTS-3 regional) level that is in accordance with the broader socioeconomic context of the territorial conditions within the country.

The spatial autocorrelation motivated our further analysis in section 4. Remaining in departmental breakdown, we tried to model those socioeconomic characteristics that influence the aggregated cluster value of the functioning local currencies, by using regression analysis with different data as proxy variables. We had to conclude that this attempt to modeling failed due to different reasons. However, by dividing the country into four parts spatially and excluding the central region of Île-de-France (which mostly corresponds with the urban area of Paris), we found some correlation between the aggregated cluster value and certain independent variables within three quarters, namely in the northwest, southwest and southeast. The stochastic relationship between the dependent and independent variables differ in these parts, which underpins the observation of a spatial heterogeneity.

The fact that various relations are found within different quarters of France implies that the inner territorial diversity of the country might be concerned separately as well. Three main more specific conclusions can be summarized here: 1) spatial proximities positively affects the evolution of local currencies in terms of number of schemes or volume, 2) the number and the size of LCs is not associated to poverty and crisis at the national level, since they are

generally more developed in areas with stronger socio-economic conditions; however, a higher inequality rate in the southwest is associated to a higher cluster value of LCs, 3) their development is associated to environmental concerns by the population in some parts of France.

Getting more sophisticated picture about the context and background would require further analyses, either statistical and/or econometric ones, with a finer-grained breakdown than the departmental one, and combined with a socio-economic analysis of the various cases of LCs. The main point of this paper is that further research on local currencies must take into account not only the observed variety of their characteristics, but the spatial heterogeneity based on their location as well. Given the limitations of the departmental breakdown to get a fine-grained spatial analysis of LCs, the next step should be to go down to a lower level such as employment areas or catchment areas, that is, a closer level to the territories wherein local currency schemes are actually implemented.

BIBLIOGRAPHY

Blanc, J. (2011) Classifying 'CCs': Community, complementary and local currencies' types and generations. International Journal of Community Currency Research, 15(D): 4–10.

Blanc, J. and Fare M. (2018) Pathways to Improvement. Successes and Difficulties of Local Currency Schemes in France since 2010. International Journal of Community Currency Research 22: 60-73.

Boutet, A. (2017) "Villes moyennes en France : vulnérabilités, potentiels et configurations territoriales", En Bref (Commissariat général à l'égalité des territoires, CGET), December, 45: 1 6.

Community Currencies in Action (Ed.) (2015) People Powered Money. Designing, developing & delivering community currencies. New Economic Foundation, London

Collom, E. (2005) Community currency in the United States: the social environments in which it emerges and survives. Environment and Planning A, 37(9): 1565-1587.

Davezies, L. (2012) La crise qui vient: la nouvelle fracture territoriale, Paris, Seuil.

Fare, M. (2011) The SOL: A Complementary Currency for the Social Economy and Sustainable Development, International Journal of Community Currency Research 15(D): 57-60.

Fourel, C., Magnen, J.-P. and Meunier, N. (2015) D'autres monnaies pour une nouvelle prospérité. Lourmont: Le Bord de l'eau.

Gómez, G.M. (2009) Argentina's parallel currency: the economy of the poor. London: Pickering & Chatto.

Grover, D. (2006) Would local currencies make a good local economic development policy tool? The case of Ithaca Hours. Environment and Planning C: Government and Policy, 24(5): 719-737.

Guilluy, C. (2014) La France périphérique: comment on a sacrifié les classes populaires, Paris, Flammarion

Jacob, J. et al. (2004) HOUR Town – Paul Glover and the Genesis and Evolution of Ithaca HOURS. International Journal Of Community Currency Research, (8)

Kennedy, M., Lietaer, B. and Rogers, J. (2012) People Money. The Promise of Regional Currencies. Axminster

Gatch, L. (2008) "Local Money in the United States during the Great Depression". Essays in Economic & Business History 26: 47–61.

New Economics Foundation (2015) Money with a purpose. Community currencies achieving social, environmental and economic impact. Retrieved from: http://b.3cdn.net/nefoundation/ff0740cad32550d916_o1m6byac6.pdf

Pinos, F. (2019) How could blockchain be a key resource in the value creation process of a local currency? A case study centered on Eusko. In: Going Digital? New Possibilities of Digital-Community Currency Systems. 5th Biennial RAMICS International Congress. Hida-Takayama (Japan).

Plasencia, A. and Orzi, R. (eds.) (2007) Moneda social y mercados solidarios: potencia pedagógico y emancipatorio en los sistemas monetarios alternativos. Buenos Aires: Ediciones Ciccus.

Poveda, T. (2015) L'Eusko, monnaie locale complémentaire du Pays Basque : vers un mouvement local alternatif ? Master Thesis. Pau: Université de Pau et des Pays de l'Adour.

Stodder, J. (2009) Complementary credit networks and macroeconomic stability: Switzerland's Wirtschaftsring. Journal of Economic Behavior & Organization 72(1): 79-95.

Rigo, A.S. (2014) Moedas sociais e bancos comunitários no brasil: aplicações e implicações, teóricas e práticas. PhD thesis. Salvador da Bahia: Universidade Federal Da Bahia.

Rigo, A.S. and França Filho, G.C. de (2017) O paradoxo das Palmas: análise do (des)uso da moeda social no 'bairro da economia solidária'. Cadernos EBAPE.BR 15(1): 169-193.

Saiag, H. (2015) Monnaies locales et économie populaire en Argentine. Paris: Editions Karthala.

Seyfang, G. and Longhurst, N. (2013) Growing green money? Mapping community currencies for sustainable development. Ecological Economics, 86: 65–77.

Simon, M. (2018) Local currencies: The context of their emergence. An explanatory model on the number of local currencies launched in France from 2007 to 2017. Master Thesis. Bergen: Norwegian School of Economics.

Thiel, C. (2011) Complementary Currencies in Germany: The Regiogeld System. International Journal of Community Currency Research 15(D): 17-21.

Vallet, G. (2016) A local money to stabilize capitalism: the underestimated case of the WIR. Economy and Society 45(3–4): 479-504.

Volkmann, K. (2012) Solidarity economy between a focus on the local and a global view. International Journal of Community Currency Research 16: 97-105.

Further sources

Institut national de la statistique et des études économiques (INSEE)

https://www.insee.fr/en/accueil

Mouvement SOL

http://www.sol-reseau.org/

Réseau des monnaies locales complémentaires citoyennes

http://monnaie-locale-complementaire-citoyenne.net/

Appendix 1: The original database

Thanks to Marc Abel, webmaster of the MLCC network website, we could use the basic data which the general map of French local currencies' ongoing experiences, past experiences and projects is built on (names of projects, web-links, GPS data; data retrieved May 18th, 2018).

We checked the data and completed the database regarding the circulating currencies during the year 2018 (thus excluding the local currencies that had been stopped and the projects that had not led to a launch as of end 2018). We added a series of data (money supply, number of providers, number of individual users) gathered through the websites of the schemes, reports from general assemblies and management committees, press releases, articles

from journalists, reports, academic studies and personal observations. As we had many cases with missing information on one or more of the three requested data, we completed the missing information by estimations based on averages calculated for each cluster of local currencies. We estimated that using averages by clusters reduced a fair part of the errors that the use of overall averages would have produced, provided that the sharp differences between local currencies leads to medians much lower than averages. Gathering the 75 cases through 5 clusters helped to solve the problem of the necessary approximation of the data.

Appendix 2: Standard and spatial lag model estimation for the sum of existing schemes and projects underway at departmental level

Independent variables: aggregated cluster value in 2018, population in 2018, part of population geographically remoted from basic healthcare service centers in 2016, and the spatial lag of the dependent variable.

```
SUMMARY OF OUTPUT: ORDINARY LEAST SQUARES
-----------------------------------------
Data set            :map_time_exploration2.dbf
Weights matrix      :File: map_time_exploration2_.gal
Dependent Variable  :   EXIS_PROJ                Number of Observations:          96
Mean dependent var  :      1.5938                Number of Variables   :           4
S.D. dependent var  :      1.3733                Degrees of Freedom    :          92
R-squared           :      0.3725
Adjusted R-squared  :      0.3520
Sum squared residual:     112.420                F-statistic           :     18.2048
Sigma-square        :       1.222                Prob(F-statistic)     :   2.348e-09
S.E. of regression  :       1.105                Log likelihood        :    -143.797
Sigma-square ML     :       1.171                Akaike info criterion :     295.594
S.E of regression ML:      1.0821                Schwarz criterion     :     305.851

------------------------------------------------------------------------------------
            Variable     Coefficient       Std.Error     t-Statistic     Probability
------------------------------------------------------------------------------------
            CONSTANT       1.1072313       0.5078783       2.1801116       0.0318013
          LCC_VOLUME       0.2705860       0.0608124       4.4495192       0.0000241
          POPULATION       0.0000004       0.0000003       1.2392019       0.2184228
          REMOTENESS      -0.0297457       0.0222144      -1.3390267       0.1838611
------------------------------------------------------------------------------------

REGRESSION DIAGNOSTICS
MULTICOLLINEARITY CONDITION NUMBER            9.820

TEST ON NORMALITY OF ERRORS
TEST                             DF        VALUE           PROB
Jarque-Bera                       2         268.485          0.0000

DIAGNOSTICS FOR HETEROSKEDASTICITY
RANDOM COEFFICIENTS
TEST                             DF        VALUE           PROB
Breusch-Pagan test                3          12.811          0.0051
Koenker-Bassett test              3           2.828          0.4189

DIAGNOSTICS FOR SPATIAL DEPENDENCE
TEST                           MI/DF       VALUE           PROB
Lagrange Multiplier (lag)         1          11.398          0.0007
Robust LM (lag)                   1          13.880          0.0002
Lagrange Multiplier (error)       1           3.134          0.0767
Robust LM (error)                 1           5.616          0.0178
Lagrange Multiplier (SARMA)       2          17.013          0.0002

================================= END OF REPORT =====================================
```

```
SUMMARY OF OUTPUT: SPATIAL TWO STAGE LEAST SQUARES
----------------------------------------------------
Data set            :map_time_exploration2.dbf
Weights matrix      :File: map_time_exploration2_.gal
Dependent Variable  :   EXIS_PROJ               Number of Observations:          96
Mean dependent var  :      1.5938               Number of Variables   :           5
S.D. dependent var  :      1.3733               Degrees of Freedom    :          91
Pseudo R-squared    :      0.4406
Spatial Pseudo R-squared:  0.4425

------------------------------------------------------------------------------------
            Variable     Coefficient       Std.Error     z-Statistic     Probability
------------------------------------------------------------------------------------
            CONSTANT      -0.2969652       0.5778587      -0.5139062       0.6073176
          LCC_VOLUME       0.1642338       0.0619998       2.6489420       0.0080744
          POPULATION       0.0000005       0.0000003       1.6671724       0.0954801
          REMOTENESS      -0.0052603       0.0215017      -0.2446452       0.8067311
         W_EXIS_PROJ       0.7971672       0.1880300       4.2395746       0.0000224
------------------------------------------------------------------------------------
Instrumented: W_EXIS_PROJ
Instruments: W_LCC_VOLUME, W_POPULATION, W_REMOTENESS

DIAGNOSTICS FOR SPATIAL DEPENDENCE
TEST                           MI/DF       VALUE           PROB
Anselin-Kelejian Test              1          9.214          0.0024
```

ENDNOTES

i - Only local currencies, as defined above, are considered here. Figures would be very different if all kinds of complementary currencies were taken into account.

Ii - Mouvement SOL. See http://www.sol-reseau.org/

Iii - It notably started to organize yearly encounters between LC promoters and local governments representatives.

iv - Réseau MLCC. See http://monnaie-locale-complementaire-citoyenne.net/

v - See the "Manifeste pour les monnaies locales complémentaires (MLC) et citoyennes (MLC)", http://monnaie-locale-complementaire-citoyenne.net/adhesion-mlcc/

vi - See http://monnaie-locale-complementaire-citoyenne.net/france/

vii - It seems for example that the club of LCs of Cluster 5 would be mostly limited to the Eusko and the German Chiemgauer. Data misses so far to build a general international comparison of LCs' sizes. International comparisons would require correcting data with purchasing power parities.

viii - The départements (departments, or counties) are an administrative subdivision of the French territory, characterized by an elected assembly and a government and by deconcentrated State services as well. The metropolitan (i.e., European) area of France is made of 96 departments.

ix - INSEE: Institut national de la statistique et des études économiques – the central statistical office in France

x - Simon (2018) developed a model of the number of LCs based on the French regions, which are administrative and political subdivisions of the French territory whose space corresponds with a grouping of a certain number of departments. Since 2016, Metropolitan France is divided into 13 regions (they were 22 up to 2015). As local currencies' claimed territories are usually much smaller than region (with the only exception of the Rollon), we considered this level too high for a relevant analysis.

xi - In France, middle towns generally refer to urban areas whose population ranges between 20,000 and 100,000 inhabitants.

xii - Commissariat général à l'égalité des territoires (General commission on territorial equality).

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IMAGE, VALUE AND BELIEF: ASSESSING MONEY THROUGH SIMONDON

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ABSTRACT

Regarding money, the theme of belief is usually formulated in terms of belief in money. The same is true of trust, as well the value of money. One should also raise the question of trust, belief and value through money, or given its presence. This suggestion is inspired by the philosophy of Gilbert Simondon, whose theory of psychic and collective individuation aims at overcoming the dichotomy between methodological individualism and a sociology of vast categories. Simondon's theory has three aspects that could inform the research on money. Firstly, the philosopher raises the question of how groups are constituted: they subsist by the same process that gives birth to individual personalities. A group is defined by the categories it mobilizes, and most importantly, that it produces while constituting itself. Secondly, Simondon underscores the inventive aspect of this emergence of groups, an invention analogous to technical invention, one that redraws the potentials at work in the collective: it can be those of the territory, of the bodies, or of the minds. This inventive character prolongs these potentials as structures, and this is what the collective is all about. Finally, Simondon develops a theory of the "image cycle" that can help us understand the continuity between this indefinite and infinite field of potentials, the typical categorization of groups, and the formation of images and objects (technical, sacred, aesthetic), which crystalize desires, beliefs and hopes of individuals as members of groups. These aspects clarify our wish to alter the way the questions regarding money are enounced, as well as that of the affects it mobilizes and informs. Since money manifests itself in its operation, as image or object, it can be considered to stem from the simondonian image cycle, giving sense to groups and mobilizing potentials, desires and beliefs. We explore and explicit the differences implied by this approach, underscoring Simondon's contributions to social thought. Money is a privileged object for the application of Simondon's thought, because of its plasticity, the vastness of the domains in which it operates, and the magnitude of forces it mobilizes.

KEYWORDS

Money, image, group, belief, value.

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1. ON MONEY AND AFFECT

In all major theoretical traditions, the analysis of money is supported by claims that concern an affective investment or polarity. This underlying connexion to affect often remains implicit, but many authors have stressed the role of desire and faith in the foundation of money. Indeed, in referring to the value of money, evoking confidence or belief seems inescapable, ever since the first properly economic writings of Locke, Hume, Turgot, Quesnay, and Smith (Blanc and Desmedt, 2014), and probably beyond. This is true even of those traditions usually taken to be purely formal (i.e. mathematical): when they come to the point of theorizing money, ultimately they model affective behaviours, such as the aforementioned confidence and belief.

In the mainstream tradition, the value of money is linked to the confidence the public has in it, which is the confidence that the currency in question does indeed have value. In other words, it is the faith that this money will serve to obtain use value. Literally, for Adam Smith, coinage is a matter of "public confidence", and trust between merchants is indispensable for the upsurge of markets (Smith, 1978). This stems from the fact that in the model where money emerges from barter, multilateral exchange cannot be performed directly; one of the main reasons for this impossibility is that there is no way to establish a stable and lasting trust among tradespeople. One cannot believe a seller one does not know, unless with the mediation of a mechanism of trust.

Moreover, in this perspective, money has value not for what it can buy, but for what one is certain to be able to buy eventually. Therefore, belief in money is the belief in the extension of a certain state of affairs, so that the value of money is also a matter of social becoming, even for the most orthodox theories. This trait is even more salient in the theories of money as IOU (I owe you): here, money is the expression of a promise, by which the value one has at a given point corresponds to the value one will hold at the time of settlement.

The aforementioned approaches belong to what Orléan (2016) names "instrumental conception" of money. This hegemonic understanding of the concept is linked not only to neoclassical economics, but also to the Austrian school (Menger, 2009). Authors such as Menger and Von Mises have dedicated books and articles to the task of founding a reliable theory of commodity-money. It is a notion that sustains propositions such as the return to the gold standard – for which many self-declared libertarians advocate – and Hayek's (1990) model of a complete privatization of emissions. In both cases, the core argument resorts to the confidence in money, without which the private emitter would be expelled from the market.

In short, on the one hand, the property of being a scarce commodity is thought to make gold more trustworthy than the so-called "fiat" monies. The latter is dependent on trust (fides) not in the currency itself, but in the government that coins it. In other words, the faith in gold is the negative copy of the faith in the sovereignty of the emitter. On the other hand, the idea of "private money" rests on the argument that competition selects the agents (banks) that are capable of assuring the duration of their money's value, i.e. the agents that are trustworthy.

The thought for which the confidence in money stems from its capacity to perpetuate a certain purchase power, i.e. the value incarnated in commodities, is directly associated to an assessment of social phenomena focussed on individual behaviour, i.e. methodological individualism. The reason for this is that it is founded on a conception of social phenomena as bilateral interactions, where money functions as a cost-reducing instrument. In Hume's words, it is "the oil which renders the motion of the wheels more smooth and easy" (Hume, 1983).

Microeconomic models that derive money from trade, using conceptual tools like the "overlapping generations", reproduce the mechanism with which methodological individualism first faced this task. The younger generation accepts money instead of commodities from the older generation because it believes the next generation will do the same. This sort of belief corresponds to what Aglietta and Orléan (2002) name "methodic trust", i.e. a "mimetic behaviour according to which an individual accepts a currency because others do so" (p. 281). Nevertheless, it is also a belief directed to becoming, which recognizes in money a stabilizing power, beyond the general equivalent. Moreover, in Samuelson's (1958) terms, money is "social contrivance", a technical device for a specific goal.

Orléan (2016) opposes to this instrumental analysis an institutional analysis, envisaging in money the capacity to attach a social sense to value. Money "enunciates publicly what value is and makes it be desired" (p. 39). Thus it expresses "the objectivity of value": this power corresponds to what Aglietta and Orléan (1982, 2002) name "the sovereignty of money". Thus money stabilizes what were singular beliefs in certain values, by fitting them in a social

form of objectified value. Confidence plays a capital role in this approach, as Théret (2016) stresses. Besides methodical confidence, the French authors derive two other forms of confidence: hierarchical and ethical. Hierarchical confidence is linked "to the fact that money is warranted by a collective power that itself inspires confidence" (2002, p. 282). Ethical confidence designates an affection that is more widespread, so that a currency "has ethical confidence when its forms of emission, distribution and circulation seem to assure a society's reproduction respecting its values and norms" (idem).

The institutional approach to money reverses the problem as it was presented by the orthodoxy. Money no longer mediates affects that are directed to commodities, and which ultimately constitute their value. Instead, money determines the form of these affects. It manifests desire. It is the only concrete manifestation of a value that acquires the quality of being "market-like" (marchand). Yet money is still considered through the lens of market relations, so that these relations have logical precedence over it. The individuals under analysis are designated as "market individuals" (individus marchands), so money appears within a certain social configuration, where one finds a certain form of relation. Money is thus the institutional form that manifests the affects linked to this relation.

This point opens a path through which the investigation can be deepened. Can money be envisaged as more that the instrument that gives form to value, as it is manifested in market relations? Can it inform the market relation itself? And also, what is it that gives money the power to inform affect? By means of the institutional approach, it is possible to investigate the foundation of money not only in the social domain, but also in a wider investigation of the power to create forms. In other words, a problem of individuation. It is a philosophical question, spilling over from the usual domains of economic and social organization to reach the problem of how the status of "real" is constituted in these domains.

These questions also apply to the problem of community currencies, since the realization that money carries a sociogenic potential in general suggests the possibility that this potential can have a variety of manifestations. In this case, given the presence of a finance-dominated economy, the question is whether the process whereby money participates in the constitution and perpetuation of this economic configuration can be reproduced so as to participate in the generation of alternative configurations. If so, it is a matter of modulating affects towards a feeling or "sense of community" (McMillan and Chavis, 1986), by means of institutional monetary frameworks.

The theoretical framework underlying this article is that of Gilbert Simondon's philosophy. Simondon was a XXth Century French author who focused on invention, relations and operations. Through this perspective, the task is to think money and the social by means of an ontogenetic paradigm, rather than an ontological one. Instead of questioning the nature of money and market relations, one questions the operations that take place through money.

The following sections analyse Simondon's social thought, in particular regarding the role of groups as operators of belief and values. Simondon also developed important reflections on the concept of community, which are useful for the problem of community currencies. Subsequently, Simondon's theory of the "genetic cycle of the image" will be examined, so as to derive from it the operation of money. The conclusion deals with the question of monetary innovation, particularly regarding complementary currencies.

2. ON THE PSYCHOSOCIAL IN SIMONDON

Gilbert Simondon develops an ontogenetic philosophy of the social in order to avoid two symmetric pitfalls. He names the first "psychologism", which consists in beginning the reasoning with the individual, as an entity complete by itself. This is the case of theories founded on methodological individualism (among which one could name utilitarianism and rational choice). The second pitfall is "sociologism", which consists in a tendency to think in terms of great aggregates, such as classes or institutions, in the attempt to explain individual behaviour (Simondon, 2005, p. 296). Simondon seeks to think information before form, operation before structure; but it is crucial in his method to integrate form and structure afterwards.

In Simondon's philosophy of individuation, a living being is made up of a multiplicity of interactions with its own milieu, so that it subsists not as a solid entity, but as the set of operations perpetuating these interactions. To live is thus to entertain a continual relation between physical energies as such and these same energies as they operate the continuation of life. Psychic and social existence are a particular form of life, consisting in general terms in the

perpetuation of relations among the aforementioned energies (as physical and as living), but also the forms of interaction and flow of energy associated to mental activity and social life.

This epistemologic orientation is crucial for the shift from ontology to ontogenesis: it goes beyond the emphasis on processes, focussing instead on the particular kind of process that makes forms emerge, thus binding the problem of process and the problem of form by means of a genetic method[i]. For problems of social, psychic, political, economic etc. import, in Bardin's (2015, p. 221) words, Simondon tries to "grasp the process of collective individuation that is hidden by its own structural effects": that is, addressing the ontology of the (psycho)social in order to discover the underlying ontogenesis.

The psychic and the social do not constitute two separate kinds of operations, but two perspectives over affects, emotions, meanings, symbols. The psychic cannot be seized in isolation. It is formed through capacities like perception, action, affect and emotion. The distinctive trait of the psyche is that the living being must take into account its own situation in the milieu. This milieu, which carries meanings originated in the living being, takes the form of a world for the individual. Through this relation with a world and with the collective, the living being engenders its own set of meanings as subject. The problem of the social in Simondon can be summarized as the question of how the living being's worlds are configured – worlds of subjects. It is also the question of how the subject is determined, inasmuch as it is a living being with a psyche. It is above all the determination of a relation, a system by which psychic and social, collective and individual, give sense and form to each other.

