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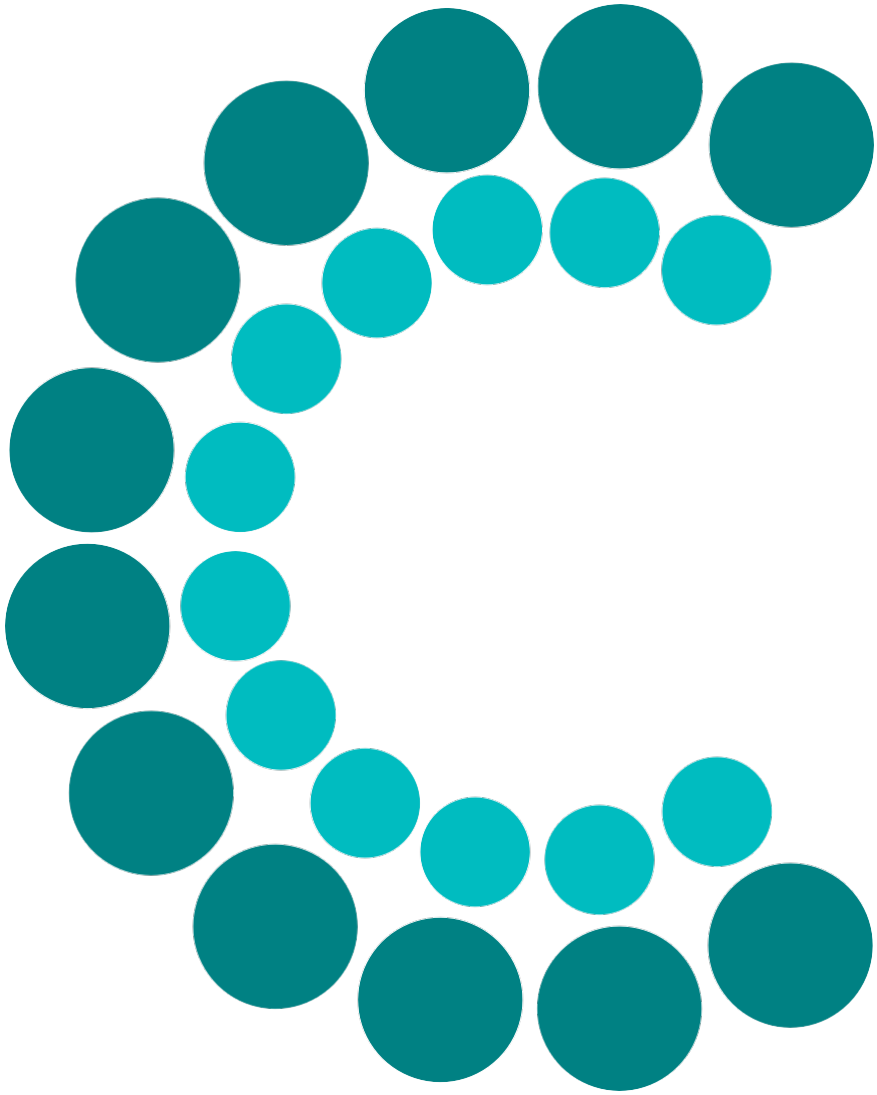

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BEYOND LONGEVITY

A LIFE-CYCLE APPROACH TO TIME BANKS

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ABSTRACT

Over the past couple of decades, scholars and activists have devoted considerable energy to envisioning and enacting alternatives to capitalism through various micro-initiatives. In addition to being small, many of these initiatives are relatively short-lived, leading critics to consider them failures. This article challenges the association of success with scale and longevity. We focus on time banks, a form of community currency organized around labor-time as the unit of exchange. While time banks have been shown to have myriad benefits for communities, very little attention has been paid to how benefits and challenges vary as time banks evolve. Rather than treating time banks as static institutions, we approach them dynamically, as entities that undergo different stages of development with evolving impacts throughout their lifespans. Drawing on over six years of qualitative research on US time banks, we model what we call a Time-Bank Life Cycle. Examining time banks through a life-cycle lens enables us to disassociate success from longevity while garnering a fuller understanding of the variety of challenges time banks face and the range of material, social, and ideological impacts they may have over the course of their lives.