In his social thought, which he names "transindividual", Simondon wishes to "explain the systematic unity of interior (psychic) and exterior (collective) individuation" (Simondon, 2005, p. 29). It is not a question of simply describing the behaviour of agents in a social configuration (in an economy, for instance). It is also not a question of defining aggregates, institutions, which determine these individuals, as forms and essences, or their action. The social is foremost a field: its polarities change proportionally to the changes in its poles and forces. Simondon completes his claims against "sociologism" and "psychologism" thus (ibidem, p. 294):

> *Society does not really stem from the mutual presence of several individuals, but it is also not a substantial reality that should be superposed to individual beings and conceived independently from them: it is the operation and the condition of operation by which a mode of presence is created that is more complex than the presence of the individual being alone.*

Simondon wishes to explain the processes by which a given configuration takes place, is transformed, defines the modes of actualization for institutions and behaviours. This is why Simondon's thought is compelling for the interrogation of money and, in particular, monetary invention. How can money operate in the determination of affective roles, in the constitution of a system with sellers and buyers (i.e. bodies engaged in these activities), creditors and debtors, banks, companies, salaries (i.e. institutional structures that perform these operations)? How can a change in techniques of creation and usage of monies change the relation between individuals and collective?

Let us examine three elements in Simondon's social thought: groups, belief and value. Simondon distinguishes two kinds of groups: in-groups and out-groups. They help to understand that the link between a group and society is not a relation of parts to a whole, but a way to circumscribe the moments through which social individuation takes place and develops. Unlike the sociologists who coined the terms (Bardin, 2015, p. 94), Simondon states that groups are not a matter of feelings of belonging, rivalry or aspiration. The "in-group" designates a mode of categorical determination for the link between subjects and a social exterior with no precise borders. The group supplies the individual with a category that informs the collective, simultaneously defining a normativity for this subject's behaviour. In sum, "the social consists in the mediation between the individual subject and the out-group by means of the in-group" (Simondon, 2005, p. 294), so that "the social operation lies in the limit between in-group and out-group, rather than that of individual and group" (idem).

It is thus a question of categories engendered through the structuring processes of the collective, i.e. categories as poles around which the acting forces within the collective develop. These forces are psychic, physic, collective, and this is how they acquire meaning for the collective and for the subjects. The individual is determined mostly by the categories that orient her behaviour, so that the in-groups where an individual can be spotted act as a kind of "social body" for her. Therefore, "the individual's own body is stretched to the limits of the in-group; as there is a bodily

scheme, there is also a social scheme, stretching the limits of the ego all the way to the border between in-group and out-group" (idem). Social reality operates through the production and affirmation of categories, but neither the categories, nor the social itself are substances. Categories are apparatuses for individuation and the social expresses the display of these apparatuses.

Therefore, according to Simondon, "for the individual, engagement in society directs her towards the fact of being this or that". In other words, (ibidem, p. 293):

The individual is given goals, roles to choose from; she must tend to these roles, types, images; she is guided by structures she strives to live up to, by adapting to them and achieving them; society presents to the individual being a network of states and roles through which individual conduct must pass.

This means that, when speaking of a social agent, or of an economic agent, what is being evoked are social schemes, social bodies, as in-group bodies. In the section about the image, we shall see that this creation of categories, including markets, depends on the operation of the image, particularly that of money.

What appears as a world existing substantially is merely a "series of mental and behavioural schemes already incorporated in a culture" (ibidem, p. 279). These schemes incite the individual to "order her particular problems according to a normativity already elaborated by other individuals" (idem). As a regulation of behaviours, this normativity is interesting for this investigation. How does it take place? Simondon distinguishes between norms and values. Norms are "internal lines of cohesion for each equilibrium", and values are "lines according to which the structures of a system are translated into structures of the following system". Thus, "values are that by which the norms of a system can become norms for another system". (ibidem, p. 331).

Norms are thus understood as the functional set of regulations that inform behaviour, but only in regard to a certain configuration of the collective. Values are "norms turned into information", i.e. the capacity to reformulate the structures between two systems of norms. Values express the fact that each state is transitory, in opposition to the substantial view of a given normativity as stable value. Nevertheless, the notion of value indicates that "something must last", that becoming is constitutive of being as much as stable structure. Norms orient action immediately, but action always evokes that which overcomes it, which lasts: values. Norms and values are therefore the two extreme terms of the ethical relation, in which the centre is the subjective gesture within a collective containing a normativity of behaviour.

The question of duration, the relation to a past and a future, is capital in the problem of money, as we have seen in the introduction. A value is a group category that lasts. The image of such a category is the image of a period of being, a lasting state: a reality one can believe in. It is the projection of a present promise, the testimony of a past promise, the trace of a credit or a debt. Simondon formulates thus this aspect of his thought (ibidem, p. 287):

The integration of the individual to the social takes place through the creation of a functional analogy between the operation that defines the individual presence and the operation that defines the social presence; the individual must find a social individuation that recovers her personal individuation; her link to the in-group and her link to the out-group are both as the past and the future; the in-group is a source of virtuals, tensions, like the individual future; it is a reserve of presence because it precedes the individual in her encounter with the outside (...).

The categories that define a group determine the modes of behaviour and action for the concerned individuals. This is also the case for market behaviours. Once a category of "market" exists, there is a group of "sellers", a group of "buyers", and categories such as rich, poor, indebted, and so on. Once there are payments, there is the one who pays and the one who gets paid, or the one who must pay and the one who expects to be paid. There are laws to organize these payments, the means of payment, and the records. All these categories modulate the way the bodies define themselves as social individuals, i.e. as subjects. Also, potency reappears in this scheme as purchase power, investment power, budget constraints etc.

When naming the affective link that keeps alive the flow of potency between the group and the individuals, Simondon resorts to the notion of belief. "Belief, as a mode of belonging to a group, defines the expansion of personality towards the limits of the in-group; such a group can be characterized by the community of implicit and explicit beliefs within all members of the group" (ibidem, p. 286). Belief is thus an affective relation that guides the bodies'

potency, both individually and collectively, according to a categorical determination, the operative logic of a group. Belief does not refer to the categories themselves, but to the actions that can take place according to what these categories can determine. For Simondon (idem):

> *In the form of belief, belonging to an in-group is defined as a non-structured tendency, comparable to the future for the individual: it blends with the individual future, but also incorporates the individual's past, as the individual gives itself an origin in this in-group, real or mythical: it is from this group and for this group (...).*

A given group's categories structure the relation to time for subjects and collectives. A group postulates a beginning and it can postulate its own eternity. A body, as subject, is multiplied in categories: "I am" such and such professional, "I am" of this nationality, "I belong" to this or that class or corporation. Such categorical claims cut a topological space in quarters and punctuate the collective's time. Yet they are always beliefs, ordering the agency and bodies within social schemes, directing the dynamics of potency, affect and action.

The question concerning categories also raises the problem of communities, which carries particular importance for the theme of social currencies. Simondon addresses the theme of community in his "Complementary Note" to the thesis on individuation (2005, pp. 503 et seq.). One should have in mind that Simondon writes in the wake of a strong distinction between the notions of community and society, stemming from Tönnies (2001). The distinction operates with "ideal-types", where "community" (Gemeinschaft) refers to the solidity and fixity of groups tied together by blood, tradition, hierarchy etc., and "society" (Gesellschaft) designates the loose bond between atomized individuals, dependent on the sheer force of contracts. Echoes of these ideal types appear in Durkheim's distinction between organic and mechanical solidarity (Durkheim, 2013) and Bergson's Les Deux Sources de la Morale et de la Religion, under the form of a "closed" morality, which stresses internal social cohesion through rigid obligation, and "open" morality, where the link between all humans is mediated by reason or the reference to a universal God. This is the territory where Simondon's analysis of communities dwells, and that he seeks to overcome.

In Simondon, this distinction of essence (types) is transformed into a distinction of drives or tendencies. Every configuration of collective life creates bonds under the form of in-groups, categories that ascribe a sense to action. The tendency to generate such groups expresses Simondon's notion of community: the indeterminateness and multiplicity of potential human activities is reduced, closed, into particular categories, channels for actions, i.e. communities of behaviour, belief, value. But at the same time, these categories can never completely exhaust these potentials, as they reflect the capacity to act of living beings in a collective context, where each individual's activity overlaps with that of the others and relates to dynamisms of the surrounding nature, technology, institutions etc. Every social configuration contains open potentials that can be grasped by invention and evolution, turned into new categories of social life, and engender new forms of communal activity[ii].

The central point is that the same invention that sets in motion the "societal" tendency also generates forms that deploy the communal tendency. In the development and history of any society, communities, in the sense of somewhat closed groups, emerge and dissolve according to the problems they were meant to solve and the potentials to which they gave meaning. As we shall see, the link between invention and community is crucial when one wishes to interrogate the role of social currencies in fostering ways of life set apart from the determinations of the hegemonic economy.

Thus the terms "belief" and "value" designate this process by which modes of behaviour are determined. Yet it is a mediated process. For Simondon, "There is belief only when a certain force or obstacle leads the individual to define and structure her belonging to the groups, under a form that can be expressed in intelligible terms" (ibidem, p. 291). But what is this form that can be expressed? It is language, is it institutional?

When it comes to Simondon, the reply must be searched in the process, instead of substances. Language, institutions (including money) etc. must be envisaged according to the operations they mobilize. Simondon usually thinks in terms of technique, i.e. a potency and a set of gestures that transform the relation between subject and world. The development of the ability to generate such gestures is studied in the "genetic cycle of the image".

3. OPERATIN THE CYCLE OF THE IMAGE

As a philosopher that stresses operations and pursues a genetic epistemology, it is unsurprising that Simondon refers to the image as "an activity", rejecting the tradition that envisages it as a content of consciousness, or as a representation in the sense of the result of the activity of representing. The image, as it emerges in consciousness, is for Simondon only an "extreme case" linked to a "continual thread" (Simondon, 2008, p. 4). What is this thread? For the subject, the activity of the image consists in "generating signs that serve to anticipate, then receive, and finally keep and 'recycle' in action the incident signals received from the milieu", which is "an endogenous gesture, both in the presence of the object (perception) and before experience, as anticipation, or after, as symbol-recollection" (idem).

An image is thus, as a general definition, the first stable form, but also a resonating form, that assures the link between the living being's individuation and its milieu, as well as the subject to its world. Strictly speaking, Simondon uses the term "image" for the establishment of the link itself, which perpetuates through the image as usually understood, "extreme case" of the "continual thread". Thus the different objects falling into the category of image, as symbols, perceptions, figures of thought and discourse, are thus the product of the activity of the image, or imagination.

The "genetic cycle of the image" describes this activity of imagination, traversing the living body biologically understood, as well as the psychosocial being, and reaching the fields of technics, aesthetics and religions. For Simondon, the image plays a capital role in the constitution of objects, inasmuch as they possess meaning for the collective. This claim opens the possibility of applying this philosophy to fields and objects that the philosopher himself never explored, such as laws... or money.

According to Alloa (2015, p. 357), the course on imagination provides "an answer to a theoretical problem that traverses Simondon's entire ontology of individuation (...): how is the link between the individual and its surroundings articulated?" For Alloa, Simondon's social theses cannot be understood without recourse to the mediation of the image cycle, as the image designates the establishment of a central knot, an axis of signification, for the polarized sets in which the living being is implicated. For Simondon, the image is a "relatively independent subset within the living being as subject" (Simondon, 2008, p. 3), which begins with a "bundle of motor tendencies" that anticipate the encounter with the objects of the external world, and as the living being interacts with the milieu, becomes a "reception system for incident signals" that allows the perceptual-motor activities to "take place in a progressive mode" (idem).

In the final stages, "as the subject is once again separated from the object, the image, enriched by cognitive inputs and integrating the affective-emotive resonance of experience, becomes symbol" (idem). The relative independence of the image is itself a genetic process. The body discovers that certain ways of interaction are capable of resonance with the milieu (beginning with the motor tendencies), and these gradually achieve a capacity to inform future activities. Thus the symbol, detached from particular subjects, is "enriched by cognitive inputs": a part of each subject's activities and life spread throughout the social configuration, communicating with the categories of collective life.

The symbol-images ultimately become capable of modifying other images, i.e., images fit in with each other, resonate together, establish relations, in an authentic system of images. They become a universe of their own, as an exteriority that seems absolute in the eyes of the individual subjects. They see the images as abstract, but capable of informing behaviour, giving them meaning, both from the point of view of individual psyche and that of groups. Images, in the stage of symbols, can produce networks of signification, to the point of recovering the relation between collectives and territories, unfolding their world.

The image cycle describes a process that lies at the heart of Simondon's psychosocial reasoning. Images constitute personalities inasmuch as they are categories that define in-groups. The first stages, "motor images" and "perceptive images", describe only the body's capacity to respond to problems originated in the milieu. But the stages of "memory image" (image-souvenir) and "symbol image", as well as the image that becomes an object, relate to a desiring being, a subjective one, who is aware of the problems surrounding her and her situation. It is a subject,

with a world that is a "universe of images", of signification, and open to the possibility of invention. The psychosocial subject, individual or collective, is the being that operates with symbols, images that emerge from invention.

The symbol image also punctuates the living being's territory. Through the image, the living being attributes a potentially sacred sense to rivers, mountains, forests etc., thus establishing a network of meaning that orients its entire lived space. The construction of monuments and gathering squares, in cities, manifests the image of a social space, impregnated with meaning. Bodies and groups are thus marked, either by garment, hairstyle, emblems, distinctions, tattoos, or gender, class, social role markers. For both territories and bodies, it is a matter of determination for affective schemes, as they become concrete under the form of behaviour, gesture, action. It is desire, taking form with a collective meaning. The image articulates and polarizes, it is the central element in a triadic relation with subjects and the world.

Symbols are usually defined as a sign taking the place of another object. For Simondon, this is not precisely the case, as for him symbols are situated in the living being's opening to objects, with its bodily schemes and desire. The symbol image implies a world not only represented or perceived, but polarized, in which the subject relates to the field of objects by means of a tensioned relation: desire, interest, projections. Having become a symbol, the image "condensates a contradictory experience" (Simondon, 2008, p. 124) and presents itself "with the opacity of a true object" (idem).

Lastly, the symbol is such a developed form of imaginative activity that it can become independent of the subject. This is where invention plays a central role: technical objects, institutions, habits, procedures, are all ways by which symbol-images become part of the social reality by acting over the activity of individuals, inasmuch as they are living bodies (performing gestures) as members of communities and groups. Thus the categories that define groups are foremost images, partially independent of the consciousness of individuals, but acting upon them. In a passage of Imagination et Invention dedicated to invention through procedures (or "effective actions") and objects, Simondon writes (2008, p. 178):

> *Of the immense Roman Empire, a masterpiece of organization in several domains, what has reached us, and still acts, is what was created as an object: aqueducts, roads, bridges, homes. If all roads lead to Rome, it is because Ancient Romans invented the construction of roads as stable objects, concretizing the technique of communications, quick traveling, commerce, transportation, and formalizing all the extent of the image of a power seated in Rome, but that extracted its subsistence from the provinces, through the continual circulation of things and humans. This network of objects has outlasted the empire, because it overcame through invention the particular finality of each act, and incorporated nature.*

In this passage, Simondon seems to forget other Roman inventions that outlasted the Empire, particularly in his own country, France: the codification of law, for example. Nevertheless, the passage shows a wide technical network constituted by physical objects relating to both the activity of images (imagination) and invention, giving form and meaning to human activities and values in such a way that both the political system and the economy of the Roman empire rely on it. The roads, stable objects that concretize the image of possible movements, perform an image of power, seated in Rome, as Simondon says.

But these are not all the images that make the Roman road system function, articulating commerce, transportation, subsistence in the provinces etc. Beside the aforementioned legal code, the fear instilled buy the Roman army, the hierarchies between Patricians and plebeians, one most count the denarii, the sestertii and all the means of payment and accounting of debts that constituted the Roman monetary system. Are they images as well?

4. IS MONEY AN IMAGE? WHAT KIND OF INDIVIDUATION WITH MONEY?

There are several reasons why it is worthwhile to approach the question of money from the angle of the image. As we have seen, both in the instrumental and the institutional approaches, money acts by mobilizing belief. Even if it is only a mediator, what it mediates are activities, both physical (as in the exchange of goods) and mental (as in the calculation of budgets). Money also carries the power to render permanent certain modes of affective engagement of bodies as subjects: values.

Ultimately, money can designate both an effectively "coined" object and the symbolic image of values in operation; and when one says "in circulation" it is most certainly an operation. Yet both the informed object and the symbol image result from the activity by which subjects, i.e. psychosocial living beings (bodies) polarize and apply meaning to their affective investment. Inasmuch as it is revealed in its operation, either as image or object, or institution (Hart, 1986), money can be grasped as originating and operating in the Simondonian cycle of the image, applying sense to groups and mobilizing potency, desire, belief. Money confers normativity to gestures, perpetuates values, applies roles, constrains to this or that action, constitutes a network of other images, weaved within reality, particularly in the form of "an economy", whether it is "embedded" or not in a wider social context (Polanyi, 1944).

Money plays a crucial role of "sociation" (Vergesellschaftung), in the vocabulary of Simmel (2009). It operates as a membrane that communicates, and also determines, what is social and what is not social in a given object, body or gesture. It operates in a manner analogous to signs such as emblems of social position or professional role: the body of a priest or military person is at every moment both the body of that role and a body singularly. By claiming that money mediatizes market connections, but also by claiming that it affirms values that constitute markets, what is affirmed is ultimately that money operates an in-group categorization. It affirms that a certain encounter in the collective plan takes place in a certain manner, i.e. according to a certain operative normativity. Indeed it can be a market relation, when money is envisaged as what one usually names a "means of exchange". But this may not be the only possible relation attached to the image of money.

The relation of payment, for instance, is not the same as the exchange relation, even if an exchange contains a payment. To render a service and pay for a service are not barter. It is a connection within the monetary relation, i.e. the activity of money as an image. To pay wages in exchange for labour and to work for a wage are not a simple exchange, as Marx demonstrates. To pay taxes with money, as Chartalists insist, is not the same as to pay them in specie, as the monetary payment contains the obligation to be inserted in a certain market relation, thus performing Smith's description of a society where each person "becomes in such measure a merchant". What is the measure? It is the one presupposed by money, and indeed the quote from Smith is found in the opening paragraph of his analysis of money (1977, Book I, chapter 4).

For the most part, this categorization is not simply a particular case among others. The normativity of money, in the sense of Simondon (how to attribute a price, how to perform a transfer and a payment etc.) mobilizes a sense of value that goes beyond any particular case of valuation of a good, even a commodity. Simmel's Philosophy of Money contains a famous statement according to which money is "a claim upon society" (Simmel, 2004, p. 221), meaning that the kind of confidence needed for using and accepting money surpasses by far the singular exchange where it is used, reaching out to a whole system of values pertaining to a society as it is structured.

Thus money absorbs the very sense of value in a given social configuration, becoming that which realizes "the possibility of all values", Simmel (2004, p. 221) states. Any such absorption is an operation that circulates among the individuals independently of them, but acting upon them, i.e. determining the concrete form and the normativity of their action. Ultimately, money becomes so pervasive and so abstract – i.e. an image that operates and carries value along such a wide variety of possible human activities –, that it becomes, in Blumenberg's interpretation, a metaphor to life itself. "Simmel wrote The Philosophy of Money and discovered everything in his theme that subsequently allowed him to talk about life" (Blumenberg, 2012, p. 251). Simmel, for Blumenberg, wanted to investigate value, and ended up investigating life – at least in the sense of the life one lives in a modern society and city.

The notion of value carried out through money is quite similar to Simondon's definition, that is, as the solidified normativity that can be transposed from a situation or moment to the next. According to Blumenberg (idem, p. 252), for Simmel, "under conditions of exchange, the reciprocity of the will in relation to objects offered up for exchange by the other necessarily implies a relationship of higher subjective value". Consequently, objective equivalences "may be postulated and institutionally fixed in the exchange, but these are no more important than the subjective non-equivalence of the objects exchanged" (idem).

This means that the notion of value is what Simondon would designate a transduction of subjective, personal relations of desire to objects, into a solidified notion that expands beyond the immediacy of each subjective desire into the realm of the social more widely, and that lasts in time. The "subjective desire" corresponds to the problem of

the norm in Simondon as it is the inclination of a psyche and a body, so that value, as generalized, transduced relation, implies the expansion of this inclination, i.e. of a way to act and behave in relation to the objects.

For Simmel, the passage from subjective (over-)valuation to objective value is performed through money, which carries within the "presumption of value" (idem). This description corresponds to the operation of the image in Simondon's sense, as it allows individuals to anticipate the encounter with the object and react to it. And since valuation is a feature of desire and desire can be directed to objects of nearly any other category, the level of abstraction achieved by money makes it a category for a wide-ranging set of activities, potentially all-encompassing[iii].

Is the notion of treasure the same, when it is composed of works of art, stashes of gold, palaces, and when it consists in a bank account, stocks, bonds etc.? The difference between these two forms of treasure goes beyond the question of liquidity, even if it does exist, as was stated by Marx ("absolutely social form of wealth ever ready for use") and Keynes (liquidity preference). As an accumulation of luxury goods, a treasure is not merely a matter of purchase or investment power. It is also a matter of prestige, of having an effect on the affective investment of others. In contemporary capitalist societies, in which wealth is mostly manifested in terms of money and its related institutions, such as bonds and stocks, this role is displaced towards what Veblen named "conspicuous consumption": the fact that wealth and power need to manifest themselves through emblems, the marking of territories with grandiose construction works, and luxury objects, as signs attached to the body.

Thus we encounter, relative to money, the same operation of inscription of sense in territories, communities and minds, that we had seen in Simondon's philosophy of the image, in relation to technical objects. Money informs relations between the collective and the territory through prices such as rent (a central theme for Ricardo and Marx); it informs the relations between classes through wages; it informs the relation to power through taxation and indebtedness. It does not carry the only possible attribution of sense, but it bends other senses in its own direction, being pervasive as it is.

Polanyi (2012) argues that there was no single object or image that fulfilled the different functions attributed to money, in so-called "primitive" societies (this is the designation Polanyi employs) or in ancient empires. Therefore, each activity currently associated with money belonged to a different field. Luxury objects that constituted treasures were not means of payment, signs of debt employed in foreign trade were not used in local markets, artisans were usually paid with coins, but not necessarily soldiers. If today, under the concept of money, one understands an instrument that acts as means of payment, measure of value and intermediate to commerce, this is the result of a series of transformations. Polanyi describes this evolutionary process as that by which a merchant and financial class consolidates its accession to power. The apex of the process occurs with the artificial transformation of money, land and labour into "fictitious commodities".

What is the transformation of an institution, or a symbol, if not the transformation of its capacity to give sense to activities within the collective, while responding to the unresolved potentials the collective faces? The historicity of money is the historicity of the social formations (Simmel's Vergesellschaftung) to which it pertains, and it is the historicity of the activity of conforming images and symbols (imagination) spread throughout a changing collective domain constituted of groups and communities, with their dynamisms of closure and opening, invention and solidification.

Ultimately, in a modern economy, what drives the transformation is the search for profit and rent; this is why Marx insists that the realization of capital can only be monetary. The metamorphoses of capital, for Marx, can only be properly understood as shifts in form around the polarized nucleus of money. In other words, the operation of capital takes place in an economic field whose categories have been redefined by money. Indeed money is not a fixed concept. The network of other images to which it attaches itself, including legislation, agreements between States and corporations globally, institutions such as banks and public treasuries, financial instruments such as derivatives, express an activity of desire and a polarity of the collective field in terms of categories, in-groups, links that take place as the image of money operates.