KEYWORDS

Time Banks, Life-Cycle Frameworks, Complementary Currencies, Noncapitalism, Longevity, Success

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1. INTRODUCTION

Over the past decades, scholars and activists have devoted considerable energy to envisioning and enacting community-based alternatives to capitalist markets. This includes a burgeoning interest in timebanking as a response to the failings of the conventional money economy. As a unique form of community currency, time banks rearrange participants' relationship to time, money and labor while illuminating the centrality of care work as the backbone of daily life. Numerous studies have correspondingly emphasized timebanking's radical potential (Gregory 2015; Seyfang 2004; Diprose 2017; Collom et al. 2012; Cahn and Gray 2015, to name a few). Underlying such studies, however, is an inconvenient truth: the majority of time bank initiatives are small-scale and short-lived (Glückler and Hoffman 2021; Valor and Papaoikonomou 2016; Dittmer 2013). This fact raises important questions about how longevity and scale relate to success. Facing such issues, some scholars have explored how time banks might succeed better by scaling up and prolonging their lives (see, for example, North 2010; Ozanne 2010; Seyfang and Smith 2002). While we see merit in such efforts, we adopt a different tack in this paper. Rather than designing strategies for making time banks bigger and longer-lasting, we develop new perspectives on how the meaning of success might shift over a time bank's lifespan, regardless of length.

While the multidimensionality of time banks' impacts has been well-documented (Michel and Hudon 2015), little research has been conducted on how such impacts vary across different stages of time-bank development. To address this limitation, we introduce a life-cycle paradigm. Drawing on over six years of qualitative research on US time banks, we ask three primary questions: What common developmental stages can we decipher across diverse time banks? How do the challenges faced by time banks shift as they develop? And how do time banks' material, social, and ideological impacts vary across these stages? We organize our findings around what we define as a "Time-Bank Life Cycle" comprising six stages, ranging from initial conception to discontinuation.[1] This novel life-cycle model enables us to partially dissociate success from oversimplified measurements of scale and longevity. Moreover, a life-cycle model facilitates the study of time banks as dynamic organizations whose material, social, and ideological impacts shift as the organizations themselves evolve. In this light, success should be conceived as a process rather than as a static state to achieve. This approach also illuminates noncapitalist temporalities that emphasize care work; patient labors of community building; and cyclical patterns of birth, decay, and renewal rather than capitalist fixations on growth, speed and efficiency.

2. THE MULTIDIMENSIONAL IMPACTS OF TIME BANKS AND THE LIFE CYCLE MODEL

Time banks are a form of community currency that enables the exchange of services outside of the cash economy. Like other community currencies, they are designed to encourage social cooperation, mutuality, and community-building alongside the material benefits of economic exchange (Gregory 2015; Meyer and Hudon 2017). What sets time banks apart is their unique system of valuation, grounded by a refigured relationship to time and labor. Rather than relying on a scrip form of money, time banks use time as a currency. Within time banks, the value of exchanged services is defined by the quantity of time expended in providing a service, typically measured in "time credits." Such credits are logged and exchanged through a central accounting system, with payback not necessarily coming directly from the person receiving the service or at the same time as the service is provided (Cahn 2004; Gregory 2012). In this way, time banks exceed one-to-one bartering of services and offer a system of generalized exchange in which each member's hour is valued equally. This equalizing approach to labor-time is the basis for both time banks' pragmatic benefits and their more utopian aspirations.

The timebanking movement has diverse origins and development pathways (see Weaver et al. 2024; Smith and Lewis 2016; Boyle 2014). For example, in Germany and Austria, Tauschring (exchange ring) systems have origins in the wider complementary currency movement and are especially associated with Exchange Trading Systems (LETS) (Schroeder 2020; Glückler and Hoffman 2022). In Italy, time banks emerged independently out of the women's movement with strong ties to municipal councils (del Moral-Espín 2017). In Japan, the Fureai Kippu model of timebanking developed relatively autonomously with roots traceable to the 1970s and a principal focus on eldercare (Hayashi 2012). In the US context, timebanking has been heavily influenced by the work of Edgar Cahn, who first developed a timebanking framework in the 1980s. Cahn theorized timebanking as a vehicle of social justice and as a stimulus for coproduction through which communities become empowered as producers of services they

consume (Cahn 2004). Our research draws heavily from this conceptualization of timebanking even as our case studies also reveal considerable variation at local levels.

As a growing body of research has demonstrated, the potential benefits of timebanking are manifold, spanning material, social, and ideological domains. Materially, time banks offer an alternative source of economic provisioning that can reduce dependence on limited monetary resources. Economic independence, combined with the cultivation of new skills, can improve both self-determination and self-esteem while enhancing public health and addressing the exhaustion that can result from exploitative labor conditions (Boyle and Bird 2014; Gregory 2009). Socially, time banks can combat social isolation, bridge generational divides, and improve social inclusion for marginalized populations (Cahn and Gray 2021; Hayashi 2012; Ozanne 2010; Seyfang 2004). Ideologically, time banks have been linked to a radical temporal politics that decenters neoliberal discourses of work-time. Simultaneously, scholars draw awareness to the diverse time demands of informal care labor and the nonlinear temporal rationalities required to build trusting relationships (Bryson 2007; Gregory 2015; Wilson-Thomas 2021; Rice 2014). Through this reframing, time banks are thought to contribute to a feminist reordering of societal priorities and to a community economy rooted in reciprocal forms of care and concern (del Moral-Espín 2017; Gibson-Graham et al. 2013). They are thus held up as examples of prefigurative politics that both generate imaginaries of alternative economies—what Erik Olin Wright described as "real utopias"—and demonstrate their viability in everyday practices (Schiller-Merkens 2022; Wright 2010; Collom et al. 2012).[2]

One recurring shortcoming of existing scholarship is its tendency to treat time banks as static institutions. Many studies take what amounts to snapshots of time banks at particular moments in time and then use those static representations to draw conclusions about timebanking's general potential and its limitations. If noncapitalist social and temporal dynamics lie at the core of timebanking's radical potential, we believe the study of such dynamics themselves must be temporalized—they must be studied in ways that account for how time banks evolve over time and how the nature, amplitude, and radicality of their impacts shift as they develop. This is where we find a life-cycle framework to be beneficial.

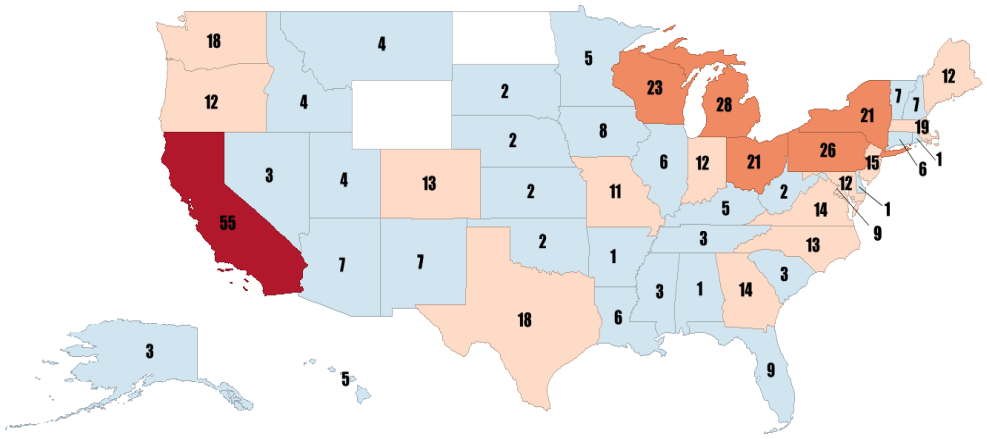
Over the past half century, life-cycle frameworks have been popular tools for analyzing corporate growth trajectories and for predicting transformations that capitalist firms undergo to survive in a highly competitive market environment (Flamholtz and Randle 2007; Greiner 1972; Miller and Friesen 1984; Quinn and Cameron 1983). Comparable models have been developed for the nonprofit and cooperative sectors (Stevens 2001; Bretos et al. 2020). Here, we map such a framework in the non-capitalist movement space of timebanking. In contrast to existing frameworks, which tend to adopt a grow-or-die orientation, our life-cycle framework is oriented around distinctly noncapitalist concerns encompassing mutualist approaches to community well-being. In line with degrowth thinking, we do not assume that growth is necessary, that efficiency is a primary objective, or that a longer life is an adequate gauge of time bank success (Banerjee et al. 2021).

The success and failure of an initiative, we argue, should be comprehended not solely by its size or duration but also in its contextual dimensions: whether it aligns with its overarching mission, attains specific goals, and influences the individuals and communities it engages. These aspects of success vary independently, and time banks may realize a diversity of successful forms throughout their lifespan.

3. RESEARCH METHOD

Using data from hOurWorld and TimeBanks.org—the two largest timebanking umbrella organizations—along with information on independent time banks drawn from our research, we generated a combined dataset of over 480 time banks spread across 48 states (See Figure 1). We then examined the relative size, location, longevity, and exchange activity of time banks across the country.

Figure 1: Time Banks across the United States (2017)



Based on this dataset, we selected a diverse subset of time banks for more detailed qualitative research. These time banks vary in their operational scale, organizational structure, membership demographics, and geographic location. Through our sampling we seek to provide a good representation of the time bank movement in the United States. The time banks we covered ranged in age from over 20 years to less than one year old, and in size from under ten members to well over a thousand. They were also at different developmental stages when interviewed. Seven were no longer active when we contacted them. Two of these never made it past the planning stage, three closed within a year of launching, and two closed after several active years. The remaining time banks had varying levels of member activity and organizational stability. Our cases are spread across the US, albeit with a large representation from the East Coast region.