The activity that brings about such a network is inventive, in the sense that an arrangement that polarizes and directs the affective investment is an invention. Invention is the upper stage of the image cycle, the stage in which the liberated potentials are appropriated by the arrangement and reopen the cycle. Invention is an extension of

imagination, when subjects encounter an open problem, with potentials that defy the schemes already categorized by their images. It is also the opening of a collective towards new configurations, the creation of new group categories and new nodes of activity under the form of communities. In the context of an investigation of social monies, or monetary invention in general, this approach to images and groups provides the opening of several questions. What can be invented in the domain of money? What do we want to invent? What must be changed in the way we conceive of alternative monies in order to attain our chosen goals?

5. CONCLUSION: INVENTING MONIES, MONIES FOR INVENTION

Monetary invention is not a recent theme. It is linked to a desire to adapt money as we know it to an economic reality one wishes to change. On the one hand, as we have seen, surely modern money, which Polanyi named "all-purpose money", is the result of successive inventions that are well known, in particular after the creation of transferable debts in medieval fairs (Aglietta and Orléan, 1984) or the Bank of England (Ingham, 2004). On the other hand, and in another sense, it is the case of money pegged to labour time as imagined by the proudhonians, and which Marx criticized as being illusory: Proudhon never understood that money does not represent labour time, but realizes it in the polarized operation of capital. It is worthwhile to observe that this principle shares its reasoning to some extent with that of contemporary time banks, with the difference that the latter has no aspiration of becoming money. Quite the opposite: a system in which people exchange spare time for certain simple services organizes behaviour schemes that remain explicitly outside the determinations of the monetary system (Degens, 2013).

It is also the case of Gesell's (1958) stamped money, aimed at avoiding that someone hoards money. It is, one could say, an attempt to excise one of the functions gathered in money, according to Polanyi's description (store of value). It is also an attempt to construct an image of money that makes it more akin to commodities properly said, at least those that perish. It is thus an inventive effort to incorporate to the image of money the schemes of becoming to which the traded objects are already subjected. It is a somewhat mimetic idea, having the merit of understanding the distance created by money between the stability of its (postulated) value and the movement of bodies and objects in everyday life. Gesell might have been wrong to believe this distance could or should be suppressed, but he saw clearly that the effects of its existence might not be something devoutly to be wished.

Another case is that of the Wir circle in Switzerland or the C3 (Commercial Credit Circuit), which attempt to fill in the gaps in the commercial operation of money, either by temporarily replacing it with a scriptural form of money, or circulating credits between tradespeople in the intervals of payment corporations allow themselves (Lietaer, 2001). As for local monies, they introduce mechanisms that divert the flows of exchange in such a way that these flows circulate longer within a given region.

The last group of cases that should be evoked is that of digital initiatives like Bitcoin, Ethereum and others. This is a quite vast and ambitious attempt at monetary invention. These technologies seek to create an entirely automatic mechanism of administration of the monies, by which trust and faith are fixedly grounded on a technical device, which ultimately becomes the centre of social operations. Distributed ledger technologies aspire to alter the activity of producing images regarding money, and by extension, our entire conception of how money functions.

All these cases suggest that there are two general trends for monetary invention. Firstly, one that seeks a local, momentary or limited correction in the margins of the functioning of the hegemonic money form. Secondly, one that seeks to transform money entirely: to found a new economy or even a new politics through monetary invention. In the first case, there are time banks, Wir, C3, social monies such as Palma, the Brixton pound and others (Blanc, 2011). The second group contains Bitcoin, Proudhon's project, Gesell's stamped money, a return to the gold standard, and also Hayek's (1990) project of private currencies.

In the first group, it is a matter of steering the potentials that the general monetary system leaves open, in most cases only in order to complement this system. For the most part, these initiatives reclaim the notion of community much more intensely, usually according to Hiller's (1941) definition, i.e., a group with a territorial import. Many of these initiatives manifest the concern with local relations, as opposed to a feeling of subjection to an overwhelming global, corporate economy. This is the case with any circuit that defines itself as a LETS: local exchange trading

system. It is also the case of social banks, of which Brazil offers several examples: Palma, Mumbuca, Solano Trindade etc[iv].

One might question how these initiatives appear under the ontogenetic approach of the "communal tendency" in Simondon. On the one hand, they do come about thanks to an invention: that of a complementary currency and usually a bank to manage it. It also generates a form of identity and coordinated action typical of communities (and groups in general, especially given that contemporary communications technologies weaken the necessity of territorial ties). On the other hand, the kind of loose potentials they are addressing, under the form of a will to change something institutionally in the domain of a given society, are only transformative in a limited way. The Simondonian "community tendency" can be said to have the goal of inventing mechanisms for the perfection of the social configuration as stands, either by including those who are excluded or by countervailing forces of crisis.

The second group's ambition provides a relevant question regarding money as an image that effectively operates the creation of categories for defining in-groups. Can a voluntary, conscious invention of monies, in itself, operate a reconfiguration of the economic system? Can social currencies, stemming from the margins of the economic and political system, be the source of a wide transformation in the way these systems work? Can they polarize the categories that define in-groups and their behaviour differently? Should this indeed be an ambition for social currency projects?

These questions must be addressed as groundwork for a programme of research and action. Polanyi referred to the industrial age as the "age of the machine", and to laissez-faire as humankind's response to the machine. The arrival of the industrial age is a sudden moment in History where the capacity to concentrate and deploy energy grows rapidly. Laissez-faire and the market economy are the systems that arise in order to adapt to these new energies, i.e. these new potentials, norms and behaviours, these new somatic, social and technical schemes. This is the context of the triumph of money as a commodity, which is also all-purpose money, and that today we envisage as being money as such. If complementary currencies are complementary, what they complement is the money of the age of wildly deployed energies; this is also the money that other forms of monetary innovation hope to overcome.

Yet it seems that monetary invention is reaching the point where it will be up to the task of proposing other foundations, and even greater ambitions for alternative monies. We are no longer living in the time of industrial expansion; on the contrary, our time may be witnessing its ultimate limits. The market economy as such, with commodity and all-purpose money, can no longer give answers to the challenges of a time of climate change, inequality, financial capital, overproduction, not only of commodities, but above all of residues.

The ambition to redraw money entirely stemming from social currencies is a matter of invention of categories, in such a way that its "community tendency", rather than balancing the categories of the dominant social configuration, becomes instead an offshoot for designing new social configurations, corresponding to the challenges of the times. In this sense, the idea of "green" or "sustainable" currencies (Seyfang & Longhurst, 2013) and similar are a field to be developed. With a different design, the same concept of "money" that upheld the drive for degradation can become an underlying force of a drive for conservation.

The necessary capabilities are in place for the development of a self-managed economy, with local deliberation, and a corresponding monetary form. Values need to be redrawn, which means that the images must be thought differently, including that of money. The redefinition of values must be such that human gestures, as work and invention, are no longer subject to a monetary mechanism of gain, but can reconfigure the way promises of social categorization are deployed in the future. It is therefore a question of inserting monetary invention in the invention of life itself, within the image cycle, in order to account for what Polanyi named "the livelihood of man".

BIBLIOGRAPHY

Aglietta, M. & Orléan, A. (1984). La Violence de la Monnaie. Paris: Presses Universitaires de France.

Aglietta, M. & Orléan, A. (2002). La Monnaie entre Violence et Confiance. Paris: Odile Jacob.

Arvidsson, A. (2012). General Sentiment. How Value and Affect Converge in the Information Economy. Sociological Review Monographs: 39-59.

Bagwell, L.S. & Bernheim, B.D. (1996). "Veblen effects in a theory of conspicuous consumption. The American Economic Review, 86: 349-373.

Bardin, A. (2015). Epistemology and Political Philosophy in Gilbert Simondon: Individuation, Technics, Social Systems. Dordrecht: Springer.

Bergson, H. (2013). Les Deux Sources de la Morale et de la Religion. Paris: PUF.

Blanc, J. (1998). Free Money for Social Progress. Theory and Practice of Gesell's Accelerated Money. American Journal of Economics and Sociology, 57: 469-483.

Blanc, J. (2011). Classifying 'CCs': Community, complementary and local currencies' types and generations. International Journal of Community Currency Research, 15, 410.

Blanc, J. & Desmedt, L. (dir.) (2014). Les pensées monétaires dans l'histoire: l'Europe, 1517-1776. Paris: Classiques Garnier.

Blumenberg, H. (2012). Money or Life: Metaphors of Georg Simmel's Philosophy. In: Theory, Culture and Society, V. 29, N. 7/8, pp. 249–262.

Caldwell, C. (2000). Why Do People Join Local Exchange Trading Systems? International Journal of Community Currency Research, 4: 1-15.

Cuillerai, M. (2001). La Communauté Monétaire: Prolégomènes à une Philosophie de l'Argent. Paris: L'Harmattan.

Degens, P. (2013) Alternative Geldkonzepte – ein Literaturbericht. Köln: MPIfG Discussion Paper 13/1.

Durkheim, E. (2013). Da Divisão do Trabalho Social. São Paulo: Martins Fontes.

Gesell, S. (1958). The Natural Economic Order, Revised edition. London: Peter Owen.

Hart, K. (1986) Heads or Tails? Two Sides of the Coin. MAN, 21: 637-656.

Hayek, F. (1990). The Denationalisation of Money: The Argument Refined. London: The Institute of Economic Affairs.

Hiller, E. (1941). The Community as a Social Group. In: American Sociological Review, V. 6, N. 2, pp. 189-202.

Hume, D. (1983) Do Dinheiro. Petty, Quesnay, Hume. São Paulo: Nova Cultural.

Ingham, G. (2005). Concepts of Money: Interdisciplinary Perspectives from Economics, Sociology and Political Science. Cheltenham: Edward Elgar.

Knapp, G. (2013). The State Theory of Money. Martino Fine Books.

Keynes, J.M. (1930). A Treatise on Money. New York: Harcourt, Brace and Co.

Keynes, J.M. (1936). The General Theory of Employment, Interest and Money. London: Macmillan Press.

Lietaer, B. (2001). The Future of Money. London: Random House.

Lietaer, B., Kennedy, M. e Rogers, J. (2012). People Money: The Promise of Regional Currencies. Triarchy Press.

Marx, K. (1983). O Capital, v. 1. São Paulo: Nova Cultural.

McMillan, D. & Chavis, D. (1986). Sense of Community: A Definition and Theory. In: Journal of Community Psychology, V. 14, N. 1, pp. 6-23.

Menger, C. (2009). On the Origins of Money. Auburn: Ludwig von Mises Institute.

Mollo, Maria de Lourdes Rollemberg. (2004). Ortodoxia e Heterodoxia Monetárias: a Questão da Neutralidade da Moeda. Revista de Economia Política, 24: 323-343.

Nakamoto, S. (2008) Bitcoin: A Peer-to-Peer Electronic Cash System. [online]. 2008 http://Bitcoin.org/Bitcoin.pdf

Nietzsche, F. (2009). Genealogia da Moral: Uma Polêmica. São Paulo: Companhia das Letras.

Orléan, A. (2016) La Sociologie Économique de la Monnaie. Théories Françaises de la Monnaie. Paris: PUF.

Orléan, A. e Lordon, F. (2007) Genèse de l'Etat et genèse de la monnaie: le modèle de la potentia multitudinis. Revue du MAUSS permanente.

Polanyi, K. (1944). The Great Transformation. The Political and Economic Origins of our Time. New York: Farrar & Reihart.

Polanyi, K. (2012) A Subsistência do Homem. Rio de Janeiro: Contraponto.

Rochon, L.-P. e Rossi, S. (2003). Modern Theories Of Money: The Nature And Role Of Money In Capitalist Economies. Aldershot: Edward Elgar.

Samuelson, P. (1958). An Exact Consumption-Loan Model of Interest with or without the Social Contrivance of Money. Journal of Political Economy, 66: 467-482

Simondon, G. (2005) L'Individuation à la Lumière des Notions de Forme et d'Information. Grenoble: Millon.

Simondon, G. (2008). Imagination et Invention. Paris: PUF.

Simmel, G. (2009). Sociology: Inquiries Into the Construction of Social Forms. Boston: Brill.

Seyfang, G. (2000). The euro, the pound and the shell in our pockets: rationales for complementary currencies in a global economy. New Political Economy, 5: 227-246.

Seygang, G. & Longhurst, N. (2013). "Growing Green Money? Mapping grassroots currencies for sustainable development". In: Ecological Economics, N. 86, pp. 65–77.

Schwarz, A.J. (1987). Money in Historical Perspective. University of Chicago Press.

Schabas, M. et Wennerlind, C. (2011) Hume on Money, Commerce, and the Science of Economics. Journal of Economic Perspectives, 25: 217–230.

Smith, A. (1977). An Inquiry Into The Nature and Causes of the Wealth of Nations. Chicago: University of Chicago Press.

Smith, A. (1978). Lectures on Jurisprudence. Oxford: Oxford University Press.

Théret, B. (2016) Les Trois États de la Monnaie. Approche interdisciplinaire du fait monétaire. Théories Françaises de la Monnaie. Paris: PUF.

Tobin, J. (1961). Money, Capital and Other Stores of Value. American Economic Review, 51: 26-37.

Tönnies, F. (2001). Community and Civil Society. Cambridge: Cambridge University Press.

ENDNOTES

i - Which he also names "allagmatic", the "correlative study of structures and operations" (Simondon, 2005, pp. 559 et seq).

ii - It should be noted that this use of the notions of community and group differs from the classical definition of Hiller (1941). The American sociologist defines groups according to the four categories of membership, admission, distinct norms, and the ascription of roles; and communities as a group with a fifth trait: territorial determination,

i.e. a habitat (that today can be a "virtual" territory). Nevertheless, Simondon preserves the importance of generating sense and the organizing activity as central to the concepts of group and community.

iii - At this point, one might suggest that what renders theories such as Gary Becker's applied microeconomics possible is this potential for generally pervasive categorization that money has.

iv - By initiative of the Palma bank, Brazilian social currency communities created a national community bank network: https://www.institutobancopalmas.org/rede-brasileira-de-bancos-comunitarios/.

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A CONCEPTUAL FRAMEWORK FOR CLASSIFYING CURRENCIES

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ABSTRACT

An impressive variety of new forms of money has aroused in recent decades from various groups of people and various kinds of institutions. These currencies are at the heart of intense debates, which raise important, but often neglected, normative issues. The diversity of their goals, uses and characteristics is so large that it makes some preliminary distinctions necessary. This paper aims at providing a proper background for the discussion of the possible merits and drawbacks of different kinds of currencies. It proposes a classification that demarcates currencies according to how they relate to several crucial normative issues. Its aim is to show, for every type of currency, and as unambiguously as possible, to which side of these controversies it lies.

KEYWORDS

Money, alternative currencies, typologies, classification.

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1. INTRODUCTION

One of the recurring issues in the literature on "complementary" or "alternative" currencies is to identify adequate ways to classify these currencies (Blanc, 2011). Indeed, even if they all constitute a kind of money, they are so numerous and diverse that preliminary classifications appear necessary. Until now, classifications have been mostly designed to discuss the nature of such currencies (Blanc, 2011) or their empirical impact (Place and Bindewald, 2015). However, few works have studied the ethical issues they raise, despite their importance for understanding such currencies. This article aims at fulfilling this gap and proposes a classification that demarcates currencies according to how they relate to three crucial normative issues. Its aim is to show, for every type of currency, and as unambiguously as possible, to which side of these controversies it lies.

The creation, regulation and management of money and monetary policy have raised numerous normative issues (for a review, see de Bruin et al, 2018). However, this article focuses on three of them, which recently have been at the centre of intense debates. Despite its focus on these three issues, the proposed classification can be broadened to other debates, a task that is left for future research. The first issue concerns the legitimate use of the state's coercive power over money. In many countries, the state compels people to accept its legal tender in payment. This could be different, though. People could only use currencies, such as Bitcoin or Local currencies, which nobody is forced to accept in payment. Within the literature on complementary currencies, most authors generally consider that their use is and should remain voluntary (e.g. Blanc, 2018a). Others are more radical and call for the abandonment of all legal tenders (Hayek, 1990). Accordingly, this article draws a first distinction between currencies that are legal tender (official currencies) from those that are not (alternative currencies). In this article, therefore, alternative currency means "non-legal tender" currency (unless stated otherwise)[i]. Second, this article turns to the issue of citizen's participation in monetary policy, which has acquired a central place within the literature (e.g. Meyer and Hudon, 2017). It separates currencies whose creation and circulation are handled under the control of users (participatory currencies, such as LETS or Local currencies) from those whose management is independent of users (non-participatory currencies, e.g. the euro). Finally, the last distinction relates to the question of whether money's purchasing power should be restricted according to some specific criteria (within a local area, or to a certain community for instance). Indeed, these restrictions are at the heart of many Local currencies, LETS or regional currencies. Accordingly, the third distinction distinguishes currencies that may serve as a universal means of payment (universal currencies) from those whose uses are limited according to a certain domain (bounded currencies).

Providing a precise description of how currencies differ may greatly help to structure the ethical discussions on their benefits and drawbacks. On the one hand, as Hodgson (2019) argues, finding precise demarcating criteria is necessary to ensure mutual understanding and efficient communication within a scientific community. Before studying and perhaps evaluating a group of objects, one needs to see how it differs from all other groups as precisely as possible (Hodgson, 2019, p. 207). On the other hand, demarcating criteria cannot be arbitrary. We should seek for relevant criteria that can help scientific inquiry (Olsthoorn, 2017, pp. 153–154). Accordingly, this article proposes criteria that demarcate currencies according to how they relate to specific normative issues.

However, building relevant classifications in social sciences is a complex task. Currencies are social constructs (Ingham, 2004), not natural kinds. They are not independent of social facts, from how people perceive them and judge them (Hacking, 1991). It may, therefore, be impossible to build purely descriptive classifications, detached from people's perceptions and judgements. Moreover, definitions often have "fuzzy boundaries" (Hodgson, 2019, p. 209) that prevent any precise demarcation. These two problems are not overwhelming, though. Even if crystal-clear precision is out of sight, this remains a valuable ideal. That reality is fuzzy should push us towards more conceptual clarity, not less (Hodgson, 2019, p. 209). Similarly, when facts and value judgments are intertwined, one should seek for definitions and classifications which make explicit the normative values at stake, so that these discussions can happen on fair terms (Olsthoorn, 2017, p. 174).

Before turning to the core of this paper, I need to stress that its goal is not to provide a definition of the nature of money "in general". Money as a debt token (Graeber, 2011), or money as a social convention fulfilling a certain number of functions (Tobin, 2008), are possible theories (among others) that fit in with the approach taken here. Despite their numerous disagreements, these theories all recognize that, in modern societies, money is a medium of exchange that is widely accepted within a specific community. This simple definition may not be complete, but it suffices for the purpose of this paper.

The article unfolds as follows. Section 2 reviews examples of existing classifications. Section 3 shows that these classifications cannot provide a suitable background for the ethical analysis of different currencies and discusses general guidelines for building adequate classifications. These include making moral values explicit while seeking precision and exhaustiveness. Section 4 presents a proposal of three new distinctions satisfying these conditions. Section 5 concludes.

2. CLASSIFYING CURRENCIES: A BRIEF REVIEW

Several ways of classifying currencies coexist in the literature and often complement each other. As we shall see, their aim is twofold. They provide a map of existing currencies in an attempt to better understand the extent of their diversity and of their similarities (Blanc, 2011). They also aim at providing a suitable background for the evaluation of their impacts on society and the economy (Place and Bindewald, 2015).

Some authors propose complex classifications, which rely on multiple dimensions and sub-dimensions. Lietaer and Kennedy (2008, pp. 217–242) introduce a multi-layered classification, which relies on five dimensions: the purpose (or the goal) each currency pursues, the specific form that it takes (coin, note, electronic accounts, etc.), the function it serves (means of payment, store of value, unit of account), the way it is created, and its cost recovery mechanism. Joachain and Klopfert (2012) and Martignoni (2012) make similar attempts towards complex full-fledged classifications. Their criteria include the purpose, the basis of trust, the issuance mechanism, the cost recovery mechanism, etc. More recently, Bech and Garratt (2017) imagined an innovative approach (the "money-flower" approach), which is mostly aimed at classifying digital currencies, but which may be applied to other currencies. They classify currencies according to four properties: issuer (central bank or other); form (electronic or physical); accessibility (universal or limited); and transfer mechanism (centralised or decentralised).

Some classifications focus more specifically on so-called "complementary, community and local" currencies. Blanc (2011, pp. 7–9) ranks those currencies according to their order of appearance in time (See also Blanc and Fare, 2016, pp. 4–5). He proposes a four-stage classification. First came the Local Exchange Trading Systems (LETS), a kind of mutual credit systems. In LETS, the account of each member is credited each time this member provides a service and debited each time she receives a service from another member (Servet et al., 1999). Time exchange systems, such as Time Banks, constitute the second generation. In these schemes, the value of goods and services exchanged within a network depends on the time necessary to produce them. The third generation contains local and regional currency schemes, such as the Ithaca Hours or the RegioGeld, which circulate within a confined geographic area. Complex projects, involving both civil society and governments with the aim of promoting environment-friendly behaviour, constitute, according to Blanc, a fourth generation. This includes the NU-project in the Netherlands or the French SOL. Fare (2012) adds a fifth generation to these four: Carbon Currencies. These currencies are similar to carbon quotas but apply to the monetary system (Seyfang, 2009). Finally, in a more recent work, Blanc (2018a) also includes cryptocurrencies, such as Bitcoin, whose creation process and payment system are entirely decentralised and managed through an open-access protocol.

Seyfang and Longhurst (2013) and Michel and Hudon (2015) use a similar classification in order to evaluate the empirical impact of different kinds of currencies. First, they identify service credits (such as Time Banks), which allow members to exchange goods with other registered members of the network based on the time necessary to produce them. The second category includes mutual exchange systems, such as LETS. Local currencies constitute the third category. Their fourth category consists of Barter Markets, a special kind of mutual exchange system. The main example is the Argentinian "trueque" (Gómez, 2009). Members receive a kind of local currency as a form of interest-free loan and can exchange them for goods and services on specific local markets.

Most classifications, however, rely on the purposes (or objectives) at the centre of each currency. A first reason is that many advocates of such currencies often describe them as fulfilling specific goals. Lietaer and Kennedy (2008), for instance, insist constantly on their aim and potential specific benefits. A second reason is linked to the growing importance, within the complementary currencies' research field, of impact assessment programs (Dittmer, 2013;

Michel and Hudon, 2015; Seyfang and Longhurst, 2013). As Place and Bindewald (2015, p. 155) argue, "it is necessary to firstly focus on objectives and purpose before any other typological differentiation, in order to evaluate CCs against their own and diverse targets."

Lietaer and Kennedy (2008, pp. 217–242) separate currencies according to three different purposes: legal tender, for-profit currencies and social (not-for-profit) currencies. Tichit et al. (2016, p. 33) arrive at the same criterion (profit/non-profit) through a textual analysis of web data. Blanc (2007) proposes a similar classification based on the "logic" or "motive" behind each currency. Currencies may be linked to a political motive, a profit motive or a civic motive (Blanc, 2007, p. 32)[ii]. The first kind of currencies relies upon governments, municipalities or other political authorities. The classical examples of such currencies are the euro, the dollar but also local currencies created by local governments. The second kind falls within the domain of private firms. Loyalty schemes, such as Air Miles, belong to this second category. Finally, Blanc calls the currencies that have a civic motive "social currencies". Their purpose is to localize the economy, to foster local exchanges and, simultaneously, to transform the nature of exchanges into a social relation less impregnated by market values. According to the author, a currency is a social currency if it fulfils these three aims, and most importantly the third one (Blanc, 2007, pp. 38–39).