On the organizational level, approximately half were directly connected to (or "embedded within") other organizations while the other half were stand-alone. Roughly a fourth had paid lead coordinators, with the rest relying only on volunteers, though this percentage fluctuated as time banks evolved. This proportion is slightly smaller than data reported by Collom et al. (2012), who found 38.3% of the US time banks they surveyed had paid coordinators. The difference may be due to our inclusion of a higher percentage of stand-alone and start-up time banks, both of which are less likely to hire paid coordinators.

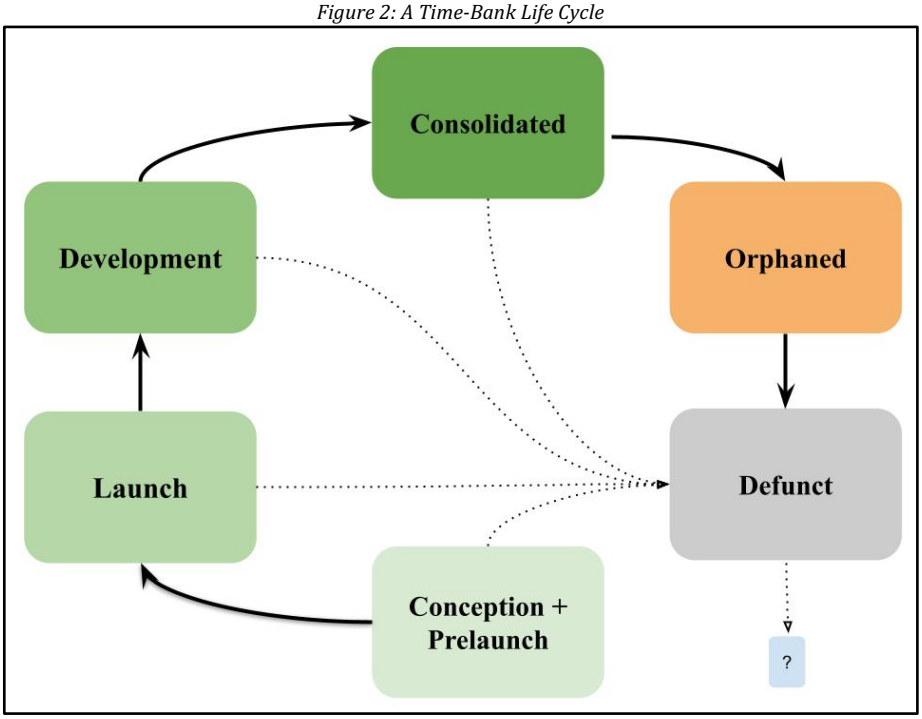
The time banks we sampled also varied in their membership demographics. Four were Black-led and explicitly organized around the empowerment of low-income communities of color. One time bank primarily served working-class immigrants. Another had a large membership of international graduate students. The remaining time banks reflected varying degrees of racial and class diversity, albeit with a skew towards middle class, white, and older membership.

In total, we conducted over thirty semi-structured interviews with current and former founders and/or coordinators of twenty-three distinct time banks (See Appendix).[3] We chose to focus on founders and coordinators because of the central role they play in time bank development and due to their unique ability to reflect on time banks' organizational dynamics and histories. A fuller study of impacts across time banks' lifespans would require engagement with a greater variety of time bank participants. In our interviews, we explored the origin, mission, history, organizational structure, membership, and practices of the time banks. We also inquired about our interviewees' roles as coordinators, their perspectives on success and longevity, and their experiences with organizational challenges and the time bank's shifting impacts over time. For those that had gone defunct, we solicited explanations of why that happened.

4. MODELING A TIME-BANK LIFE CYCLE

From this research, we identified six distinct stages of time bank development: Conception + Prelaunch, Launch, Active Development, Consolidation, Orphaned, and Defunct. Figure 2 diagrams these stages.

Figure 2: A Time-Bank Life Cycle



This framework is not intended to be either predictive or prescriptive; we are not telling time banks what they should be or become. Not all time banks go through each stage—going defunct is a possibility at any point—and those that do don't necessarily follow a linear trajectory. We instead propose the model as a heuristic and diagnostic tool for better understanding how the impacts and challenges of time banks vary over the course of their existence. In the following sections, we explore the individual stages in greater detail, identifying patterns from our interviews.

4.1 CONCEPTION/PRELAUNCH: SPARKING IMAGINATION THROUGH ALTERNATIVE POSSIBILITIES

The Conception/Prelaunch period is the crucial initial stage when founder(s) begin to envision and research how to make a time bank work in their community. Since the focus is on planning for a time bank rather than actually executing one, material and social impacts are generally limited. The main impacts tend to be ideological in nature. Designing and developing a time bank and its associated mission can be profoundly consequential for the founding organizers and crucial for the time bank's future trajectory.

One major thread running throughout our case studies is that time banks typically begin with some form of system critique. While each of the studied time banks has its own origin story, they all began with observations about the failures of existing governmental, social, and market systems to meet community needs. Timebanking provided a framework for naming such failures and for making visible the abundance of untapped abilities residing within communities.

The founder of the Cooper River Hour Share, for instance, described being motivated in opposition to the hyperindividualism of market society. Having lived abroad in more communal settings, she felt attuned to the benefits that a more interdependent lifestyle can bring.

"I wanted community togetherness and I believe in interdependency… Right now we're going through a global economic stressor. A really strong productive timebanking program helps offset a lot of that. It's just a smarter way to go about an economic front, a social front, a psychological front… We're so independent, but that's to our detriment and not to our advantage... We're a weaker, more economically disadvantaged society when we try to be independently resilient."

For her, the timebanking framework provided conceptual tools that helped her make sense of social isolation in her communities. It also offered a path for cultivating resilient forms of interdependence.

For other time banks, the founding rationale responded more directly to material conditions. Many contemporary time banks trace their origins to the 2008 financial crisis and the economic hardship induced by that colossal failure of capitalist markets. Others fashioned their time bank in response to the everyday crises of marginalization within the racialized capitalist economy. One initiative, Dane County Time Bank, was founded to address disaffected youth falling through the cracks of the criminal justice system. The cofounder of another, the Time Trade Circle, described creating her time bank to enhance support systems for vulnerable community members who had grown demoralized by interactions with government service providers:

"I wanted to find something that would allow people a social network that they could access easily and you could give back. Many of the people we worked with were so disempowered. They were receiving services which left them feeling bad about themselves."

For her, timebanking promised an empowering alternative form of provisioning rooted in mutual aid. Similarly, the founder of the Kola Nut Time Bank in Chicago described founding the time bank to foster economic solidarity within his predominantly Black and low-income community, a community that had been buffeted by disinvestment and discrimination, and wherein "people's time is valued very differently." Rather than supplanting the conventional money economy, this time bank was designed to buttress individuals struggling to get by.

Alienation was a prominent theme in our interviews. The coordinator of the Walnut Hill Time Bank, for example, described being motivated by the generational divide within her low-income West Philadelphia community. She observed how elders and young people, both marginal to conventional labor markets, had grown alienated from one another.

"We found that our seniors were actually afraid of our youth, but when you talk to the youth, you find that they do have respect for seniors. They don't mind helping out with their trash. They don't mind assisting them going to the bank. But the fear is there because the youth have their pants down and their caps on them and however they speak."

The time bank was created to bridge such divides. Several other time banks trace their origins to crises of overwork and alienation experienced by (primarily women and femme) caregivers. For overloaded caregivers, the formal accounting structure of time banks provides recognition and reciprocity for care work that is otherwise undervalued and uncompensated. These are just a few examples showing some of the sorts of system critiques behind time bank formation.

The ideological impacts of time banks during the conception stage can be meaningful even if the time banks last a short time or never launch. Founders may feel encouraged to rethink the social implication and significance of economic activities. For example, the founder of the Toledo Time Bank, which lasted only a few months, described how the time bank's main impact "was that we discovered that people were generous beyond expectations." Similarly, the founder of another time bank that failed to launch described how the process taught her "to value people and their time and the gifts that they have."

While ideological dimensions loom larger in this stage, initiating a time bank does still have material and social consequences. As much as umbrella organizations such as TimeBanks.org and hOurworld have made it easier than ever to start a time bank, individuals on the ground still must do the research, make decisions about structure and software, and build up a set of norms for how the time bank will operate. Relationship-building is also crucial at this stage. Founders typically find themselves reaching out to prospective stakeholders and community partners, putting thoughts into action while accumulating and mobilizing social networks crucial for later stages.

We found that these early labors are generally performed out of personal dedication to the timebanking concept without any expectation of compensation. This drive can make the prelaunch stage a period of high passion and motivation. Nevertheless, the need for material resources and social connections in this stage is a source of vulnerability. Two major reasons why time banks failed to launch were inadequate team support and limited founder capacity. The founder of the Cooper River Time Bank describes this:

"Nobody really was the leader except for me, and it wasn't a time in my life where I could be the leader... Honestly I really wanted to pass the baton... I actually have to have a job job. And I actually just kind of got discouraged when

[the founder of another time bank] told me how much work and dedication was put into it. I'm like, I need someone else to run it. I can't do it!"

It takes work to make it to launch, and not all founders have the bandwidth to get there.