In more recent articles, Blanc clarifies his three-fold distinction (Blanc, 2013, 2018b). Following Polanyi (1957, 2001), he describes three spheres to which a currency can belong: the "redistributive" sphere (the state's sphere, which includes "public" currencies), the sphere of "exchange" (or the market's sphere, which includes "for-profit" or "business" currencies) and the sphere of "reciprocity", which covers relationships within the family and the community. "Social" or "associative" currencies belong to the later sphere. Blanc (2011) distinguishes between three classes of such currencies (which he also calls "civic currencies"), according to their specific aim. "Local currencies" are linked to territorial local projects (such as fostering "local resilience"). "Community currencies" point towards community projects that foster positive social relations and social empowerment. Finally, "complementary currencies" are designed for economic purposes (such as protecting the local economy). Blanc (2011, p. 6) makes clear that "two cases should definitely be removed from an analysis of CCs": national currencies and for-profit currencies established by firms. He justifies this exclusion by emphasizing that "sovereignty, as well as profit motives, do not respect what can be considered a series of major distinctive features of CCs: they are designed and implemented mostly by civil society, mostly locally and grassroots, and mostly in a democratic way" (Blanc, 2011, p. 6).

3. CLASSIFYING CURRENCIES: NEW FOUNDATIONS

The previous section reviewed several attempts to build coherent classifications. These attempts have been successful in at least two ways. On the one hand, complex classifications, such as the one of Bech and Garratt (2017), have brought clarity and insight into the extremely diverse world of money. On the other hand, classifications targeting a sub-set of currencies, such as those of Blanc, have rightly pointed out some key facts about complementary currencies: their diverse purposes, their relations to the public sphere and the sphere of commerce, and their slow evolution throughout history.

This paper aims at complementing these approaches in one specific way: finding a classification that would be able to account adequately for the ethical issues that new kinds of currencies are raising. These include the legitimate use of the state's coercive power over money, the just balance of citizens' involvement in the regulation of money and the possible limits to money's purchasing power, among others (North, 2007; Lietaer et al., 2012). That classification is not aimed at replacing previous ones. Rather, its aim is supplement them by providing a guide to normative inquiry. In this section, I will argue that a classification will satisfy that aim if it can show, for every possible type of currencies, and as unambiguously as possible, to which side of these controversies it lies.

Most existing classifications have a different purpose (i.e. providing a suitable background for evaluating the impact of these currencies). And few of them allow to account for normative issues in a satisfactory manner. Let me take the example of the political legitimacy of monetary policy. Classifications relying on generations do make clear which types of currencies were most wide-spread at different times (or locations) (Blanc, 2007; Seyfang and Longhurst, 2013; Michel and Hudon, 2015). However, they do not allow to differentiate currencies according to how democratic decisions regarding monetary policy are; or to how money ought to be created and circulated.

Similarly, Blanc's more recent attempts, while they provide important insights on the nature of complementary currencies, are unfortunately equally unable to help us for normative inquiry. Blanc delineates three spheres to which a currency can belong: the public sphere, the market sphere and the civic sphere. Which sphere is more legitimate? This is not Blanc's purpose to answer this question: his categories rather relate to the nature of the spheres in which certain currencies circulate, not to the legitimacy of each sphere, or currency. His categories do prove useful for positive inquiry. However, if one wants to ask the question of the legitimacy of money, one would need other classifications.

This section discusses three prerequisites that will greatly help to build such a classification. First, any classification should make explicit the moral values that underlie each currency, or the project behind each currency. The literature and the world of alternative currencies is pervaded by ethical and philosophical issues. Different conceptions of how money should be created or regulated are opposed to each other and would need to be dealt with in a clear and transparent way. Second, we need an exhaustive classification that can apply to the entire set of all possible currencies. That set constitutes what Hodgson (2019, p. 211) calls a "population", that is "social phenomena that exhibit some degree of communality and some degree of diversity". As we have seen in the introduction, currencies are social constructs that count as means of exchange within a given community. They nevertheless differ in important respects, which create a need for classification. Any currency (that is, any item in the set) should be able to find a place within the classification, for one cannot evaluate them normatively if one does not know how they differ. Third, the classification should, as far as possible, delineate unambiguous differences between different types of currencies. Even if finding crystal-clear delineating criteria might be impossible, clear definitions are an essential part of any normative inquiry.

(1) First, a classification should make moral values explicit. The literature provides many examples of (usually positive) normative statements on alternative currencies. Thomas Greco, for instance, insists first on the "symptoms of disease" of the current monetary system (Greco, 2001, p. 4) and on the "disintegration of local economies" (Greco, 2001, p. 34) before introducing all the "fundamental advantages of distinguish[ing] community currencies or mutual credit systems" (Greco, 2001, p. 51). According to Greco, these currencies are able to localize the economy and to rebuild local communities. The framework of Lietaer et al. (2012) is basically the same. The first chapters of the book highlight the actual difficulties with conventional money (Ch. III-VI); then, the last three chapters (VII-IX) invoke alternative currencies as wholly beneficial solutions, especially with regard to local exchanges and community building. Finally, Jean-Michel Servet and his co-authors (1999) call Local Exchange Trading System (LETS) a "good money" which generates a "good economy" (Servet et al., 1999, p. 174). According to them, LETS's main quality is its ability to foster "good" social relations.

These tendencies have had a certain performative effect on the public debate, so that many identify alternative currencies as "good" money and official currencies as "bad" money[iii]. However, despite this abundance of normative statements, most authors do not always clearly put forward the normative principles they seem to support. For instance, Servet and his co-authors (1999) do not delineate precisely the nature of the "good" economy or the "warm" social relations they are praising. This might not be a problem for a literature that focuses on describing the nature or the function of such currencies (Place and Bindewald, 2015). Comparatively, normative inquiry has not received the same level of attention. However, the fact that normative questions impregnate the literature creates an urgent need for clarification of the underlying moral values. This paper wishes to contribute to fulfilling that need.

(2) Second, we need exhaustive classifications that apply to the entire set of all currencies and that show how one particular type of currency differs from all other possible types (Hodgson, 2019). Actually, many authors do not intend to include all currencies into their classifications. For instance, classifications based on generations ignore many types of currencies that do circulate alongside official currencies (virtual currencies and commercial currencies, among others) because their aim is to focus on specific types of currencies (Blanc, 2011). Similarly, Seyfang and Longhurst (2013) and Dittmer (2013) focus on specific complementary currencies in order to evaluate their environmental impact. Selecting specific currencies for one's classifications may be justified when it comes to evaluating the impact of a sub-set of the monetary system on several variables (Place and Bindewald, 2015). However, this is a problem for a classification that aims at guiding normative inquiry, for at least two reasons.

First, it is hard to see how currencies differ (and, especially, how they differ from the euro or the dollar) if some are not included into one's classification. Second, lack of exhaustiveness may lead to ignore the common characteristics and, possibly, the common drawbacks and benefits, of similar currencies. To illustrate these two points, let me take the example of local currencies and of Bitcoin, which, at first sight, may appear at odds with each other.

Bitcoin is a digital currency that is managed on a decentralised basis by (anonymous) users and protected by a set of cryptographic protocols. Sometimes coined a "libertarian dream" (De Filippi, 2014), it has however much in common with other kinds of alternative currencies. Both bitcoins and local currencies may escape government's control. Both give users the possibility to intervene in the creation of money. Moreover, Bitcoin is experiencing many troubles that may well hit other kinds of currencies. It is not exempt from fraud and legal issues (Gruber, 2013), which may also be acknowledged by supposedly "cleaner" currencies. As for Bitcoin, local currencies' supporters may be tempted by tax evasion. For instance, Minuto, a defunct Belgian local currency, was praised by its promoters because it was exempt from taxation (Réseau Minuto, 2016). Comparing Bitcoin and Local Currencies could, therefore, reveal some relevant facts or ideas concerning those legal issues. One could lose an opportunity for new insights by ignoring their similarities.

(3) Third, classifications need to draw precise distinctions between currencies. Ideally, they should point at unambiguous differences between them. Unfortunately, many separating criteria often turn out to be unable to delineate precisely what distinguishes alternative and official, national, currencies. Blanc, for instance, argues repeatedly that only "democratic" and "grassroots" currencies should count as "civic" currencies (Blanc, 2007, pp. 38–39, 2011, p. 6, 2013, pp. 261–262). He stresses the importance of the role of "civil society" in the definition of such currencies. He opposes these currencies to those belonging to the state's sphere (which he calls "public" currencies) and to those belonging to the commercial sphere ("for-profit" currencies). However, some private for-profit currencies such as the WIR have a grassroots and democratic character. What counts as "democratic" and "grassroots" is, after all, subject to various interpretations. The WIR may be seen as an example of a grassroots currency, created by small and medium enterprises. This Swiss currency works as a complement to the Swiss Franc (Stodder, 2009). It allows small and medium enterprises to exchange with each other and to get loans from the WIR Bank. Clearly, the WIR, while grassroots and local, is also for-profit. Its purpose is to increase trade and investment opportunities for Swiss companies. In which category should it be included? The "democratic" and "grassroots" character of CC's does not provide a clear answer to this question. We would need an additional criterion to distinguish between different kinds of currencies.

Classifications relying on the stated purpose of each currency provide a further example of this problem. As we have seen, many authors separate alternative currencies from official currencies on the basis of the "social", "non-profit" or "environmental" purposes the former are supposed to pursue (Blanc, 2007, 2011; Lietaer and Kennedy, 2008; Place and Bindewald, 2015; Tichit et al., 2016). It is undeniable that these various purposes constitute a large part of the attractiveness of these currencies, which may explain their central importance in the literature. As Blanc and Fare (2016, p. 5) argue: "specific values constitute, in fact, the raison d'être of local currency schemes". Each is linked, according to Blanc (2018a, p. 4), to a specific ethical project. Unfortunately, though, these purposes do not draw a clear-cut distinction between currencies. First, "promoting" certain values is different from effectively realizing these values. A currency designed to promote "warmer" social relations or "greener" exchanges may fail to do so (Michel and Hudon, 2015). A "stated" purpose is not a "realised" purpose. Second, most currencies have numerous stated purposes, so that they can fall in numerous different categories. Third, and most importantly, the euro and the dollar are also effective tools for improving social relations or empowering poor and marginal people. After all, transfers in euro finance our health care system, our social security system, our schools and universities. All these schemes clearly constitute important drivers of social cohesion. Even if this is not its stated purpose, should not we consider, therefore, that the euro is a "social" currency? National currencies, too, can have social purposes. They are not univocal drivers of market values. Fourth, the creation of the euro had several purposes. According to the Delors Report for the European Council (1989), these objectives included enhancing European cohesion, improving monetary policy coordination and increasing monetary stability. The euro, in other words, is supported by an "ethical project" (whether or not this project is a success is open to doubts, of course).

This clearly shows that purposes and objectives cannot be the separating criterion between official and alternative currencies. One currency can find its place within several categories, while euros and dollars might become indistinguishable from alternative currencies. If the aim of such classifications is to find a criterion that differentiates alternative currencies from the euro, and from each other, using their stated purpose as a criterion appears quite unhelpful. We need to find other criteria that allow for finer-grained distinctions.

4. HOW CURRENCIES DIFFER: A PROPOSAL

How do these principles affect the classification of currencies in practice? This section offers a proposal satisfying these prerequisites and studies three distinctions, which, as we shall see, relate to important normative issues. First, there is a clear difference between currencies that are legal tender and those that are not (section 4.1). The second distinction lies between currencies whose creation and circulation is handled under the control of users and those which are not (section 4.2). Finally, currencies that may serve as a universal means of payment are distinguished from those whose use is limited to a certain domain (section 4.3). As we shall see, each distinction relates to one normative issue and divides the entire set of all possible currencies into two subsets. These distinctions create ideal-types, which may not account for all the subtle details of reality, but which delineate relevant conceptual differences between currencies and provide important insights regarding monetary policy.

Some of these distinctions are similar to previous proposals. My purpose is to refine them and to make the criteria that distinguish currencies more explicit. Moreover, the door is left open for more distinctions. As Blanc (2011, p. 5) writes, "a typology should be opened enough to let innovations develop: a given typology cannot claim to be the only relevant one, and it might be permanently discussed and transformed." This study is far from complete, but provides a general conceptual framework, able to give precise guidelines for building relevant distinctions, and flexible enough to be "adapted and transformed".

4.1. Official versus Alternative Currencies

A first distinction can be made between currencies which are defined as a legal tender in at least one country, and those which are not. According to the Oxford English Dictionary (2018), a legal tender is defined as all means of payment "which a creditor is bound by law to accept when tendered in payment of a debt". The US Code definition adds that these means of payments should be accepted "for all debts, public charges, taxes, and dues"[iv]. This first distinction sets official currencies apart from alternative currencies.

Though it may seem overly simple, this distinction is essential to understanding alternative monetary proposals, as it emphasises a crucial difference in legal regimes for different kinds of currencies: are people forced to accept a currency in payment, or not? In short, this distinction raises the question of the legitimacy of the legal tender, that is, the question of whether (or not) the state is right to impose a legal tender on people. The state has a special status, compared to other political or economic agents: it has the monopoly on coercive power. It is the only agent that is authorized by law to coerce people into doing certain things (for instance, using a certain currency). This is why official currencies are special: the state can oblige its citizens to accept them in payment.

Within the literature on alternative currencies, most authors generally consider that the use of alternative currencies is and should remain voluntary, without threatening the dominance of official currencies (e.g. Blanc, 2018a). Others are more radical and call for the abandonment of all legal tenders. Hayek (1990), for instance, proposed to deregulate the banking and financial systems and to allow private actors to emit their own currencies. Finally, in stark opposition to Hayek, some authors, known as "modern monetary theorists", in the continuity of the work of Knapp (1921), stressed the importance of having a coercive state to impose a currency over a political territory (e.g. Wray 2012). In connection with this debate, the first distinction differentiates currencies according to whether a political authority (a state, a king, a city council) uses its coercive power to enforce the use of a currency, or not.

The euro and the dollar are obvious examples of official currencies. The euro is legal tender in the EU (see EC Treaty, art. 128) while the dollar is legal tender in the US (see US Code, 31, §5103) as well as in other countries, such as Ecuador. Alternative currencies, on the other hand, include all the means of payments that are not considered as a legal tender in at least one country. This means that vendors or tax authorities are not bound to accept them in payment. In this category, I include Local Exchange Trading Systems (LETS), Local Currencies (such as the Bristol

Pound), Carbon Currencies (aimed at reducing carbon emissions), regional Currencies (valid only in a given region), digital and cryptocurrencies (such as Bitcoin), commercial currencies (Air Miles), Meal vouchers, and the likes.

Alternative currencies may have several types of relations with official currencies. Blanc (2017) has proposed a complex description of how currencies relate to each other. The present discussion is more modest and limits itself to the following concepts: first, some alternative currencies may be converted into official currencies and others may not. Bitcoins, for instance, may be exchanged for euros or dollars, while most Local Exchange Trading Systems forbid this possibility. The value of Bitcoins is constantly fluctuating compared to the dollar or the euro. However, in some cases, the value of alternative currencies is anchored to the value of the euro or the dollar. For instance, the value of one unit of local currency (e.g. Bristol Pound) is generally equivalent to the value of one euro. In fact, we could build a continuum of alternative currencies, depending on how easily we could exchange them for official currencies.

Second, alternative currencies may compete or be complementary to official currencies. A currency is said to complement another when it does not aim at replacing it as the main unit of account and means of payment in a given economy (and conversely for competition). Most alternative currencies do not compete with official currencies, that is, they do not try to replace them (Pfajfar, Sgro and Wagner, 2012). Local currencies, for instance, are a means of exchange as well as a unit of account valid only in a definite area. Usually, they are acceptable in exchange for goods and services produced in that area only. The Bristol Pound, a Local currency in the city of Bristol, does not aim at replacing the Sterling Pound as the official unit of account and means of exchange in the United Kingdom. As Bristol Pound's official website explains: "The Bristol Pound is a complementary currency, designed to work alongside sterling, not replace it" (Bristol Pound, 2015). But alternative currencies sometimes take the place of official currencies (or a large portion of that space), especially in periods of crisis. In Argentina, for instance, regional and local currencies came to play a great role during the financial crisis of 1999-2003 (Gómez, 2009).

4.2. Participatory versus Non-Participatory Currencies

This section deals with the issue of monetary policy, which has raised intense debates in recent years, most notably after the 2007 financial crisis (Turner, 2016). Who should have the power over monetary policy? Should monetary policy be independent of the political realm, or regulated through it? Finding a precise criterion that takes into account the "political" dimension of money is not an easy task. In this section, I propose to differentiate currencies according to whether users can be involved in their management. Participatory currencies give the possibility to all users to take part in their management, while non-participatory currencies forbid this possibility. That involvement varies in degree. Some participatory currencies give more power to their users than others. Some currencies are strongly participatory while others exhibit a lower rate of participation. The strength of participation should be evaluated on a one-to-one basis, as it differs for every participatory currency (I will study two examples below[v]). Users' involvement may also concern different types of decisions, for instance regarding the issuance, circulation, or distribution of participatory currencies. On the contrary, non-participatory currencies keep users away from their governance: the degree of involvement is equal to zero.

The examples of LETS and Bitcoin will help us understand how different participatory currencies exhibit different levels of participation. LETS are managed by the association of all users. Even if some LETS do possess a committee in charge of the daily management of the system, it is usually accountable to all users (Servet et al., 1999). However, most often, such authorities do not exist, and the management of participatory currencies is open to all users. Bitcoin, for instance, is a participatory currency without any central management. The system operates as a peer-to-peer network on a decentralised basis, and each user can participate in its creation and in the control of its operations.

These examples help us to refine the definition of participatory currencies. First, for a currency to count as participatory, the possibility to participate must be open to all users. But users need not use that possibility. For instance, most Bitcoin users do not participate in its development, but they could do so if they wanted to. Moreover, users' participation may take various forms. In LETS, users take part in the training of new members or in the resolution of conflicts between members. Similarly, Bitcoin users can participate in the development of the protocol, or in the creation process (mining). What matters is that participation concerns the management of the currency (its creation, its value, its area of validity, etc.). Finally, the decision process is necessarily a collective process. Participatory

currencies give to all users the possibility to participate, and this involves necessarily a form of collective decision making. If a currency gives the opportunity to participate only to banks, or only to bureaucrats, this cannot be a participatory currency. Of course, some participatory currencies have a board of directors (Local currencies, LETS). Others do not have any central governance process (e.g. Bitcoin). However, for a currency to count as participatory, its board of directors (if it exists) must always be subordinated to the effective control of actual users, which have together the power to alter such central institutions and to take part in the management of the currency.

On the contrary, the management of non-participatory currencies does not involve users. All forms of participation are excluded. The euro and the dollar, for instance, are managed by a central bank (the European Central Bank and the Federal Reserve, respectively) which is formally independent from states and citizens. The design of monetary policy and decisions about the creation process does not involve European or American peoples. Even if national governments select the members of the governing council of their central banks, the latter remain independent from political interference (Dietsch, Claveau, and Fontan 2018, chap. 1). Similarly, firms retain control over the management of commercial currencies. Customers do not have a say over the way they are issued and circulated. Such currencies fall therefore in the category of non-participatory currencies.

Participatory and alternative currencies have much in common. The same distinctions apply to both: participatory currencies may (or may not) be converted into non-participatory currencies, and participatory currencies may (or may not) compete with non-participatory currencies. However, even if most alternative currencies are also participatory currencies, this is not always true. For instance, proposals of carbon currencies that would rely on State agencies are alternative and non-participatory currencies (Seyfang, 2009). Similarly, not all non-participatory currencies are official currencies. A currency can be managed at the level of the State or of another user-independent authority, without being legal tender. Air Miles, for instance, are neither participatory nor official currencies. They are managed by airline companies, not by passengers. Meal vouchers are also a good example: they are circulated by private companies, not by workers.

4.3. Universal versus Bounded Currencies

Universal and bounded currencies constitute the fifth and sixth categories. Bounded currencies are currencies whose possible uses are limited according to some geographic area (i.e., they are valid only for goods produced locally) or to communitarian criteria (i.e., they are valid only for exchanges between members of a community), or to specific goods or services (e.g. Meal vouchers and Air Miles). The relevance of this definition springs from the fact that these limitations are at the core of the arguments in favour of these currencies. These limitations are supposed to bring about certain benefits, in line with certain purposes. For instance, because they circulate only locally, local currencies are supposed to generate a healthier economy and stronger local communities (Curtis, 2003; Gregory, 2009). Similarly, LETS are designed to reinforce solidarity between members (Seyfang, 2002). In a different vein, the restrictive nature of Air Miles, which can only buy products of a specific airline company, is meant to retain loyal customers and constitutes one important instrument of airlines' marketing strategy.

Contrary to bounded currencies, universal currencies can, in principle, buy virtually all goods and services available on any market (legal or illegal), without any intentional limitations nor predefined purposes. Nothing prevents their user from buying a specific good. Nothing encourages them to buy specific types of goods and services either. Of course, there might be some contingent limitations, such as vending machines refusing payments in notes. Even if specific means of payment labelled in dollar or euro might not be accepted everywhere, this does not challenge the universal status of the euro or the dollar as a currency.

One could object that all currencies are bounded in a certain way. In particular, all are circumscribed to a certain geographic area (the euro in the Eurozone, for example). Benjamin Cohen, for instance, has argued that only the dollar can be currently considered as a truly universal currency since its "use dominates most if not all cross-border purposes" (Cohen, 2004, p. 14). However, my criterion does not assess whether a currency is currently universal, but whether it could potentially, in principle, be universal. The moon is currently not for sale, but if it were, one could use universal currencies to buy it. In fact, borders are not the issue here: the euro does not prevent Europeans from buying foreign goods. In this sense, the euro is a universal currency, that is, a currency with which one can possibly buy everything that is for sale, and which does not experience any intentional restrictions.

Note, moreover, that this distinction is different from Polanyi's famous concepts of all-purpose and special-purpose money (Polanyi, 1957, pp. 264–266). Polanyi is differentiating currencies according to the three traditional functions of money (means of exchange, store of value, unit of account). He shows that, historically, some kinds of money – which he calls special-purpose money – have served only one of these uses. For instance, some were only used as units of account, but could not be used as means of payments. Polanyi gives the example of the Assyrian and Babylonian accounting system, which did not rely on money conceived as a means of payment, but only as an accounting mechanism (Polanyi, 1957, p. 265). On the contrary, all-purpose money is suited to all functions[vi]. My distinction, however, does not consider what functions a currency may fulfil but rather whether geographic or communitarian criteria restricts its possible uses.

The obvious examples of universal currencies are the euro, the dollar, and other national currencies. LETS, Local currencies, the WIR, Meal vouchers and commercial currencies are all examples of bounded currencies. The purchasing power of local currencies is bounded according to some geographic area (the territory of a town). LETS, the WIR, and Time Banks are valid only within a specific community of users. And Air Miles and Meal Vouchers can only buy specific goods. It is important to notice that, in all cases, these limitations are justified on the basis that they could impact the economy or the environment in a beneficial way. For instance, LETS, Time banks and Local currencies are usually put forward as agents of social integration (Servet et al., 1999; Oliver Sanz, 2016). According to their promoters, these currencies may also exhibit some economic benefits for local or regional economies (Williams, 1996; Gregory, 2009). Others think they may play an important role in a sustainable economy (Curtis, 2003; Lietaer et al., 2012). Some bounded currencies also play a role in the design of redistributive policies in many countries. For instance, Meal vouchers, which give access to a limited basket of goods, form an important part of poor relief policies in the US (Currie and Gahvari, 2008). Finally, commercial currencies, such as Air Miles, are part of the firms' marketing strategy.