4.2 LAUNCH: IDEOLOGICAL TRANSFORMATION AND COMMUNITY OUTREACH

Once time banks move beyond the initial planning and begin actively recruiting members, they enter what we refer to as the launch stage. Several interviewees characterized this as a dynamic period when the time bank design is tested in the community and new administrative processes are implemented. Accordingly, coordinators' work shifts to including more promotional activities, community outreach, and public education, as well as mundane tasks such as bookkeeping and website maintenance. The general aims in this period are to build out membership and operational capacity to levels where meaningful time exchanges can commence.

As time banks become reality, the nature and scope of their impacts change. Whereas the prelaunch stage ignites the imagination of founders, in the launching stage, founders seek to ignite the imagination of others. They seek to inspire community members with a model of economic provisioning and social interaction that few have encountered before. The founder of the Cowry Collective, for instance, expressed the importance of promotional labors early on, when the benefits remain largely abstract and participants must be recruited simply to get the initiative off the ground. Though membership is understandably low at the outset, enthusiasm and effort are typically quite high. Whether by organizing orientations, attending community events, or going door-to-door in neighborhoods, promoting a new time bank takes hustle. It helps to have a passionate and charismatic coordinator.

Successful timebanking also takes receptive community members. People join time banks for different reasons. Some join for explicitly ideological reasons, as the founder of Time Trade Circle described:

"There are a lot of people who just want to be members. They want to be supporting this movement of people who believe in alternative currencies or who believe in intentional communities…They want to be supporting a shared economy. They want to be supporting alternatives."

The idea of timebanking as a radical alternative to the conventional cash economy is an enticing message for some. For others, the social dimensions draw them in. A time bank in its launching phase can be a powerful banner that attracts like-minded individuals to socialize and exchange ideas. The interpersonal interactions that coordinators forge in their promotional activities have social impacts—they are reminders of what the Cowry Collective coordinator described as "the basics of connection and of life."

Still others join for more material reasons. We find clear examples of this in time banks that launched after the 2008 financial crisis, when the idea of receiving "free" services during a time of economic hardship was particularly appealing. It's worth noting, however, that people may join for the cashless services but end up experiencing social benefits. This social embeddedness differentiates timebanking as an alternative to conventional currencies and markets. Material benefits interweave with social and ideological elements to do more than merely tap into pre-existing communities. Rather, timebanking helps to constitute communities anew.

For many, the launching period is characterized by uncertainty and imbalance. As new members join and begin enjoying service exchanges, time banks' social and material benefits grow, but the scope of these benefits remains constrained by the limited exchange opportunities early on. When we examined hOurworld data we found that young time banks tend to devote a high percentage of exchanges—as high as 90%—to supporting the time bank itself. This is especially the case with stand-alone time banks that lack a paid coordinator and consequently rely heavily on "volunteers" who earn time credits by helping with time-bank operations. This imbalance reflects community support—people are giving their time to help the time bank launch. But the prevalence of bank-directed exchanges also implies that the material benefits of a launching time bank remain secondary to the social and ideological opportunities at this stage: the majority of the services exchanged are not actually going directly to members.

Additional kinds of imbalance can run time banks aground. Time banks require both giving and taking. With too little of one or the other, a time bank can flounder. Indeed, one-sidedness was a recurring source of difficulty among the time banks we interviewed. For some, getting people to offer services was the major challenge. Recruitment can

be exceedingly difficult if people do not want to give their time. The comments of the founder of River City Time Bank reflect this difficulty:

"Unfortunately, I think culturally timebanking is one of those things that's going to be a hard sell… I think people want to be served and not to serve. They don't want to have to do things for other people. People who have jobs and careers don't want to go home and do that job and career in their recreation time either, and so I think it's a hard sell in that regard."

When time is tight, contribution can feel difficult, even as needs increase. We might expect to find this pattern in a highly individualistic market society lacking a preexisting culture of interdependence and giving.

Our research also, however, revealed the reverse form of one-sidedness: people giving without taking. This pattern was especially pronounced in faith-based time banks operating within preexisting communities rooted in principles of charity. When, for example, the Toledo Time Exchange launched as a joint initiative of two separate faith communities, the founders discovered that members were resistant to the time bank idea because they did not like the idea of receiving return services from others. While generosity is typically considered a virtue, it can also present challenges.

"We found that people were generous and there were more than enough people that had skills or services that would be able to be lent to the time bank. In terms of people who wanted those services—that was challenging! People were generous, but they didn't want to be on the receiving end… more and more people didn't feel that it was right to receive something that they could have paid for or been given by somebody else."

This sentiment was echoed by the coordinator of Bridging the Bayous, a Catholic Charities time bank in Louisiana. Like the Toledo Time Exchange, this time bank did not advance past the launching phase. Despite the coordinator's best efforts to situate timebanking as a strategy for building social connection, the community did not embrace the idea: "They did not like that you had to give and expect something in return. They felt it was selfish," the coordinator recalled. Participants would consequently bank their credit hours rather than taking from others. The resulting one-sidedness led to the time bank's demise after only a few months.