Many participatory and alternative currencies are also bounded currencies, but not all are. Local Currencies, for instance, are alternative, participatory and bounded currencies. They are valid only as a means of exchange for specific goods and services in a specific area. Bitcoin, on the contrary, is not a bounded currency, even if it constitutes an alternative and participatory currency (Kaplanov, 2012, pp. 141–143). Clearly, Bitcoin is not a legal tender and is, therefore, an alternative currency. Moreover, users can participate in its creation. It is, therefore, a participatory currency. However, Bitcoin is not a bounded currency. One could potentially buy any sorts of goods or services using Bitcoins. Bitcoin can potentially be a universal means of payment and its uses are not limited in any way. Of course, Bitcoin, in practice, cannot buy everything. Only a few companies accept it in payment for goods and services. However, this is not a consequence of Bitcoin's architecture or purpose, but a result of its lack of acceptability. Bitcoin, therefore, retains its universal character because, in theory at least, it allows people to buy anything that is for sale.

Finally, an important issue concerns the extent to which bounded currencies can be converted into universal currencies. Meal vouchers, Air Miles and most LETS and Time Banks currencies simply cannot be exchanged for universal currencies, while many local currencies can, but at some cost, which restrains their convertibility. Within the category of bounded currencies, we could, therefore, think of a continuum of currencies, where the place of each currency on the continuum would depend on its capacity to be converted into universal money.

4.4. Summary

The previous sections highlighted three distinctions. The first lies between currencies which are legal tender (official currencies) and those which are not (alternative currencies). The second separates currencies whose management is under the control of users (participatory currencies) from those whose management is independent of users (non-participatory currencies). Finally, the third distinction draws a line between currencies that are universal means of payments, which can buy any sorts of goods and services (universal currencies), and currencies whose use and validity are limited according to certain precise criteria (bounded currencies).

The table below gives examples of currencies classified according to the second and the last distinctions. The first distinction is the most obvious and does not need clarifications. As we have seen in §4.2 above, the strength of participation often differs from one participatory currency to another. Different LETS and different local currencies may be managed differently and might give different levels of powers to their users. Table 1 below does not account for these differences, as every single currency would probably need its own cell.

Table 1. A comparison of different currencies

	Non-participatory	Participatory
Universal	Euro Dollar	Bitcoin
Bounded	Meal Vouchers Air Miles Carbon Currencies	LETS Local Currencies WIR

As I showed earlier, the authority is the ECB for the euro, the FED for the dollar, Voucher and Airlines companies for Meal vouchers and Air Miles, and State agencies in the case of carbon currencies. The euro, the dollar and Bitcoin are universal currencies, which may potentially buy everything, whereas the others are bounded according to some criteria. Meal vouchers and Air Miles are limited to particular goods provided by specific companies (Meals and Airlines tickets). Carbon currencies are limited to goods beneficial in some degree to the environment. LETS and Local currencies are both limited to a certain area or a certain community of users. The validity of the WIR is limited to the goods and services produced by Swiss SME's which belong to the scheme, and each member (or "cooperator") is entitled to one vote in the WIR general assembly and has the right to stand for election to the board of directors (WIR Bank, 2018).

The above distinctions satisfy the criteria that I defended in section 3. Clearly, all currencies (including the euro and the dollar) can find a place in this table. Each distinction relies on one explicit criterion, which divides the entire set of currencies into two mutually exclusive subsets and allows to see clearly how currencies differ from each other, and especially from the euro and the dollar. Moreover, each category is defined as precisely and unambiguously as possible, even if there might remain some grey areas and small exceptions to the general rule. Finally, this classification creates a basis for the discussion of complex normative issues related to alternative currencies.

The first distinction relates to the problem of determining the legitimate use of the state's coercive power. This is a very old question in political theory, which has recently been raised by Raz (1986) and Rawls (2005), among others. According to Rawls' influential account of legitimacy, an authority is legitimate if its coercive political power is justified by reasons that people can reasonably accept. Regarding our present inquiry, the problem concerns the extent to which the state can legitimately compel people to accept one or several currencies in payment (i.e. legal tenders). Hence, the first distinction separates currencies that are legal tenders from those that are not.

The second distinction relates to the issue of who, or which institution(s), should have the power over monetary policy. Should the people be involved in monetary policy decisions? Through which participatory process? Or, on the contrary, should central banks be absolutely independent of all political interferences? Recent years have witnessed increased debates on the possibility and desirability of citizens' involvement in monetary issues (Dietsch, Claveau and Fontan, 2018). Defining precisely the role of an agent in the creation and management of money is a difficult issue. The second distinction is an attempt in that direction. It differentiates currencies according to whether users can take part in their management. It aims to provide a clear guide for deciding which kind of currency to support if one cares about citizen's participation.

Finally, in relation with the third criterion developed in this article, one could wonder whether money's possible uses should be restricted according to some geographic or communitarian criteria, so as to bring about certain benefits. This question is crucial for currencies, such as LETS, regional or local currencies, which are only valid

locally or within a specific community. For instance, local currencies are often praised for their alleged capacity to localize the economy and to strengthen communitarian ties, thanks to their uses being restricted locally (Curtis, 2003; Brooks, 2015). One could ask whether these claims are true, but could also investigate whether it is in line with justice. Should money's purchasing power be restricted locally, or within communitarian bonds, or to certain goods, in order to achieve certain objectives?

All these questions are of utmost importance. The above three distinctions allow to frame political issues in adequate terms, as unambiguously as possible, and to discuss adequate policy proposals based on the relevant differences between currencies. In that sense, they help set the ground for further ethical debates on these issues. Current research in financial ethics has focused on big institutions, such as central banks (Dietsch, Claveau, and Fontan 2018), or trendy issues, such as Bitcoin (Angel and McCabe, 2015; Lambrecht and Larue, 2018). However, few articles have focused on alternative currencies (for exceptions, see Mildenberger, 2019; Larue, 2019). This might be the subject of further research.

5. CONCLUSION

This article reviewed several ways of classifying currencies and studied some problems that frequently appear in this literature. It then introduced three distinctions, in an attempt to account in a satisfactory manner for the normative issues that these currencies are raising. Each distinction is connected to one normative question. Each allows seeing on which side of these debates each type of currency lies. The first separates currencies that are legal tender in a definite area from those which are not, and relates to the question of the use of coercive power by the state. The second separates currencies whose management is independent of users from those whose management rests in the hands of users. This second distinction relates to the issue of citizen's participation in monetary policy. The third separates currencies that, potentially, can buy anything from those whose uses are restrained according to geographic or communitarian criteria, or to some specific goods. That last distinction is linked to the question of whether money's purchasing power should be restricted according to some specific criteria.

The aim of these distinctions is to provide a classification of all currencies that maintains the possibility for precise, transparent and exhaustive comparisons, and which establishes the basis for a well-argued debate on the norms and values that influence the choice of a currency or the regulation of money. While these three distinctions certainly do not match this aim perfectly, they nevertheless constitute a conscious attempt in that direction. Determining clearly how a currency differ from another may improve the debates on what is the good or the right currency.

BIBLIOGRAPHY

Angel, J. J. and McCabe, D. (2015) 'The Ethics of Payments: Paper, Plastic, or Bitcoin?' Journal of Business Ethics 132(3), pp. 603 611.

Bech, M. and Garratt, R. (2017). 'Central Bank Cryptocurrencies'. BIS Quarterly Review, September, pp. 55–70.

Blanc, J. (2007) 'Les monnaies sociales : dynamique et logiques des dispositifs', Revue internationale de l'économie sociale, (303), pp. 30–43.

Blanc, J. (2011) 'Classifying "CCs": Community, Complementary and Local Currencies', International Journal of Community Currency Research, 15(D), pp. 4–10.

Blanc, J. (2013) 'Penser la pluralité des monnaies à partir de Polanyi : un essai de typologie', in Hillenkamp, I. and Laville, J.-L. (eds) Socioéconomie et démocratie : l'actualité de Karl Polanyi. Toulouse: Erès, pp. 241–270.

Blanc, J. (2017) 'Unpacking monetary complementarity and competition: a conceptual framework', Cambridge Journal of Economics, 41(1), pp. 239–257.

Blanc, J. (2018a) Les monnaies alternatives. Paris: La Découverte.

Blanc, J. (2018b) 'Making sense of the plurality of money: a Polanyian attempt', in Gómez, G. M. (ed.) Monetary plurality in local, regional and global economies. Abingdon: Routledge, pp. 48–66.

Blanc, J. and Fare, M. (2016) 'Turning values concrete: the role and ways of business selection in local currency schemes', Review of Social Economy, 74(3), pp. 298–319.

Bristol Pound (2015) What is the Bristol Pound?, Bristol Pound. Available at: http://bristolpound.org/what (Accessed: 22 April 2015).

Brooks, S. (2015) 'How Green is Our Money? Mapping the Relationship between Monetary Systems and the Environment', International Journal of Community Currency Research, 19 D, pp. 12–18.

Code of Laws of the United States of America, available from http://uscode.house.gov/ (accessed 13 June 2019)

Cohen, B. J. (2004) The future of money. Princeton, N.J: Princeton University Press.

Consolidated Version of the Treaty on the Functioning of the European Union. Available from http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A12012E%2FTXT (accessed 13 June 2019)

Currie, J. and Gahvari, F. (2008) 'Transfers in Cash and In-Kind: Theory Meets the Data', Journal of Economic Literature, 46(2), pp. 333–383.

Curtis, F. (2003) 'Eco-localism and sustainability', Ecological Economics, 46(1), pp. 83–102.

De Bruin, B., Herzog, L., O'Neill, M. and Sandberg, J. (2018). 'Philosophy of Money and Finance'. In The Stanford Encyclopedia of Philosophy, edited by Edward N. Zalta.

De Filippi, P. (2014) 'Bitcoin: a regulatory nightmare to a libertarian dream', Internet Policy review, 3(2). Available at: http://policyreview.info/articles/analysis/bitcoin-regulatory-nightmare-libertarian-dream (Accessed: 12 September 2016).

Dietsch, P., Claveau, F. and Fontan, C. (2018) Do central banks serve the people? Cambridge: Polity Press (The future of capitalism).

Dion, C. and Laurent, M. (2015) Demain. Mars Films (France).

European Council (ed.) (1989) Report on economic and monetary union in the European Community. Luxembourg : Washington, DC: Office for Official Publications of the European Communities.

Fare, M. (2012) Monnaies sociales comme outil de développement soutenable. Institut Veblen pour les réformes économiques.

Gómez, G. M. (2009) Argentina's Parallel Currency: The Economy of the Poor. London: Pickering & Chatto Publishers (Series on Financial History, 11).

Graeber, D. (2011) Debt the first 5,000 years. Brooklyn, N.Y.: Melville House.

Greco, T. H. (2001) Money: understanding and creating alternatives to legal tender. White River Junction, Vt: Chelsea Green Pub.

Gregory, L. (2009) 'Spending Time Locally: The Benefit of Time Banks for Local Economies', Local Economy, 24(4), pp. 323–333.

Gruber, S. (2013) 'Trust, identity & disclosure- are bitcoin exchanges the next virtual havens for money laundering and tax evasion?', Quinnipiac Law Review, 32(1), pp. 135–208.

Hacking, I. (1991) 'A Tradition of Natural Kinds', Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition, 61(1/2), pp. 109–126.

Hayek, F. A. von (1990) Denationalisation of money: the argument refined. 3rd edition. London: Institute of Economic Affairs.

Hodgson, G. M. (2019) 'Taxonomic definitions in social science, with firms, markets and institutions as case studies', Journal of Institutional Economics, 15(2), pp. 207–233.

Ingham, G. (2004) The Nature of Money. Cambridge: Polity.

Joachain, H. and Klopfert, F. (2012) 'Emerging trend of complementary currencies systems as policy instruments for environmental purposes: changes ahead?', International Journal of Community Currency Research, 16 D, pp. 156–168.

Kaplanov, N. M. (2012) 'Nerdy Money: Bitcoin, the Private Digital Currency, and the Case Against Its Regulation', Loyola Consumer Law Review, 25(1), pp. 111–174.

Knapp, G. F. (1921) Staatliche Theorie des Geldes, München: Duncker & Humblot. 3rd edition.

Kuroda, A. (2008) 'What is the complementarity among monies? An introductory note', Financial History Review, 15(1), pp. 7–15.

Lambrecht, M. and Larue, L. (2018). 'After the (virtual) gold rush: is Bitcoin more than a speculative bubble?' Internet Policy Review 7(4)

Larue, L. (2019) 'Making sense of alternative currencies'. PhD Thesis. Université Catholique de Louvain.

Lietaer, B. A. et al. (2012) Money and sustainability: the missing link. Axminster: Triarchy Press.

Lietaer, B. A. and Kennedy, M. (2008) Monnaies régionales de nouvelles voies vers une prospérité durable. Translated by V. Guimard. Paris: Editions Charles Léopold Mayer.

Martignoni, J. (2012) 'A New Approach to a Typology of Complementary Currencies', International Journal of Community Currency Research, 16 (A), pp. 1–17.

Meyer, C. and Hudon, M. (2017) 'Alternative organizations in finance: Commoning in complementary currencies', Organization, 24(5), pp. 629–647.

Michel, A. and Hudon, M. (2015) 'Community currencies and sustainable development: A systematic review', Ecological Economics, 116, pp. 160–171.

Mildenberger, C. D (2019). 'Against Monetary Utopias'. Paper presented at the Money Workshop. Groningen.

North, P. (2007) Money and Liberation: The Micropolitics of Alternative Currency Movements. Minneapolis: University of Minnesota Press.

Oliver Sanz, E. (2016) 'Community currency (CCs) in Spain: An empirical study of their social effects', Ecological Economics, 121(Supplement C), pp. 20–27.

Olsthoorn, J. (2017) 'Conceptual Analysis', in Blau, A. (ed.) Methods in analytical political theory. Cambridge: Cambridge university press, pp. 153–191.

Oxford English Dictionary (Online edition) (2018). Oxford: Oxford University Press. Available at: http://www.oed.com (Accessed: 19 April 2018).

Pfajfar, D., Sgro, G. and Wagner, W. (2012) 'Are Alternative Currencies A Substitute Or A Complement To Fiat Money? Evidence From Cross-Country Data', International Journal of Community Currency Research, 16 (D), pp. 45–56.

Place, C. and Bindewald, L. (2015) 'Validating and improving the Impact of Complementary Currency Systems through impact assessment frameworks', International Journal of Community Currency Research, 19, pp. 152–164.

Polanyi, K. (1957) 'The economy as an instituted process', in Arensberg, C. M., Polanyi, K., and Pearson, H. W. (eds) Trade and market in the early empires: economies in history and theory. Glencoe (Ill.): Free press, pp. 243–270.

Polanyi, K. (2001) The Great Transformation: The Political and Economic Origins of Our Time. 2° edition. Princeton: Beacon Press.

Rawls, J. (2005) Political liberalism. Expanded Edition. New York (N.Y.): Columbia university press (Columbia Classics in Philosophy, 4).

Raz, J. (1986) The morality of freedom. Oxford: Clarendon Press.

Réseau Minuto (2016) La minuto. Available at: http://minuto.be/ (Accessed: 21 April 2016).

Servet, J.-M. (1993) 'L'institution monétaire de la société selon Karl Polanyi', Revue économique, 44(6), pp. 1127–1150.

Servet, J.-M. et al. (1999) Une économie sans argent: les Systèmes d'Echange Local. Edited by J.-M. Servet. Paris: Éditions du Seuil.

Servet, J.-M. (2007) 'Le principe de réciprocité chez Karl Polanyi, contribution à une définition de l'économie solidaire', Revue Tiers Monde, (190), pp. 255–273.

Seyfang, G. (2002) 'Tackling social exclusion with community currencies: learning from LETS to Time Banks', International Journal of Community Currency Research, 6. Available at: https://ijccr.net/2012/05/23/tackling-social-exclusion-with-community-currencies-learning-from-lets-to-time-banks/ (Accessed: 27 November 2017).

Seyfang, G. (2009) Carbon currencies: A new gold standard for sustainable consumption? CSERGE Working Paper EDM 09-07. University of East Anglia.

Seyfang, G. and Longhurst, N. (2013) 'Growing green money? Mapping community currencies for sustainable development', Ecological Economics. (Sustainable Urbanisation: A resilient future), 86, pp. 65–77.

Stodder, J. (2009) 'Complementary credit networks and macroeconomic stability: Switzerland's Wirtschaftsring', Journal of Economic Behavior & Organization, 72(1), pp. 79–95.

Tichit, A., Mathonnat, C. and Landivar, D. (2016) 'Classifying non-bank currency systems using web data', International Journal of Community Currency Research, 20, pp. 24–40.

Tobin, J. (2008) 'Money', in Durlauf, S. F. and Blume, L. E. (eds) New Palgrave Dictionary of Economics. Second Edition. Basingstoke: Palgrave MacMillan.

Turner, A. (2016) Between debt and the devil: money, credit, and fixing global finance. Princeton: Princeton University Press.

Williams, C. C. (1996) 'Local exchange and trading systems: a new source of work and credit for the poor and unemployed?', Environment and Planning A, 28(8), pp. 1395 – 1415.

WIR Bank (2018) Statuts de la Banque WIR. Basel: WIR Bank, p. 11. Available at: https://www.wir.ch/fileadmin/user_upload/Dokumente/Dokumente/statuten-wir-bank-genossenschaft-fr.pdf (Accessed: 20 March 2019).

Wray, R. L. (2012). Modern Money Theory: A Primer on Macroeconomics for Sovereign Monetary Systems. Basingstoke: Palgrave MacMillan.

ENDNOTES

i - The category of « alternative currencies" is used in other classifications by other authors, or in other contexts as a generic term. This should not be confused with the meaning it has here, i.e. a currency that is not legal tender.

ii - "Les monnaies à logique politique », « les monnaies à logique lucrative » and « les monnaies à logique citoyenne ». My translation.

iii - See for instance the movie "Demain" (Dion and Laurent, 2015) and the findings of Blanc and Fare (2016).

iv - Some countries have limited legal tender instruments: in Britain, for instance, the 50 pence piece is legal tender only for sums of up to 10 pounds sterling. These small exemptions do not threaten the more general rule that sterling pounds are official currency in the UK.

v - For a study of collective decision making in alternative currencies, see Meyer and Hudon (2017).

vi - See Blanc (2013), Kuroda (2008) and Servet (1993, 2007), for a contemporary reconsideration of Polanyi's ideas on all-purpose and special-purpose money.

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THE FINANCING OF INVESTMENTS IN LONG-TERM ASSETS AND THE INVERSE MATURITY OF DEPOSITS IN THE COMMODITY-MONEY-COMMODITY TYPE OF MUTUAL CREDIT

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ABSTRACT

This paper focuses on the financing of investments in long-term assets in the Commodity-Money-Commodity (komoko) monetary system (KMS). The KMS is a special, currently still theoretical version of mutual credit, first introduced in the 2016 summer issue of the IJCCR journal. In dealing with capital goods financial circulation is indispensable. However, financial circulation is prone to speculation, a practice not at all endorsed by CC (complementary and community currencies) communities. Separation of the real and financial exchange circles introduced in the original KMS paper is a method by which community currencies can dispense with speculation and other forms of potentially harmful financial circulation. Separation of the real and financial exchange circles proposed by the original KMS paper is based on a rigid, rule-based barrier between the real economy - which produces new goods and services on one side, and the financial economy - which deals with the exchange of old durable and capital goods on the other. This separation method may, however, be potentially either too cumbersome for businesses or too easy to evade. An improved method of separation of the exchange circles is proposed which basically eliminates the elements of the rule-based barrier and substitutes it with a new feature called inverse maturity of deposits. To implement inverse maturity of deposits, the KMS evolves from a plain ledger-based currency into a form that resembles accounts payables and accounts receivables. This new form of KMS which tracks the maturity of credits (demand deposits) puts the KMS in stark contrast to the existing fractional reserve banking which tracks the maturity of loans i.e. debits. The paper discloses how the KMS, featuring inverse maturity of deposits, dispenses with excessive financial circulation without impeding the real circulation and at the same time supports the use, exchange and production of capital goods. This renders KMS a currency that can crowd out legal tender.

KEYWORDS

Mutual Credit, Finance and Investment, Velocity of Money, Inverse Maturity, Liquidity

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1. INTRODUCTION

In (Kavčič, 2016), Commodity – Money – Commodity (komoko) currency (abbreviated komoko), or in longer form the komoko monetary system (KMS), was disclosed. The KMS is a special implementation of mutual credit, currently still just a theoretical one. Some authors contribute the origin of the modern implementations of mutual credit to Keynes and his proposition by (Schumacher, 1943) for international credit clearing as the basis of the international trade and finance. Yet, it was E.C.Riegel, a self-educated author, who was the first to propose using a currency based on what he called mutual credit for the national economy. In (Kavčič, 2016), the KMS is compared to mutual credit as it was first defined by Riegel (1978 posthumous) and further developed by Greco Jr (2013). This original form of mutual credit is hereinafter referred to as MCSG. When compared to MCSG, the KMS features three distinctive properties. The first is monetary separation between the real circulation on the one hand and the financial circulation on the other, carried out in the form of explicit restrictions on trading with old goods for businesses in the KMS as compared to no explicit restrictions in the original form of mutual credit (MCSG). The second distinctive property is overdraft limit calculation based on the past period balance of transactions as opposed to overdraft limit calculation based on past sales figures. The third distinctive property is the mandatory periodical clearing of business accounts.

It is quite obvious that the present day national economies, which are based on fractional reserve banking (hereinafter denoted as FRB), suffer from the ever growing financial circulation which impedes the real circulation or as Keen (2011) puts it: "finance destabilises the real economy". Yet, it is quite obvious that any real economy could not possibly function without financial circulation. In particular, financial circulation is indispensable when dealing with capital goods. Schroeder (2018) emphasises the importance of managing and supporting the exchange of capital goods by CC currencies. Other papers (Filho, Rigo, & Silva, 2013), (Stodder & Lietaer, 2016), (Littera, Sartori, Dini, & Antoniadis, 2017) that deal with some of the more successful and prominent present day CC currency implementations (Banco de Palmas, Brasil; Sardex, Italy; WIR, Switzerland respectively) do not expose the deficiencies of these currencies in terms of financing of long-term assets. All the mentioned CC currency systems provide financing, i.e. loans with longer periods of repayment in addition to what can be equated with overdrafts. The basic fact of these currencies is that they all exist in parallel with official currencies (legal tender). Even businesses that use CC currencies use them only as a minor complement to the use of legal tender. For example, as mentioned by some authors (Stodder & Lietaer, 2016), total WIR Balances of 612 million in SFr, represent only one-quarter of one percent of the basic Swiss money supply for 2007, though the penetration of WIR was quite high - 16% in terms of the number of businesses that used it in 2005. Others (Motta, Dini, & Sartori, 2017) report in similar vein that: “Sardex mediated a trade volume of 51m Euro, corresponding to almost 0.2% of the Sardinian gross domestic product (GDP) in 2013”. Some authors (Stodder & Lietaer, 2016) describe the ‘standard countercyclical pattern’ of WIR-exchange, based on which they see WIR as a relevant contributor to the stability of the Swiss economy. Yet, even considering WIR as the strongest CC circle, let alone the other CC initiatives, their main impact and potential economic benefit does not come from their monetary advantage, but rather from the social value that they foster. None of the existing CC currencies are designed to bear the brunt of economic activity in a community, be it local, regional or national, even though the aspirations of some of the CC currency proponents may be very much in favour of doing so. Assuming responsibility for the economic activity of a community would imply that CC currency could ‘crowd out’ legal tender and thus isolate the economic agents from the disturbances and ills pertinent to the present day national or supra-national fiat currencies on the one hand, and for local or regional authorities to start taking care of liquidity, employment, inflation and GDP on the other. This is rather a utopia. However, life - political in particular - is full of surprises and discussing a CC currency which promises to support the brunt of community exchange may one day be more than just of theoretical interest.

To steer GDP, employment and inflation - even on a local scale, let alone regionally - requires serious knowledge of macroeconomics and confronts decision makers with a series of tough decisions on one or the other among the contentious policies depending on the school and vein of macroeconomics one is disposed to believe and follow. Controlling GDP, employment and inflation requires dealing with capital formation and related financial transactions. As Schroeder (2018) has shown, a search for discussions of ‘capital’ in academic literature produced almost no results. CC literature does not focus on macroeconomic issues, while various local and regional authorities or grassroots activists involved in the CC initiatives deal with it even less. What makes KMS, in spite of all these facts

and in contrast to the other CC currencies, a currency that can crowd out legal tender just through its superior monetary capability on the one hand and fundamentally simple inner working, one that is easily understandable by practitioners on the other?

It will be shown that the KMS, this special form of mutual credit CC, possess a feature that makes it particularly suitable for dispensing with the excess financial circulation without impeding the real circulation. It is worth noting that according to Blanc (2011) "National currencies, that is money defined and organised by a national or federal sovereign power in a pure sovereignty framework, cannot be considered CCs." Although in this delineation Blanc does not directly address legal tender, one can hardly imagine a currency that is used 'within a pure sovereignty framework' and is not legal tender. Despite the fact that it can provide the liquidity necessary to support the production of new goods and services, Komoko is not designed to act as legal tender if it is taken by its formal definition (Horvitz, 1974) as:-'… valid payment for all debts unless there is a specific agreement to the contrary'. KMS also does not need sovereign power for its promulgation more than any other CC.

In its original form (Kavčič, 2016), the separation of the exchange circles was founded on a rigid, rule-based barrier that almost entirely prohibited, with the exception of loans and purchases of new stock, the use of komoko for financial transactions between businesses. This prohibition, as presented originally, appears to be cumbersome for businesses because (Kavčič, 2016) does not explain how arbitrary financial transactions can be performed by businesses. In addition, the general prohibition of financial transactions with the exception of loans, as conceived originally, was discovered to be easy to evade as businesses could use loans to roll over their profits and/or losses into the following period and thus amass large amounts of currency and/or respective debt.

This paper discloses how the KMS can support financial transactions and introduces the notion of inverse maturity of credits as the distinctive feature that enables the KMS to contain the potential drawbacks of the financial circulation.

(Schroeder, 2018) contends that the KMS does not support the exchange of capital goods. It will be shown that Schroeder's position with respect to the original version of KMS is only partially correct. However, the importance of managing and supporting the exchange of capital goods by CC currencies which is emphasised by (Schroeder, 2018) is fully observed in this paper. The ambiguities related to capital goods from the original KMS proposal (Kavčič, 2016) have been resolved. This paper discloses how to deal with purchases of fixed capital in the KMS. The paper emphasises the distinction between the financing of working versus fixed capital. Fixed capital is dealt with depending on the type of fixed assets. A distinction is drawn between fixed assets built for the market and custom-built investment projects. New solutions dealing with the exchange of shares entering the primary market are explained. A section of this paper is devoted to exchange with other currencies and legal tender in particular. The approach is purely theoretical.

2. DEALING WITH THE FINANCIAL CIRCULATION IN KMS

2.1. Dealing with stock

The version of KMS disclosed in this paper also provides support for financial transactions involving businesses, a functionality that was, with the exception of loans, prohibited in (Kavčič, 2016). The exchange of goods and other komoko transactions between households, which is by definition a financial transaction, was, however, supported in (Kavčič, 2016). Financial transactions are those transactions which do not correspond to the exchange of new goods and services and are therefore usually exempt from VAT. These are examples of what are deemed financial transactions in the KMS: lending/borrowing inclusive related instalments, buying/selling of other currencies, buying/selling of merchandise inventory out of the producer-wholesaler-retailer chain, and buying/selling old durable and capital goods. When referring to 'old durable and capital goods' in (Kavčič, 2016) or in this paper, 'old durable and old capital goods' is always meant. New capital goods, such as new machine tools or new houses, are part of the real circulation as are any other goods produced and sold to consumers or to another business for consumption or use respectively. Old goods that are durable or capital in nature have already been purchased once. There is no ambiguity about what an old capital good is when speaking about tangible items such as a house or a bulldozer. However, when speaking about stocks (shares) or some other intangible items, things are not so clear cut. As a rule, all intangible items are deemed 'old durable and capital goods' in the KMS, however, there can be

exceptions. Probably the most important exception is new stock, such as when an established private firm decides to go public and issues new shares directly or through an investment bank. Not all of the newly-offered stock value is deemed new goods, because the majority of a firm's assets are old goods from the KMS perspective. Factory buildings, production equipment, car parks, etc., everything has already been purchased once and put to use with the exception of goodwill. Only the portion of stock corresponding to goodwill can be sold as new goods for komoko money. The details of financing investment projects are explained in a separate section of this paper.

2.2. Maintaining the currency flow

(Kavčič, 2016) introduced a differentiation between households and businesses with respect to how the requisite currency flow is maintained. For households the requisite currency flow is achieved by the grace period followed by the progressive demurrage. For businesses the pace of their respective account's money flow depends on their characteristic natural business turnover period in combination with the mandatory clearing period dictated by the KMS. For example, the characteristic natural business turnover period of a firm (previously in (Kavčič, 2016) referred to as the 'sales cycle') in service industries, such as hairdressing, is usually determined by the lump expense (the periodical payout of salaries) following the incremental revenues (haircuts). The characteristic natural business turnover period of a construction firm is usually determined by the lump revenue (the sale of a house) following the incremental expenses (the periodical payout of salaries and the costs of materials). The balance of the accounts during the characteristic natural business turnover period could be compared to the respiratory cycle. In accounts in the black (black ink accounts), the balance curve first rises from zero to a value and then again falls towards zero, whereas in accounts in the red (red ink accounts), the balance curve first descends to a maximal negative value and then ascends back towards positive. Red ink accounts use a KMS overdraft while black ink accounts do not. In the KMS, businesses are mandated to periodically clear their accounts i.e. bring them to zero. The period in which a business is mandated to clear its account is called the business turnover period. In general, businesses can have their business turnover period equal to or longer than their characteristic natural business turnover period, but no longer than the mandatory clearing period which is determined by the KMS. Businesses with characteristic natural business turnover periods longer than the mandatory clearing period, for instance small shipyards, are an exception to this rule. How the KMS should treat such cases is explained in the section devoted to fixed capital. It is expected that the duration of the mandatory clearing period would be between three and six months. The change in the mandatory clearing period duration would be used by the KMS as a monetary control measure.

2.3. The real and the financial accounts

To support financial transactions and to maintain the requisite currency flow at the same time, this new version of the KMS introduces a new account category for business and household accounts. In addition to their 'normal' transaction account (hereinafter referred to as the 'real' account), each business and household would also have a second account, hereinafter referred to as a 'financial' account. Generally, account holders are free to perform any kind of financial transaction. However, financial accounts are maintained with non-negative balances only. As a rule, transactions can only run from financial accounts that have a positive balance, since the KMS does not allow a KMS overdraft to be used for financial transactions (there is one exception explained further on). Any proceeds from financial transactions, no matter where they stem from, will end up in the financial account of the recipient. Account holders can perform real transactions using credits from their financial accounts, for instance, they can purchase goods or services, or they can pay for labour or dividends. However, account holders are not permitted to transfer credits between their 'real' and 'financial' accounts other than when they transfer credits from the 'financial' account to the 'real' account at the end of the business turnover period in order to comply with the mandatory periodical clearing of accounts. This transfer is, however, ignored by the KMS overdraft limit calculation for the following period.

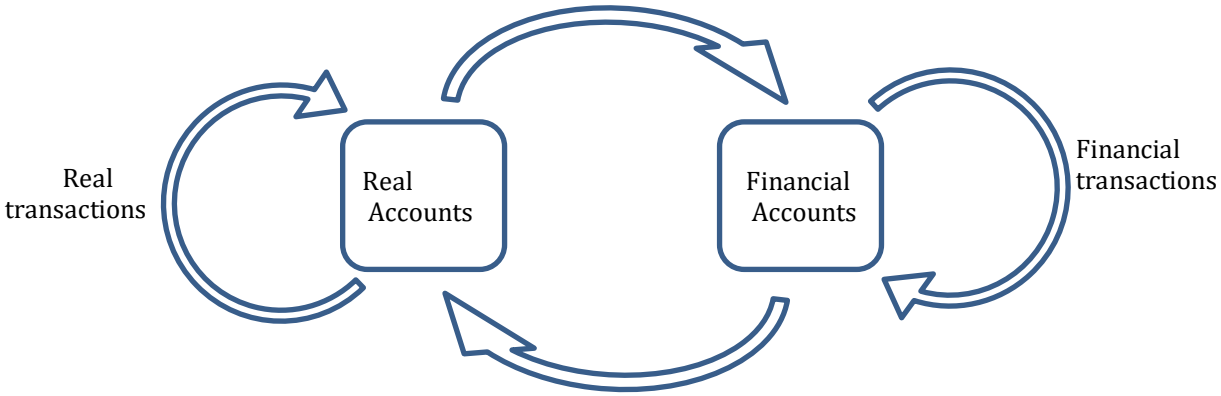

Figure 1: Transition chart of the 'real' and the 'financial' flows and accounts.

2.4. Dealing with the potential money bubble due to the financial circulation

The KMS calculates the overdraft limits and thus the liquidity of the whole system on the assumption that credits are discharged from each economic unit with a pace equivalent to the value of goods or services flowing into it (+ profits + the value of depreciation). Financial transactions, such as loans, can disrupt this equivalency and cause liquidity problems. Short-term loans have the potential to create a bubble of unused credits, though not unlimited in size, yet potentially harmful to the KMS operations. Short-term loans can cause rolling over of credits from period to period from the account of one business to the account of the other. However, due to some less cumbersome possibilities of saving, businesses are not expected to indulge in such activities. Were this still to happen, however, KMS has enough administrative measures at hand, first to detect such a build-up and, second, to deter it.

3. THE INVERSE MATURITY OF DEPOSITS (CREDITS)

3.1. Assuring currency flow on the financial accounts

Balances on financial accounts are not subject to the mandatory periodical clearing, instead, a mechanism similar to the one described in (Kavčič, 2016) for households is implemented for all financial accounts. In (Kavčič, 2016) the following regime is foreseen for household accounts for the sake of maintaining the requisite currency flow. Deposits on household accounts mature and, once they reach maturity, are levied with progressive demurrage. The fact that maturity in the context of KMS financial accounts has the opposite effect to the well-known maturity of the financial instruments should be taken into account. In comparison to the present day (fractional reserve) banking (FRB), deposits feature inverse maturity in the KMS. In (Kavčič, 2016) deposits in household accounts that are transferred from business accounts acquire new maturity, which is dictated by the so-called grace period determined by the KMS. It is expected that the grace period would last from two to four months and that this would be one of the monetary control measures available to the KMS. When deposits are transferred from one household account to another, they are not rejuvenated, their maturity (due date) remains with them and does not change.

Financial accounts keep track of the maturity of the credits being deposited to them and will therefore be referenced to as 'maturity aware' accounts. In addition to the business financial accounts and household financial accounts, household real accounts are also 'maturity aware'. Deposits on 'maturity aware' accounts all mature and, once they reach maturity, they are levied with progressive demurrage. What is referenced to here as a deposit is recorded in the KMS as a credit entry. Each credit entry in the 'maturity aware' accounts has a maturity attribute attached to it. A maturity attribute is a date when a deposit (=credit entry) is charged with progressive negative interest. The maturity of a credit entry is determined at the time of the transaction by the status of its double entry debit counterpart account and thereafter it does not change. When it comes to determining the maturity of a

deposit (credit entry) by the status of its double entry counterpart account, there are the following three possibilities:

- When the target account in question is a financial account (be it business or household) and the double entry counterpart account of the financial transaction is a business 'real' account, the maturity of the corresponding credit on the financial account equals the date when the mandatory clearing of the business 'real' account should have taken place.

- When the target account in question is a household 'real' account and the double entry counterpart account is a business 'real' account (this implies a real transaction), the maturity of each credit deposited to the household 'real' account is assigned a maturity equal to the grace period determined by the KMS.

- In general, for all other situations, the maturity of a (target) deposit is copied from the maturity of the sourcing deposit from the double entry counterpart account. Since 'maturity aware' accounts - with the exception of household 'real' accounts - are kept always positive, there must always be one or more (sourcing) deposits (=credit entries) which create the corresponding positive balance on the double entry counterpart account. Colloquially speaking, the transaction that created the target deposit credit entries consumed the available sourcing deposits and copied their maturities.

3.2. The information content behind the inverse maturity of deposits

The maturity attribute of household deposits introduced in (Kavčič, 2016) described as ageing is basically an implementation of the script money proposed by (Gesell, 1919) adjusted to the mutual credit type of currency and taking advantage of modern information and communication technology. Traditional ledgers do not consider maturity. Each deposit on an account only has its entry (validity) date, which makes it possible to calculate the balance of an account as a function of time. When payments from an account are made in the traditional ledger, only the balance after the withdrawal is checked, to ascertain whether or not it exceeds the limit; if the limit has not been exceeded, then the new entry is recorded. Some important implications have to be dealt with when the maturity attribute is attached to deposits. Firstly, when payments are made, the software must use a rule that guides it in deciding which deposit to use for the payment. The transaction should preferably consume those deposits with the shortest maturity first. Secondly, it is clear that when several deposits with a different maturity need to be used in one financial transaction, this one financial transaction will be composed from several entries and will also result in several new deposits with the respective maturities on the account of the recipient. Thirdly, when deposits are consumed by a transaction, they are marked as closed, much like entries in accounts payable or accounts receivable. In general, the KMS prohibits transactions stemming from a negative financial account, however, this rule does not apply to all maturity aware accounts. Household real accounts have overdrafts assigned to them. It is not practical to prohibit account holders from drawing down on their overdraft facility, for instance to credit a spouse or children with monthly allowances. Since household to household transactions carry with them the maturity of the originating deposit, a question arises over what the maturity should be of the deposit stemming from an overdraft. A negative account has no deposits marked as open or has no deposits (=credit entries) at all, hence a maturity cannot be determined. By convention, the KMS assigns the full grace period to deposits stemming from household real accounts with a negative balance (i.e. those exploiting an overdraft), as if they would stem from a positive household real account with newly recorded credits.

3.3. The implications of the inverse maturity of deposits on monetary stability

There is an important correlation between the KMS and the present day (fractional reserve) banking (FRB) in terms of maturity. The ageing of deposits, i.e. the inverse maturity feature of KMS deposits on maturity aware accounts and mandatory clearing of the real business accounts, can be compared to the maturity of loans granted in FRB, as these features of either system cause currency to be repeatedly destroyed. The general perception that money circulation in the economy can be compared to blood flow is somehow misleading, as blood is one fluid that is driven circularly through the human body. This blood flow perception might have been correct at the times of the gold standard. With modern fiat money, however, this is no longer so accurate. By its very nature, the great majority of fiat money in circulation stems from loans created by commercial banks. Every loan has a maturity. When a loan is repaid, the money is destroyed and thus disappears from circulation. Fortunately for the economy,

commercial banks are happy to create new loans, thus effectively supplementing the missing quantity. From an accounting perspective, in the FRB system, loans, i.e. debits, have a maturity whereas deposits, i.e. credits (=money), do not. Once money enters into circulation, there is no force which can coerce it to come back to meet its creator, i.e. to the loan that generated it. A miser might have got their hands on it and will not release it for good. People in possession of money are not necessarily those who need to pay for the costs of production materials and salaries or to buy food and other goods needed for living. Here again commercial banks are happy to lend them or grant them overdrafts. In doing so, they may again act as creators of money and whisk it out of thin air, or they can act as intermediaries and lend out the money the banks have borrowed, in the first place, from depositors in exchange for interest. On KMS maturity aware accounts the maturity remains with the credits. For KMS real business accounts it can be said that the maturity even pertains to both sides of the account, i.e. to debits and credits, as the account is mandated to clear at the end of its business turnover period from either side of the balance. In the FRB all maturities remain with the debits (loans). There may be substantial sums of currency in the FRB system which are not mandated to participate in regular real circulation, yet they can enter it at the whim of its owners, which is a serious cause of instability. If, hypothetically, the FRB central bank were to demand that all loans must be repaid within six months, a large proportion of loans would default and the same amount of money would probably still linger on some accounts as demand deposits. Many consider overly extensive financial circulation to be an impediment to the economy, however, this supposition reveals that it can be the other way around. In FRB the financial circulation may be a solution because it means that vagabond credits do not enter the real circulation and cause inflation.

4. PROVIDING LIQUIDITY FOR WORKING CAPITAL

(Kavčič, 2016) describes how the KMS can determine the size of the overdraft limit of an account holder based on its account balances in the previous turnover period. Such raw data should serve the purpose of revealing the turnover period of the account holder in addition to the overdraft limit required to cover all the working capital needs. From the perspective of working capital needs, the description in (Kavčič, 2016) lacks some important details, in particular how to deal with opening balances and how to treat past financial transactions, such as instalments when calculating overdraft limits by the KMS. When calculating the working capital needs of an account holder (this also includes households as they must sustain themselves until payday).

The KMS should take into consideration opening balances, i.e. the money available to the account holder at the beginning of the period. For example, if the beginning of a period is around the middle of summer, when the wheat has already been harvested and grain put into silos by a farmer but not yet sold, then the farmer's opening balance would be, for instance, –200,000 komoko (if 200,000 komoko is the farmer's average revenue). The opening balance of the grain wholesaler who buys the crops would be +200,000 komoko. Therefore, in this scenario, the overdraft limit for the farmer would be 200,000 komoko and the overdraft limit for the wholesaler would be 0 komoko. The grain wholesaler in this scenario already has enough working capital and does not need an overdraft. Its account will remain positive throughout its business turnover period since it will receive revenues in excess of expenses when grain is sold to mills. If, however, the opening balance of both economic agents in this scenario was 0, then the KMS would grant an overdraft of 200,000 komoko to the grain wholesaler and 0 komoko to the farmer. When speaking about working capital it should be noted that currency such as komoko is considered working capital only from a microeconomic perspective. A proper macroeconomic perspective should not treat fiat currency as capital. Therefore, the real working capital in this scenario are the grain in silos and the farmer's trust in komoko. No economy can start from scratch without stocks (inventory) or trust.

When calculating overdraft limits for account holders, the KMS applies the following rules:

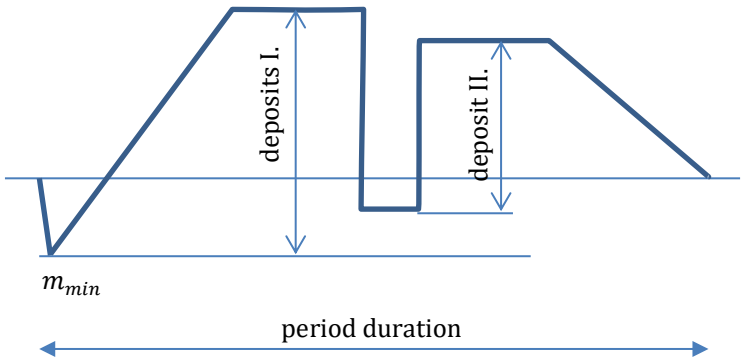

Figure 2: Account balance curve for a period and the relevant variables.

(1)

$$v = \frac{to}{m_{max} - m_{min}}$$

where:

v velocity of money

to period turnover, calculated as a sum of all deposits within a period (to = deposits I.+deposit II.)

m_{max} the maximum net balance of the real account within a period

m_{min} the minimum net balance of the real account within a period

The net balance of the real account is the balance of the account stripped of all financial transactions and purchases of fixed assets. Period turnover means period revenue for businesses and period income for households. The KMS considers all four variables from the above equation as slowly changing and characteristic of each account. When calculating an account's overdraft limit for the coming period, the KMS carries over the value of the money velocity and the value of the maximum net balance from the previous period. The value of the turnover in the current period is forecasted, however, it is supposed to only change by a small amount in comparison to the previous period. This change depends on the growth (de-growth) rate determined by the KMS. The KMS calculates an account's overdraft limit for the coming period thus:

(2)

$$m_{min}(1) = -\frac{to(1)}{v(0)} + m_{max}(0) - c_{de}(0)$$

where:

$m_{min}(1)$ if the value is negative then $|m_{min}(1)|$ means the absolute value of the overdraft limit for the coming period; if the calculated value is positive then the account does not need an overdraft

$to(1)$ forecasted turnover of an account in the coming period

$v(0)$ money velocity of an account in the previous period

$m_{max}(0)$ the maximum net balance of a 'real' account for the previous period

$c_{de}(0)$ depreciation cost of an account for the previous period (a detailed explanation follows in the next section)

The equation (2) can be aggregated across all account holders for the entire community.

(3)

$$\sum m_{min(i)}(1) = \sum -\frac{to_{(i)}(1)}{v_{(i)}(0)} + \sum m_{\max(i)}(0) + \sum -c_{de(i)}(0)$$

The liquidity of a community KMS-based economy is then achieved when the following rule is satisfied:

(4)

$$\sum m_{min(i)}(1) \leq \sum -\frac{to_{(i)}(1)}{v_{(i)}(0)} + \sum m_{\max(i)}(0) + \sum -c_{de(i)}(0)$$

5. PROVIDING LIQUIDITY FOR FIXED CAPITAL

Under the assumption of a closed loop economy, by providing the requisite working capital for each and every economic agent, the KMS can also finance the fixed capital needs of businesses. This is due to the fact that the producers of fixed assets, such as the producers of machine tools, are granted the requisite overdrafts in the same way as any other economic agent. However, this type of financing does not necessarily cater for each and every fixed capital need in the economy. In comparison to financing working capital needs, there are three additional issues which need to be resolved when it comes to financing the fixed capital needs. The first issue relates to how the fixed asset is being built, i.e. is it produced for the market or is it custom-made, the second issue relates to how the overdraft limits are calculated for each economic agent, while the third issue is the potentially long turnover periods related to the production of fixed assets which requires a different KMS treatment for the related businesses.