Many mature time banks sustain imbalances through the creation of community accounts or through members' willingness to leave surplus time debits and credits unactivated. But a time bank requires a flow of time credits to remain operational. New time banks' tendency to face polarized forms of one-sidedness is symptomatic of a neoliberal society organized around individualist capitalist markets on the one hand and volunteerism on the other. In such contexts, charity provides a corrective to the excesses and shortcomings of capitalist markets. It is no wonder, then, that time banks would receive initial resistance both from overworked, self-centered community members and from faith communities anchored to charity models and accustomed to selfless giving in a world where everything else appears to be selfish competition. In such contexts, time banks present a paradigm outside familiar norms of interaction: they are neither charity nor conventional market. They entail horizontal forms of giving-AND-taking (not giving OR taking) that make interdependence visible in ways that charity and market transactions do not. Many time banks hope to expose and acclimate people to new understandings of economic life as a way to support new reciprocal modes of interaction (see Collom et al. 2012, 41). For launching time banks, this goal is both timebanking's challenge and its promise.

4.3 DEVELOPMENT: ORGANIZATIONAL GROWTH AND SOCIAL ENGAGEMENT

If a time bank's launch generates sufficient membership size and organizational capacity to enable regular, free-flowing exchanges, the time bank enters what we term the development phase. Here, organizational priorities shift from simply recruiting members towards sustaining and improving the time bank. As the membership expands and diversifies, the supply and demand of services generally increases. This shift presumably better enables time banks to deliver on their specific missions with expanded social and material offerings. These organizational changes also open up different opportunities for ideological impact as members become habituated to non-capitalist modes of interaction.

The work of coordinators does not end when the time bank is launched, but the nature of the work typically shifts. Time banks must be maintained. The founder of Kola Nut emphasizes this point with a garden metaphor:

"If you take a handful of seed and you just kind of go out and spread it on a vacant lot. And you're like, 'Hey, I expected this idea to just grow if I threw it out there.' But that's not how it works. It's a garden you have to keep tending to, which is why you need a coordinator, because if you just set the platform up, and you get a few people in and you leave it alone, it will wither away very quickly."

In addition to ongoing recruitment, development generally entails practices such as matchmaking, organizing regular social events, cultivating partnerships with other organizations, maintaining data, and managing membership. For embedded time banks, support from the overarching organization can ease challenges commonly faced in the prelaunch stage. For stand-alone time banks such as Kola Nut, building partnerships with other organizations and initiatives helps widen the perspective to situate timebanking as only one part of a larger solidarity economy.

For embedded time banks, these coordinating labors can help stabilize the time bank's status within the encompassing organization while also building support for larger institutional objectives. Though mundane, this sort of member management has significant ideological implications. Timebanking's most radical element is arguably its revaluation of labor time. By valuing everyone's time equally, time banks have the potential to empower people marginalized by the market economy. When member participation rates are low, however, experiencing this sort of empowerment first hand is difficult. Our interviews are replete with observations of people enthusiastically joining a time bank but failing to participate. As the Phoenixville Area Time Bank coordinator put it, "You need a core group of people who are excited and want to keep going." Without input from enthusiastic members, responsibility to stimulate member participation and ensure the time bank remains vibrant falls heavily on coordinators.

Expanded participation increases opportunities to transform understandings of self and community. For instance, during a regular potluck meeting of the now-defunct Media Time Bank, one elderly member described feeling reluctant to submit requests because she had no outstanding skills to provide in return. She was surprised by the response from the time bank's younger members, who found her sewing and cooking skills extremely valuable. We frequently heard such stories of discovery in which time bank participants learn to see, sometimes for the first time, both their own abilities and those of others. The coordinator of the Onion River time bank explains this transformation well:

"People discovered skills that somebody else has. They might have known the person, but they had no idea that they could do this or that or something else. And that's why timebanking helps to build the community. It helps build the knowledge of what each of us can do, or loves to do."

Through these processes, individuals not only learn about their community but also develop new understandings of self, cultivating new forms of economic subjectivity in the process.

In addition to such subjective transformations, time banks during their development phase can be effective at socializing members into non-capitalist modes of interaction with one another. Even among time bank members, the competitive capitalist paradigm can be hard to shake. Participants sometimes bring a capitalist mindset into their timebanking practices. As discussed previously, it is not uncommon for time bank members to "hoard" time credits like one would save money. We also heard of efforts to incorporate a rating system for services received. As the coordinator of the Southern Oregon time bank puts it, "although we were using hours, the consciousness was still modeled on dollars." The Onion River coordinator echoes this, "One of the main challenges…is that we have to think in new ways, the paradigm shift from the money economy to the time banking economy."