5.1. Fixed assets produced for the market and depreciation

When fixed assets are produced for the market then their production can be financed by the KMS overdraft facility, as the regular production is exactly what qualifies an economic agent for an overdraft limit sufficient to cover its working capital needs. This rule alone, however, may not provide enough liquidity for the system as a whole. The rules of the KMS provide overdraft limits based on past data for all accounts as discussed in the previous section. When the KMS calculates overdraft limits for businesses based on past data, it considers the purchases of materials or other expenses that are treated as direct and indirect costs entering into the balance sheet. The KMS, however, excludes past fixed asset purchases from this calculation. Fixed assets usually have a much longer turnover period if the turnover period of a fixed asset is deemed equal to its depreciation time and consequently to the maturity of the loan which financed the purchase. Financing purchases (not production) of fixed assets thus bears much higher risks than financing working capital. However, the KMS provides the requisite liquidity for the entire economy without it being bound to bear the higher risks of directly financing purchases of fixed assets. In the KMS, as in any other mutual credit type CC or even in the present day (fractional reserve) banking (FRB) (in as much as it is loan based), to create a unit of currency circular flow between two accounts in one circle i.e. with just two reciprocating exchanges, a unit of overdraft is only needed in one of the accounts - the red ink one. The other account is black ink and does not need an overdraft to perform a back payment. If, hypothetically, the entire production of fixed assets was to by some chance be red ink, then by granting it the requisite overdrafts, the KMS would provide the necessary liquidity for the entire economy, since by being of the red ink type, the producers of fixed assets would discharge into circulation the entire amount of money necessary to purchase their output prior to when the corresponding sale should have taken place. By being paid in advance, the rest of the businesses could thus perform purchases of fixed assets using their own earned credits. The behaviour of the balance curve of each business depends on the opening balances and the contractual relationships between businesses. Hence it would be very difficult, if not impossible, for the KMS to select just fixed asset producers and designate them as red ink. However, when the depreciation cost is included (by imputation) into the overdraft limit calculation, overdraft limits are then calculated for each business resembling the working capital needs of the previous period, thus assuring the successful repetition of the turnover. An explanation follows: providing overdrafts in requisite

amounts to each economic agent in the KMS is akin to providing loans in the FRB economy. Overdrafts in the KMS need to be cleared periodically, much like loans need to be repaid in the FRB. This implies earning through economic activity or entitlements to be able to repay which is what 'normal' businesses do. The end price of goods or services should cover the costs of inputs plus some profit. In essence, these costs and profits are mirrored by the discharges of currency into the real circulation throughout the turnover period when businesses pay their suppliers, wages or dividends. In addition to input materials, labour and rent costs, the cost of inputs should include the depreciation of fixed assets. The depreciation cost is, however, usually not mirrored by a discharge into the real circulation of a proportional sum in a manner similar to the rest of the costs. A possible frequent occurrence could be that a business would approach the end of its business turnover period with a positive sum on its account even after paying for all the periodic supplies, labour and dividends because the depreciation is unrelated to the periodic supplies. Sometimes businesses finance their purchases of fixed assets using their savings whilst at other times they use loans for which they pay periodic instalments. Let's consider the second option and let's assume that the value of the periodic instalment of business A equals that of its periodic depreciation cost. In the overdraft limit calculation, the KMS disregards all past financial transactions including instalments. This alone would mean that the calculated overdraft limit of business A would be less than its working capital requirement for the value of the instalment. By adding the depreciation cost to the calculated overdraft limit as shown in the formulas presented in the previous section, the KMS ensures that the working capital requirements of businesses are met. This imputed depreciation cost in the overdraft limit calculation only has an effect on red ink accounts. When, during the business turnover period, the instalments stemming from the loans granted for the fixed assets purchases of the red ink accounts are due before the earnings, then this added depreciation-related liquidity can be used to finance the payments of these instalments. The other option is that this added liquidity is transformed into savings of the red ink businesses even before the earnings take place. The red ink businesses are supposed to cover all the costs including depreciation plus make some profit by the end of their business turnover period, in the same manner as black ink businesses. All red ink and black ink businesses are bound to clear their accounts at the end of their respective business turnover periods. To avoid being levied for not clearing their accounts in KMS, a business that is not bound to pay instalments should discharge the value of the depreciation cost into financial circulation by lending or buying securities or similar assets. This is an act of saving which, after some time, would enable the business to purchase fixed assets using its own savings. In the KMS, commercial banks and credit unions are supposed to collect savings and transform them into loans through which businesses could purchase fixed assets that are produced within one mandatory clearing period.

5.2. Providing liquidity to businesses with long turnover periods

Those businesses which have longer characteristic business turnover periods than the mandatory clearing period such as construction businesses, could clear their accounts less frequently accordingly as the KMS has been designed to cover all working capital needs. However, in such cases another consideration comes into play. After being produced (using a KMS overdraft) goods (fixed assets) must be sold /purchased. It is assumed that within a time span equal to one mandatory clearing period, the aggregate depreciation would be enough to purchase the aggregate production of fixed assets. Within a large national economy this may hold true, however in a small community economy it is highly likely that this assumption would be wrong. Let's take, for instance, a community which has only one construction business that has one current project that will take a year to complete, and the rest of the businesses which all have business turnover periods equal to the mandatory clearing period, which is three months. The periods prior to the completion of the construction project would exhibit excess credits due to the discharge of credits from the construction project and no corresponding intake as the intake (=sale) of the construction project is only due to take place upon its completion. These excess credits would be destroyed by the progressive demurrage of the KMS prior to the completion of the construction project as the rest of the businesses have much shorter business turnover periods. When finally, the construction project is completed there would not be enough available credits for the sale/purchase to take place. If the aggregate production of fixed assets varies from period to period then the value of an arbitrary aggregate period depreciation may not match it. Due to the KMS clearing requirements, businesses cannot carry over the value of the depreciation from one period to the next and the same also applies to the whole business sector. If the aggregate production of fixed assets within a period is greater than the corresponding aggregate depreciation (ignoring retained earnings), then businesses cannot purchase the former in whole. This paper introduces the following solution to the problem of the varying fixed assets production. In the KMS, the deemed inverse maturity of credits equals the longer of the end of the

mandatory clearing period on the one side and the end of the characteristic business turnover period on the other. This means the latter in the case of the varying fixed assets production. When a producer of fixed assets discharges credits into circulation (using an overdraft), the KMS tracks the new maturity of these credits discharged from such a business. If the credits are part of a financial transaction, then they retain the original maturity once deposited into the financial account of the recipient. However, when the credits are part of a real transaction, then they acquire a new maturity once deposited into the real account of the recipient. In cases where a new maturity is shorter than the original one, KMS issues a corresponding time deposit bid. The value and the maturity of this time deposit equals the value and the maturity of the original credits. The interest rate is determined by the market. The interested parties can purchase this time deposit from the KMS and thus preserve the value of their depreciation past the mandatory clearing date. At the same time the KMS makes sure there will be enough credits when the fixed assets are ready for sale.

The KMS is a complementary currency in the sense that it is designed to primarily support the production and delivery of new goods and services. This new version of the KMS provides some support for trading with old capital goods to businesses. By performing financial transactions businesses can freely trade old capital goods including stock. Yet this does not mean that the KMS supplied liquidity can even come close to the whole demands of trade dictated by contemporary financialisation and monetisation. It does not and is not meant to do so.

5.3. Custom-built investment projects

In the KMS-based economy, the new custom-built investment projects are not covered in the calculation of the approved overdraft limits and thus the quantity of money available does not suffice to enable the whole KMS economy to be run. The KMS cannot supply the missing liquidity by granting overdrafts directly to the custom-built type of investments on the same terms as it does to regular businesses, as the KMS cannot take responsibility for their success or failure. Compared with regular market-oriented production, investment projects are much riskier. The success of the market production funded by KMS overdrafts is proven by repetition, whereas custom-built investment projects are one-of-a-kind by definition and full of unknowns.

One possible solution to this issue would be to adopt the investment banking approach whereby an investor agrees with an investment bank that underwrites the investment project. The KMS then creates a new account and grants it an adequate overdraft. The document that secures the KMS overdraft facility (a pledged collateral or similar) and the forecast are mandatory parts of the KMS investment project. When a project starts, the KMS monitors that project's funds and expenses follow as per the forecast. Should it be necessary to deter potential speculation, KMS can introduce monthly overdraft limits in addition to the overdraft limit valid for the project as a whole. The funds for an investment project are raised in the capital market by the investment bank selling the investor's bonds or shares or the funds are paid directly into the account by the investor. If the project fails, the KMS is refunded by the investment bank or sells the property pledged and recovers the value of any money lost. Investment projects share two features with the businesses producing fixed assets serially for the market. First, it is mandatory for the investment project to be of the red-ink type for the duration. If the investment project was of the black-ink type, then it would consume the liquidity of regular production, thus effectively diminishing it. The investment project must consume the overdraft prior to receiving funding (for instance, collecting savings) in order to discharge enough money into circulation. Secondly, the KMS monitors the maturity of credits issued by investment projects and adequately issues bids for demand deposits to cater for any mismatch of the supply and demand of credits due to mandatory clearing of accounts.

Since investment projects produce new capital goods, buying or selling the shares or the bonds of an investment project is deemed a real transaction by the KMS.

6. EXCHANGE WITH OTHER CURRENCIES

For the purpose of facilitating trade with the rest of the economy (world), the KMS maintains a komoko 'rest of the world' account (hereinafter referred to as the ROW account). For a business in the KMS, exporting goods or services means selling them to the rest of the world, represented in the KMS by the ROW account. The business is being paid for its exports by the ROW account as long as there is a sufficient overdraft. When the overdraft has been used up, it becomes necessary to wait for some imports. Importing goods or services in the KMS means buy-

ing them from the ROW account and duly transferring to it an adequate amount. When the KMS is interfaced to the present day fractional reserve banking (FRB)-based economy and thus the rest of the world (ROW) stands for the economy using legal tender such as euro or dollar, then a KMS ROW account can only exist in sync with a 'mirror' account at an FRB bank. The deposits and withdrawals from the KMS ROW account are supposed to spawn corresponding withdrawals and deposits to/from the FRB mirror bank account and vice versa. The exchange rate between komoko and the FRB currency is determined by the KMS and is managed accordingly in order to keep the exchange in balance with the rest of the world.

The rules governing outgoing transactions from the ROW account are similar to those pertaining to outgoing transactions from household 'real' accounts when exploiting an overdraft. An outgoing transaction debits the account in question and credits another account, i.e. it takes credits out of an account. An incoming transaction credits the account in question and debits another account, i.e. it brings credits into the account. A negative account has no deposits marked as open or has no deposits (=credit entries) at all, hence the maturity cannot be determined. By convention the KMS assigns the deposits stemming from the KMS ROW account (necessarily always exploiting the overdraft) a minimal operative maturity. Let's say that this maturity was to last between one and three weeks. To prevent opportunistic speculative financial transactions, KMS would require this same minimal operative maturity from all KMS ROW account incoming financial transactions.

Due to the ageing of the komoko currency, the saving motives of individuals would drive them to use any opportunity to exchange komoko for something more durable and yet easy to exchange into a liquid asset in case of a sudden need. The option most wanted would probably be legal tender such as dollars or euros. Strong demand of that kind would empty the FRB mirror account. This could impede businesses wanting to import raw materials and components or use services with komoko as the FRB mirror account would be empty. Known methods of balancing foreign exchange, such as adapting the exchange rate or increasing the difference between the buying and selling exchange rates, are on hand for KMS. Due to the separation of exchange circles in the KMS, there is one additional and rather unorthodox option possible. KMS can use different exchange rates for the 'real' and 'financial' transactions. Thus, it can supress overly high buying of non-komoko currencies or other securities without any impediment to the real foreign circulation.

BIBLIOGRAPHY

Blanc, J. (2011). Classifying 'CCs': Community, Complementary and Local Currencies. International Journal of Community Currency Research, 15(Special Issue), 4-10.

Filho, F. G., Rigo, S. A., & Silva, J. J. (2013). Microcredit Policies in Brazil: An Analysis of Community Development Banks. In I. Hillenkamp, F. Lapeyre, & A. Lemaître, Securing Livelihoods: Informal Economy Practices and Institutions. Oxford University Press 2013.

Gesell, S. (1919). The Natural Economic Order (Revised edition 1958 ed.). London: Peter Owen Limited.

Greco Jr., T. H. (2013). Taking moneyless exchange to scale: measuring and maintaining the health of a credit clearing system. International Journal of Community Currency Research, 19-25.

Horvitz, P. M. (1974). Monetary Policy and the Financial System. Prentice-Hall.

Kavčič, S. (2016). The "Commodity – Money – Commodity" Mutual Credit Complementary Currency System: Marxian money to promote community trade and market economy. International Journal of Community Currency Research, 20, 41-53.

Keen, S. (2011). Debunking Economics – Revised, Expanded and Integrated Edition: The Naked Emperor Dethroned? London and New York: Zed Books Ltd.

Littera, G., Sartori, L., Dini, P., & Antoniadis, P. (2017). FROM AN IDEA TO A SCALABLE WORKING MODEL: MERGING ECONOMIC BENEFITS WITH SOCIAL VALUES IN SARDEX. International Journal of Community Currency Research.

Motta, W., Dini, P., & Sartori, L. (2017). Self-Funded Social Impact Investment: An Interdisciplinary Analysis of the Sardex Mutual Credit System. JOURNAL OF SOCIAL ENTREPRENEURSHIP.

Riegel, E. C. (1978). Flight from Inflation: The Monetary Alternative. Los Angeles, CA: The Heather Foundation.

Schroeder, R. F. (2018). COMPLEMENTARY CURRENCIES AND THE FINANCING OF INVESTMENTS IN LONG-TERM ASSETS. International Journal of Community Currency Research, 22 (WINTER), 4-15.

Schumacher, E. F. (1943). Multilateral clearing. Economica.

Stodder, J., & Lietaer,, B. (2016). The Macro-Stability of Swiss WIR-Bank Credits: Balance, Velocity, and Leverage. Comparative Economic Studies.

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CHALLENGES OF SOCIAL CURRENCY USE: A SURVEY ON COMMUNITY DEVELOPMENT BANKS IN BRAZIL

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ABSTRACT

This paper presents the case of the social currencies created and managed by Community Development Banks (CDBs) in Brazil. During the management processes of social currencies, many challenges are faced by CDBs. This study addresses the main challenges and difficulties of the social currencies of CDBs. This research shows the results of a survey carried out on 47 of the 78 social currency cases that existed in Brazil in 2013. These cases include 18 communities where social currencies presented circulation difficulties. Difficulties in obtaining a monetary reserve and being accepted by local businesses were also major challenges. The results encourage further research on other social currency cases and offer information that support the continuity of public policies for solidarity finance in Brazil.

KEYWORDS

Social Currency. Community Currency. Community Development Banks. Solidarity Finance. Banco Palmas. Brazil.

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1. INTRODUCTION

Community Development Banks (CDBs) are financial institutions that focus on promoting economic development through loan granting and other services within a particular area or community, mainly of low-income or otherwise disadvantaged. CDBs are part of the microfinance field where several institutions–public, private and non-profit organizations–offer financial products (mainly microcredit) to low-income populations. While microfinance is considered as one of the most important alternatives for poverty alleviation in both developing and developed countries, studies have shown that microfinance institutions and government microcredit programs have generally failed in this aspect (Brau & Wolle, 2004). In Brazil, CDB are solidarity finance experiences characterized by four basic aspects, namely, a) community-based management of activities; b) microcredit lines for production and local consumption with fair interest rates to generate increased income and employment opportunities in the community; c) loan granting and collection based on neighborhood relationships and solidarity; and d) creation and management of alternative instruments to encourage local consumption - mainly a social or community currency - which are recognized and accepted by producers, retailers and consumers. Credit lines and social currency are the main devices that assist CDBs in Brazil with coordinating the relation between local actors, and solidarity is fundamental. This study focuses on the fourth aspect of CDBs: the use of community or social currencies.

Community Development Banks are relatively recent in Brazil, but they stand out because they are distributed across several Brazilian regions and received considerable institutional and governmental support. Most of this government support is specific and short-term, but there are also direct and systematic forms of support, such as the financing by the National Solidarity Economy Department (SENAES) of the Ministry of Labor and Employment (MTE) to establish the Brazilian network of community banks. In addition, in some specific cases, legislation has been enacted to regulate the relationship between the local public authority and the community bank. Currently, the Brazilian CDB network is composed of 115 organizations Each one creates a social currency as part of the CDB methodology. Thus, the investment of the Brazilian Federal Government and local powers in the diffusion of CDBs is, consequently, an investment in the creation of new social currencies.

The origin of CDBs in Brazil is attached at the history of the Conjunto Palmeiras and Banco de Palmas association. This history has previously been told by several researchers (Silva Júnior, 2004; Freire, 2009 and 2011; Soares, 2006 and 2009; Borges, 2011; Lietaer and Kennedy, 2010; Meyer, 2012; Rigo, 2014; Rigo and França Filho, 2017). The book "Viva Favela: quand les démunis prennent leur destin en main" (Favela Life: when the poor take their destiny into their own hands), written by Élodie Bécu and Carlos de Freitas with testimony of Joaquim de Melo Neto, published in France in 2009, details the day-to-day leadership in the struggle for better living conditions in the community. However, the research on CDBs and social currencies in Brazil has focused on case studies. The present study presents the first survey carried out in the Brazilian CDB network. It is a diagnostic survey, because the data collection instrument used was constructed with two main focuses: raise basic information on CDBs and their social currencies and diagnose the challenges they face in their local development processes. This study emphasizes information pertaining to social currencies. In Brazil, the field of solidarity economy, specifically solidarity finance, obtained the most important public support between 2010 and 2014. Traditional and innovative initiatives were supported by NGOs and other civil society organizations to promote economic, cultural, political, environmental and social development in poor communities.

The social currencies of CDBs are an important part of a broader activity of these institutions that aim to provide banking and financial services, including access to credit, and a range of community activities linked to a main objective: local development. In this sense, CDBs are a social technology closely associated with management strategies of the local development process, and the main actors are in the community.

During our research, we noticed that the operating mode of social currencies can be explained in four stages: a) creation of the currency and its identifying elements; b) awareness-raising activities; c) issuing and introduction into the community; c) circulation management and control; d) monitoring and assessment of its use.

The creation of a social currency involves decisions regarding its name, values, and design; the bills usually feature elements of local identity. For example, the "Sururus", which circulates in the Quilombola community in the Vale do Iguape in the state of Bahia, is named after a type of seafood abundant in the region. "Cocais", which circulates in the community of São João do Arraial in the state of Piauí, represents the Babassu palm tree, which is abundant in

the region and used in several products, including cosmetics and oils. Both cases have economic and social importance in their respective territories.

The process of implementing social currencies in communities requires capacity and creativity of the CDBs to raise awareness about their use. These activities are constantly reinvented by the CDB managers to the extent that they perceive the need to build the money circulation. In general, the activities revolve around convincing local residents and businesses to use and accept the social currency as a means of payment. To this end, several activities are carried out, such as meetings with local associations and leaders, lectures, plays, publicity materials (posters, banners, leaflets, etc.), and even a photonovel with characters interpreted by community residents, as it occurred with the Palmas social currency in the first months after it was issued.

The issuing and introduction of a social currency into the community also require creativity and commitment of credit agents, and its use has to be guaranteed by national currency (ballast or coverage). Thus, the reserve of national currency must be obtained even before the social currency is created. Each amount of social currency circulating in the community has its national currency equivalent in a bank account. There are many ways to launch a social currency into the community and boost its circulation. First, the residents can borrow social currency for consuming within the community by using it in the local network of enterprises. In this type of credit, the resident has quick access to social currency because of the urgency of the request. Second, the direct exchange of legal tender (Brazilian Real–BRL) for social currency in the CDB tellers. However, research has shown that its effectiveness requires businesses to offer some advantage for purchases in social currency, such as discounts and promotions (Rigo, 2014). Third, the CDB or local partner organizations can pay their associates and employees using social currency. It has been a way of issuing a considerable amount of social currency on a monthly basis and placing into circulation, thus boosting the local economy.

The processes for managing and controlling the circulation of social currency are supported using simple spreadsheets to record the amount issued. Although each CDB, through its credit agents, has specific features to manage its social currency, in general, they follow the methodological guidelines learned during the training stages undertaken by civil society organizations that supported its implementation process. These civil society organizations are called Support and Development Entities (SDEs).

The operation of the alternative currency circuit in the CDB methodology could be summarized as follows: participants receive loans and part of their salary, or directly exchange BRL for social currency at the CDB. Once they have the social currency, they can use it in the community businesses that have joined the social currency system (and are usually registered by the CDB). Once businesses receive the currency, they use them to give back change or buy goods within the community. Hence, a network of producers, businesses, service providers, and consumers is established, using the social currency as well as the legal tender on a daily basis.

It is also important to emphasize the relevant role played by social currencies as a social technology because of their potential to reorganize local economies. Such reorganization consists in keeping the money in the community (considering that the social currency and the legal tender have the same value). Thus, consumers and producers are financed through the use of the social currency, generating a cycle that revitalizes the local economy. Consumers who, for various reasons, have previously bought goods and services outside the community, are encouraged by a close relationship to consume locally. The idea is that this process can boost the creation of new jobs, as well as the emergence of new local enterprises, notably family businesses and Solidarity Economy Enterprises (SEE). As previously mentioned, the CDB methodology is broader, and also includes microcredit lines for production that aim to generate increased income and employment opportunities in the community

Monitoring and evaluating the use of social currencies, although seen as important, have not yet become a CDB common practice at the CDBs. An exception is Banco de Palmas, the first CDB in Brazil, which monitors consumption in the community every two years, and has obtained important information to assist with decision making in general as well as with the currency. However, the other CDBs still have not performed a structured and recorded evaluation of their experience with the use of social currency.

By presenting the general challenges in social currency use, we hope to contribute to practices of these CDBs in relation to their social currencies. We also hope that this paper can provide a better idea to researchers and practitioners in the field of community currency about social currency use in Brazil and its challenges.

This study presents the results of a survey on approximately 47 social currencies of Brazilian CDBs. The findings are presented descriptively in an attempt to provide a concrete look at the data. This study addressing the Brazilian CDB network was the first general survey of the Brazilian CDBs, and is part of a broader research that can be found in Rigo (2014) and Rigo and França Filho (2017). The data collection instrument used was constructed with two main focuses: raise detailed information on CDBs and their management of social currencies and identify their challenges. Our intent was to gather information to guide the actions of SDEs and practices of CDBs. Thus, the main objective of this research was to raise and analyze information through a survey seeking to identify challenges for improving CDB practices and, consequently, their action results in the communities. This study emphasizes information pertaining to social currencies.

To this end, we address the general challenges of social currencies in their communities according to the opinion of CDB managers. After that, we present some aspects of the communities and the construction of the social currency circuits that could influence their difficulties. In this sense, we discuss the role of awareness-raising activities for the use of currency in the communities and the difficulties in creating monetary reserve for promoting social currency circulation. We remark that these–maintenance of awareness-raising activities and difficulties in creating monetary reserve–are the main challenges that CDBs face in building an alternative monetary circuit to assist them with promoting local development according to their intervention methodology.

1.1. Methodology

The data collection instrument was built in May 2012 by a team of four field researchers under the coordination of this researcher. It was used to data from 47 CDBs throughout Brazil between August 2012 and January 2013.

Conducting the survey through on-site visits enabled our research team to gather more data using the prepared instrument. The on-site visits enabled us to understand some contextual aspects that could not be understood using a questionnaire conducted via e-mail or telephone. In addition, these on-site visits ensured more quality to the quantitative data collected and enabled collection of relevant qualitative information from each CDB and their communities. Observation of the participants and open conversations complemented the quantitative information retrieved by the questionnaire and resulted in notes about the participants' attitudes, actions and remarks, as well as about the researchers' impressions (Vieira and Pereira, 2005)

Aiming to summarize the qualitative information collected by research team after the on-site visits, a focus group that lasted approximately 3 h was also formed. The meeting was audio recorded and important details on the situation of the investigated social currencies could be systematized. At that time, situations of specific CDBs were discussed, including regional differences and local aspects that were considered in the interpretations of the objective data collected through the questionnaire.

At the end of collection, a database with the quantitative data was constructed using the Sphinx2000 software. This software and the support of a statistician enabled the construction of tables and the cross-referencing of some information. The qualitative information from focus group was systematized without using the software and categorized according to the common recommendations for content analysis (Bardin, 2008; Dellagnelo and Silva, 2005).

The data presented refer to the 78 existing Brazilian CDBs in August 2012. At that time, 22 new CDBs were starting their activities in different Brazilian states and many others had only recently been inaugurated. These 22 CDBs and their social currencies were not considered in our survey.

We interviewed 47 CDB managers, representing 60.2% of the total in 2012. Currently, there are 115 CDBs in Brazil, and the 47 surveyed correspond to 40.8% of them. We consider that this survey is still representative of the Brazilian CDB. The on-site visits included the majority of CDBs in each region: 3 of the 9 CDBs in the North region; 26 of 44 CDBs in the Northeast region, 4 of the 6 CDBs in the Central-west region, 14 of 18 CDBs in the Southeast region, and none in the South region. The only one existing CDB in the South region was located in the municipality of São Leopoldo, state of Rio Grande do Sul, and was ending its activities. In these regions, 13 states were analyzed to obtain the diversity of locations and experiences.

2. SOCIAL CURRENCIES OF BRAZILIAN CDBS: MANAGEMENT AND CHALLENGES IN THEIR COMMUNITIES

The ways of controlling and managing the circulation of social currencies by CDBs are relatively simple. Most of them use a membership form for local businesses (68.1%), spreadsheets of the social currency amount issued (51.1%), and spreadsheets for managing the entries and exits of social currency and legal tender (63.1%). Other mechanisms have been created by CDBs to facilitate this activity, such as cashbooks, printed forms, etc. Most CDBs make the record at the time of transaction (51.1%), but in some cases such activity is performed at the end of the day or the week (12.8 and 6.4%, respectively). According to the survey data, the average time spent to record and control currency circulation is 2-4 h per week. However, a significant number of CDBs do not keep such records (34.9%).

Regarding the specifics of social currencies and the management of their circulation by the CDBs, banks have also encountered some difficulties, especially in stimulating their use. Difficulties in the formation of the credit fund for loans (ballast or coverage) and acceptance by local businesses have been the main challenges. Of the 47 researched social currencies, 18 had problems with their circulation. In some cases, notably in the Northeast region, problems relative to insufficient credit fund for loans restricted the issue of social currency in the community. Another common problem was the non-acceptance of social currencies by local businesses, requiring a significant effort for awareness by CDB managers. Table 1 identifies the social currencies with circulation difficulties and their respective CDBs and communities.

The main challenge regarding the use of social currencies in the communities, indicated by 24 of the 47 CDB managers, refers to its acceptance by local businesses and community residents. This means that CDBs must constantly make residents and business owners aware of the importance of using social currency in the communities. Some testimonies of qualitative data collection are presented ahead: “there is poor acceptance of the currency by the residents and business owners. The businesses report that customers do not want to receive their change in social currency, which in turn hinders its acceptance by the businesses”; “Confidence in the currency, on account of non-distribution, is the greatest challenge”; “Registration of the businesses that receive the currency is a challenge, because they are reluctant to accept it”; “The problem is that the retailers live outside the territory, and they think: ‘We will not profit anything from it’”.

As a result, we observed that formation of a network of businesses and producers that accept the currency is the preponderant challenge faced by the CDBs in their training activities of the local monetary circulation. The situations are different in different communities. In some cases, residents are reluctant to accept change in social currency when buying something in community. In other cases, they do not feel motivated to make the direct exchange in the CDB even to take advantage of the discounts offered. These situations are reported in some of the interviews with the CDB managers:

> Many businesses retain the currency because buyers do not accept change in Tucumã (Interview, CDB Liberdade, Manaus, AM, Oct 2012).
>
> There are problems involving business owners regarding currency circulation, because they are not generally available and willing to talk to people/customers about the currency. They offer the discount (5-10%), but their involvement in explaining/promoting the social currency is small. In addition, they need to encourage buyers to receive change in social currency, but many prefer to exchange it directly at the bank, thus creating a very short and convenient circulation for the businesses. On the other hand, there are retailers who have never been to the bank to exchange social currency and are able to spend everything in the community, including giving change (Interview, CDB Pirê, Dourados, MS, Oct 2012).
>
> Some important businesses do not accept the social currency, such as a traditional pharmacy of the municipality. People still need to learn more about it, get to know it better, and become aware of the use of social currency, especially on “exchange” (direct exchange, buying products in local markets) (Interview, CDB Dunas, Aracaju, SE, Nov 2012).
>
> Owners argue that they want to “wait and see if it will work out” (Interview, CDB Casa do Sol, BA, Sept 2012).

Table 1 - Social currencies with circulation difficulties in their communities

Name of CDB	Municipality	Area of action	State	Currency
Vale do Acarape	Acarape	municipality	CE	–
Bandesc	Cascavel	municipality	CE	Bento
Pirambú	Fortaleza	Pirambú neighborhood	CE	Pirambú
Dendê Sol	Fortaleza	Edson Queiroz neighborhood	CE	Sol
Padre Quiliano	Caridade	Campos Belos neighborhood	CE	Caribelo
Buriti	Mauriti	municipality	CE	Grão
Ocards	Ocara	municipality	CE	Tupi
Bancart	Irauçuba	Missi district	CE	Tá
Amizade	Irauçuba	Cruzeiro neighborhood	CE	Cactos
Juazeiro	Irauçuba	Juá district	CE	Cactos
Dunas	Acaraú	Aranaú district	CE	Timbaúbas
Pacatubanco	Pacatuba	municipality	CE	Paca
Ecoluzia	Simões Filho	Santa Luzia neighborhood	BA	Trilha
Puã	Vitória	Nova Palestina neighborhood and surrounding area	ES	Puã (*)
Esperança	Cariacica	Cinco neighborhood for RA 8	ES	Rosa (*)
AbraÇo	Serra	Planalto Serrano region	ES	AbraÇo (*)
Terra	Vila Velha	Terra Vermelha region and surrounding area	ES	Terra
Estrutural	Distrito Federal	satellite city of Estrutural	DF	Conquista (*)
(*) Currencies still under process			Total	18

Source: Data from the direct survey (2012).

The problems of acceptance involving each social currency reveal the importance of more in-depth studies in the communities where they occur. It seems that these challenges are related to the work that the CDB has developed throughout its operation. Specifically, acceptance of the currency by local businesses may be associated with the level of legitimacy and recognition of the CDB in the community, which may demand a long time. In addition, the associative dimension that the CDBs propose to build requires people involved and committed to the project of social currency circuit. CDB managers, credit agents, and other local leaders play a fundamental role in the effectiveness of the currency circulation.

The second challenge mentioned by 14 CDB mangers is precisely the lack of monetary reserve, which is the consumer credit fund used by the CDB to offer the line of credit in social currency. The adequate volume of credit fund allows the expansion of loans for consumption in social currencies and, as a result, promotes their circulation. The problem related to the absence or insufficiency of credit fund is a concern for the CDBs, mainly because there is a "potential loss of credibility of the social currency with the delay in obtaining the credit" (interview, Nov 2012). This concern arises because "all the work done to raise awareness in the community for the use of the social currency

could be lost if borrowers seek the CDB and the bank has no funds to lend them the money. The borrowers do not see the currency" (interview, Oct 2012).

2.1 Aspects of the community and construction of the social currency circuit

The survey data and the on-site visits show that communities where the CDBs operate generally have enough businesses to build a social currency circuit network. The challenge then is to stimulate them to trust and accept the social currency. Table 2 shows that 19.1% of CDBs had built a relatively small network of social currency circulation, with acceptance of up to 10 local businesses. Among the CDBs surveyed, 25.5 and 23.4% constructed a circulation with 10 to 30 and 30 to 50 businesses, respectively. There are few cases in which the social currency circulation has more than 50 registered businesses (nine CDBs, 19.1%, have 50 to 100 registered local businesses, and two CDBs, 8.5%, have more than 100 local businesses registered).

Table 2 - Average number of businesses accepting the social currency in the territory

Number of businesses accepting the social currency	Cases	% of cases	% valid	% accumulated
Up to 10	9	19.1	19.1	19.1
Between 11 and 30	12	25.5	25.5	44.7
Between 31 and 50	11	23.4	23.4	68.1
Between 51 and 100	9	19.1	19.1	87.2
Over 100	4	8.5	8.5	95.7
Information not provided	2	4.3	4.3	100.0
Total	47	100.0	100.0	–

Source: Data from the direct survey (2012).

However, the fact that a business accepts the social currency or has been registered in the circuit does not mean that the social currency effectively circulates through it. It also depends on using it. Table 3 cross-references the data of the number of residents of the territories with the number of businesses that accept the social currency (data from perception of the interviewees). Most of the social currencies circulating among more than 50 registered businesses occur in communities with 10 to 60 thousand inhabitants. However, this is does not constitute a correlation, because in some cases the currencies are circulating in much smaller local networks (with up to 30 registered businesses, for example) in communities of the same size in terms of local number of businesses. Furthermore, there is also a case in an area with over 60 thousand inhabitants where the social currency circulation occurs only among ten local businesses.

Table 3 - Number of inhabitants of the territory vs. number of businesses that accept social currency

Number of businesses accepting the social currency	Number of inhabitants in the territory						Total
	Up to 1000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 60,000	Over 60,000	
Up to 10	0	0	0	1	0	1	2
	0.0%	0.0%	0.0%	2.1%	0.0%	2.1%	4.3%
Between 10 and 30	2	0	0	7	1	2	12
	4.3%	0.0%	0.0%	14.9%	2.1%	4.3%	25.5%
Between 30 and 50	0	1	1	**3**	**6**	0	11
	0.0%	2.1%	2.1%	6.4%	12.8%	0.0%	23.4%
Between 50 and 100	0	1	0	4	3	1	9
	0.0%	2.1%	0.0%	8.5%	6.4%	2.1%	19.1%
Over 100	0	0	1	0	2	1	4
	0.0%	0.0%	2.1%	0.0%	4.3%	2.1%	8.5%
Information not provided	0	2	1	4	2	0	9
	0.0%	4.3%	2.1%	8.5%	4.3%	0.0%	19.1%
Total	2	4	3	19	14	5	47
	4.3%	8.5%	6.4%	40.4%	28.9%	10.6%	100.0%

Source: Data from the direct survey (2012).

In order to confirm this no correlation, we tested other data cross-references. For instance, the total number of businesses in the community with the number of businesses that accept the social currency. There are cases with few local businesses (30 to 80) that have a large number that accept the currency (30 to 50); hence, an acceptance network of social currency is formed with the potential to effectively reach the entire community. In addition, there are communities with a quite large number of businesses (over 500 businesses) with only ten businesses accepting the social currency.

In the same sense, the survey was able to identify that the average amount of social currency exchanged weekly at the CDBs is not directly related to the number of businesses accepting it in the community. The purpose of this cross-reference was to obtain information that would provide an idea of the amount of social currency in circulation. The volume of exchange at the CDB, in general, cannot be seen as an indicator of the use of the social currency in the community, because it may mean that the currency is concentrated in the hands of few business owners who have to exchange it for the legal tender so that they can purchase supplies outside the community. Table 4 shows that the average amount of social currency exchanged at the CDBs per week is 150 (always equivalent to the legal tender) in most cases (27.7%). In five cases, the exchanges are of values >500 social currencies and, in 15 cases, there have been no exchanges. The cases with no exchanges are those where the social currencies are no longer circulating in the community or where the CDBs have failed to estimate a weekly exchange value, but they ensured us that it is low.

In terms of an ideal situation of social currency use in CDBs, the lower the value directly exchanged at the CDB, the greater the use of the currency between the members (businesses and individuals). This means that businesses do not have to exchange social currency for the legal tender because the amount they receive in social currency is all spent within the community (with commercial purchases, payment of employees, etc.). However, especially the

larger businesses often do not find supply sources within the community, and periodically exchange the social currency received for legal tender at the CDB. After that, these amount returns to circulation through direct exchange, loans, part of salaries, and other mechanisms to relaunch it in the circuit. However, this makes the circuit shorter.

Table 4 - Average amount of social currency exchanged weekly at CDBs

Average amount of social currency	Cases	% cases	% valid	% accumulated
Up to 150	13	27.7	27.7	27.7
150 to 300	6	12.8	12.8	40.4
300 to 500	3	6.4	6.4	46.8
500 to 700	3	6.4	6.4	53.2
Above 700	2	4.3	4.3	57.4
No exchange	15	31.9	31.9	89.4
Information not provided	5	10.6	10.6	100.0
Total	47	100.0	100.0	-

Source: Data from the direct survey (2012).

2.2. Awareness-raising activities for the use of social currency in the community

Acceptance and use of the social currencies by businesses and residents in the territories seem to depend greatly on the educational activities and instruments, awareness, and dissemination that the CDBs create and use for this purpose. For instance, the interviews with managers of the Buriti, Bandesc, and Vale do Acarape CDBs in the state of Ceará indicated no efforts were made in this direction, and thus their social currencies did not circulate effectively.

In general, during the creation of the CDB and implementation of the social currency, credit agents and other people involved in the process invest in presentations (48.9%); education, such as workshops and training (46.8%); communication materials (61.7%); local media, such as sound systems, word of mouth, and community radio (55.3%); publicity at events and fairs (48.9%); specific activities with business owners (70.2%); and even in community schools (23.4%). However, our research also identified that such efforts made by the CDBs to publicize the social currency role in the territory tend to decline or cease over time. Table 5 shows which of these activities were still being performed by CDBs and their credit agents at the time the survey was conducted. In 46.8% (22) of the CDBs surveyed, none of these activities were being performed. Only 23.4% of the CDBs designed and used communication materials and 17% gave presentations, used local media, and publicized at events and fairs. Only 14.9% of the cases indicated specific activities with local retailers who were vitality important to the social currency circulation.

Problems related to promotion of the social currencies in the territories were recognized as one of the main challenges for their use according to 13 CDB managers, as reported by one of them: “the greatest difficulty is the minimal promotion of the currency; marketing materials” (interview, Oct 2012). The problems with educational activities are associated with maintaining the same communication mechanisms that were used when the CDB and the social currency were first created, which generally require that the CDB credit agents and employees continue these educational activities. This becomes even more important in the context of territories with intense immigration and emigration, as in the case of Conjunto Palmeiras, as Joaquim de Melo Neto, the coordinator of Banco Palmas, pointed out in an interview conducted in 2012.

Table 5 – Activities and instruments utilized by CDBs to stimulate social currency use in the community

Actions and instruments used	Responses		% of CDBs
	Number of occurrences	% of occurrences	
None	22	28.9%	46.8%
Presentations	8	10.5%	17.0%
Education (workshops, courses, training, etc.)	5	6.6%	10.6%
Communication material (posters/banners)	11	14.5%	23.4%
Local media (sound system, word of mouth, community radio)	8	10.5%	17.0%
Events and fairs	8	10.5%	17.0%
Specific activity with business owners	7	9.2%	14.9%
Activity in community schools	2	2.6%	4.3%
Other activities	5	6.6%	10.6%
Total	76	100.0%	-

Source: Data from the direct survey (2012).

As stated earlier, the question of the legitimacy and recognition of the CDBs work by the residents cannot be neglected. The respect and confidence that the community residents have in the CDB initiative can greatly influence the way the social currency circulates. In addition, conflicting issues (political partisanship, for example, as perceived in Matarandiba, territory of the Ilhamar CDB) also have the power to negatively influence the social currency circulation among residents and businesses.

Remunerating CDB members and workers with social currency is a way of releasing it into the community in a more constant way. However, only four CDBs, all in the Northeast region, have this policy and practice, with employees' payment varying from 10 to 50% of their total remuneration. It is noteworthy that the Ilhamar CDB, which pays 10% of its employees' salaries in social currency, and the Cocais CDB, which pays 50% of its workers' salaries in social currency, have practically the whole community accepting their social currencies.

2.3. Difficulties in creating monetary reserve for promoting social currency circulation

The data in Table 6 confirm that the CDBs have had difficulties in creating the monetary reserve to make social currency available in the communities, either in the form of credit for loans or of salary payment (in the case of direct exchange, the reserve is simultaneous and the amount exchanged is usually low). The initial reserve available for social currency circulation in the community is BRL 3,196 on average (approximately EUR 822). However, it should be noted that some CDBs begin their activities without any assets to transform into social currency (minimum 0.0). Some CDBs have this fund significantly diminished as the demand for the social currency falls.

The total reserve fund of the group of CDBs is BRL 408,508; however, BRL 200,000, (approximately 50%) belongs to Banco Palmas. Furthermore, not all the reserve value circulates in the communities because of the challenges faced by the CDBs, as previously mentioned (acceptance, legitimacy, among others). The average amount available, already issued and entering and leaving the CDBs, is equivalent to BRL 3,150. However, comparison between the median amounts of social currency available (BRL 1,000) and in circulation (BRL 400) indicate that many CDBs have a low amount of social currency in circulation.

Still considering Table 6, the group of CDBs that answered this question (41 out of 47) had a total of BRL 129,158 circulating as social currencies. However, approximately BRL 40,000 worth in Palmas is circulated in the Conjunto Palmeiras community. Thus, the Palmas social currency represented approximately 31% of the amount of social currency issued by the CDBs surveyed in 2012. However, despite the fact that the Palmas social currency, created

and managed by Banco Palmas since 2002, is considered the most emblematic of all Brazilian social currencies, recent studies have shown that its volume and circulation has decreased, leading Banco Palmas to question the feasibility of keeping it in the community. The process of Palmas use was detailed by Rigo and França Filho (2017).

Table 6 - Characterization of the initial, current, and average amounts of social currency (in legal tender) circulating in the communities

Characterization of the amount of social currency	Statistics							
	Valid/ Omissions	Total	Average	Mode	Medium	SD	Minimum	Maximum
Initial amount issued	**(42/5)**	**134,232.00**	**3,196.00**	0.00	2,000.00	4,370.70	0.00	19,250.00
Current amount available (initial + new)	**(41/6)**	**408,508.00**	**9,963.61**	0.00	**1,000.00**	31,891.50	0.00	200,000.00
Average amount of currency in circulation in territory	**(41/6)**	**129,158.00**	**3,150.20**	0.00	**400.00**	8,067.97	0.00	40,000.00

Source: Data from the direct survey (2012).

A fourth and last challenge concerns certain characteristics of the territories where the CDBs and social currencies are established. For example, proximity of the territory to the city center or other commercial areas makes it difficult for residents to become aware of local consumption, using social currency or not. This raises some questions: Why are CDBs implemented in certain areas. Is their methodology appropriate to that location? As previously seen, the social currency use is only a part of a CDB methodology. Credit to production in legal tender, social and educational activities, and other financial services are typically developed by CDBs and not necessarily associated with social currency use.

3. FINAL REMARKS

One of the relevant challenges imposed on social currency use in CDB practices is closely related to insufficient resources. Thus, problems related to monetary reserve also risk credit fund constitution for loans in social currency and narrow the issuing of social currency by CDBs in the communities. In our opinion, this challenge denotes that financial support, public or private, at the beginning of practices is essential for CDBs to reach their proposal: local development.

However, our results show that the main challenge related to social currency use in a community are the problems associated with constructing a network that accepts the social currency, especially among businesses. This task depends on awareness-raising activities conducted by CDB managers. As previously seen, CDB activities and instruments that stimulate social currency use in the community are important and contribute to the construction of legitimacy both for the bank and the social currency.

We also showed that some problems with social currency circulation could be related to specific features of the community, such as its distance from larger shopping centers. This aspect indicates that future studies relating the characteristics of the community with those of the monetary circuit constructed by the CDB should be carried out. For example, aspects such as political-party divisions and conflictual relationships could negatively influence the circulation of social currency. In contrast, aspects such as history of collective involvement and social organization could positively influence circulation.

Today, in addition to the challenges identified by our research, the CDBs and the whole field of solidarity finance in Brazil are experiencing a moment very different from that of 2012. Contextual challenges make CDB activities much more difficult. The absence of an appropriate legal framework that assists with legitimizing these associative organizations, the total disrespect of the Federal Government to the field of solidary economy, and the insignificant financial support to this public policy are examples of the difficulties that CDBs are facing and will continue to face.

Finally, it can be inferred that a legal framework for Brazilian solidarity finance could help building legitimacy to CDBs and social currencies. In our opinion, a legal framework would facilitate the access to public funding sources.

These potential funding sources are fundamental not only to improve the process of building CDBs and social currencies, but also to maintain and develop these entities. It would also assist with reducing the uncertainties resulting from governmental polices that dismantle structures and interrupt public policies built by civil society with potential to develop poor communities.

BIBLIOGRAPHY

Borges, A. (2011). Banco Palmas como uma plataforma de desenvolvimento comunitário. In: Morais, L; Borges. A. Novos paradigmas de produção e consumo. São Paulo: Instituto Polis, 249-244.

Freire, M. V. (2011). Moedas sociais: contributo em prol de um marco legal e regulatório para as moedas sociais circulantes locais no Brasil. Brasília: Thesis of Post-Graduate Program in Law, Federal University of Brasília (UNB).

Freire, M. V . (2009). Social economy and central Banks: legal and regulatory issues on social currencies (social money) as a public policy instrument consistent with monetary policy. International Journal of Community Currency Research, 13: 76-94.

Lietaer, B.; Kennedy, M. (2010). Monedas regionales: nuevos instrumentos para una prosperidad sustentable: La Hidra de Lerna Ediciones.

Meyer, C. (2012). Les finances solidaires comme biens communs durables: étude de cas de la banque communautaire de dévelopment Palmas (Brésil). Thesis of Master, Faculte de sciences sociales et politiques: Université Libre de Bruxelle.

Rigo, A. S. (2014). Moedas Sociais e Bancos Comunitários no Brasil: ações e implicações, teóricas e práticas. Thesis of Doctorate in Management, Federal University of Bahia (UFBA).

Rigo, A. S.; França Filho, G. C. de. (2017). O paradoxo das Palmas: análise do (des)uso da moeda social no "Bairro da economia solidária". Rio de Janeiro: Cad. EBAPE.BR, 15: 169-193.

Silva Júnior, J. T. (2004). Gestão, fato associativo e economia solidária: a experiência da ASMOCONP/Banco Palmas. (2004). Thesis of Master. in Management, Federal University of Bahia (UFBA).

Soares, C. L. B. (2006). Moeda social: uma análise interdisciplinar das suas potencialidades no Brasil contemporâneo. Thesis of Doctorate in philosophy and human sciences, Federal University of Santa Catarina (UFSC).

Soares, C. L. B. (2009). Moeda Social. In Cattani, A. D. et. al. Dicionário Internacional da Outra Economia: Edições Almedina: 255-259.

Vieira; M. M. F; Pereira, B. N. (2005). Estudos etnográficos em administração. In Vieira, M. M. F; Zouain, D. M (orgs). Pesquisa Qualitativa em Administração: teoria e prática. Rio de Janeiro: Editora FGV, 223 – 237.