In the face of this incongruence, several coordinators described how participants must learn non-capitalist modes of being. The founder of Dane County, for example, characterized timebanking as a unique opportunity "to make things happen that [otherwise] wouldn't." Timebanking, she suggested, can effect a shift in mindset from scarcity to abundance. We saw this exemplified in an account by the Onion River coordinator about how timebanking transformed his thinking about debt.

"I had some things I wanted people to work with me on and then I just didn't have the hours to pay for it. You didn't want to go into the minus; you didn't want to go into the red. In the meantime, I've learned that if I'm in the red, it's not in the red as you think about it in the monetary economy. It means that I have received more help from the

community than I have given at the moment. In other words, it's like they've given me a hug. They've shown me love and I should not be afraid of being in the minus."

Rather than being a source of anxiety and a sign of individual failure, the meaning of debt in this instance is refigured as a source of social connection and an indication of community support. The Cowry Collective founder similarly described how timebanking can instill a form of communal joy that can serve as an antidote to capitalism's demoralizing consequences. In her words, timebanking can be "a fun experiment into what a utopia could be—in terms of how we get around capitalism... basically, in a way that's fun and joyful, and brings us together." These ideological transformations can occur throughout a time bank's evolution, but they appear particularly pronounced during the development stage as practices are being learned and social and material benefits are expanding.

4.4 CONSOLIDATED: LEADERSHIP TRANSITIONS AND ORGANIZATIONAL ADAPTATION

Time banks cannot rely on the efforts of their founders forever. After some time, most time banks eventually grapple with a leadership change. As a time bank's leadership transfers away from its founders, it enters what we call the consolidation phase. This transition is often difficult. Indeed, many time banks succumb after the departure of charismatic founders. Yet our interviews show that this phase also presents opportunities to enhance community impacts by democratizing leadership and renewing the time bank mission.

Across many interviews, we noted a heavy emphasis on burnout, which can occur at various points but is often thrown into sharpest focus during the Consolidation phase. Multiple former coordinators explained that their decision to leave largely resulted from feeling exhausted by the seemingly endless labor that coordinating required. The account of the Orange County Time Bank coordinator reflects the sentiments we heard widely:

"I was so excited and putting so much time and energy into it…but when it became every weekend or both days on the weekend (because I DO work full-time on top of doing the time bank on the side), I got to a point [where], because I was doing so much just by myself and others didn't have the time or weren't able to, I hit a bit of a burnout where I just couldn't maintain keeping doing it on my own. I had to take a step back."

The hustle of sustaining a time bank takes a toll on coordinators. Labors that are invigorating in earlier stages when enthusiasm is high can later become a major weight. On this score, we saw various manifestations of the so-called "founder's syndrome," wherein too much dependence on a single leader and too little succession planning left time banks in a precarious situation. As one former coordinator of a now-defunct time bank recounts:

"I didn't start with the "kitchen cabinet" as they call it, which is like the whole team. I just loved this idea and took off with it. So I didn't have anyone really who was going to keep things running when I decided I wasn't going to do it. Or I couldn't / didn't have the capacity to do it… I really didn't run it like that."

Her vision of a radical economic organization propelled her to contribute years of organizational labor, but her failure to share the administrative burden meant that when she checked out, no one else had the institutional knowledge necessary to take the torch.

Our interviewees suggested that spreading responsibilities across a collaborative leadership team supports successful consolidation. The coordinator at Time Trade Circle, for instance, argued that a collaborative leadership group was key to their successful transition:

"There's a board and the board is a working board. On that board there's somebody who does orientations. It's her job to train other people to do orientations. Then those other people can do orientations. It's somebody's job to do member help… Each person has sort of an area of responsibility."

In overcoming transition challenges, consolidated time banks continue delivering material benefits to members. Such transitions can also introduce significant new social and ideological impacts, especially if the transition entails the democratization of governance. The spread of organizational responsibility can represent a novel form of investment in a time bank. "One definite change that I've seen is people are taking responsibility more about the organization," explained one member of the Hour Exchange Time Bank. "Quite a few people have stepped up and said, 'Okay, we didn't know things were changing that way. We want to get involved and we want to help.'" The leadership change at Hour Exchange stimulated collaboration among members; rather than viewing membership

as a casual commitment, members realized they had to put energy into its cultivation. This commitment induced a stronger sense of collective ownership over the time bank's success.

Leadership transfers also give time banks opportunities to pivot their organizational objectives to new directions. Dane County Time Bank, for instance, rebranded itself as the Flywheel Skill Share after the founder parted with the organization. Flywheel also adjusted its mission, adopting a less transactional and more radical abolitionist framework critical of racial capitalism. Rather than using timebanking as a restorative alternative within the youth criminal justice system as it had at the outset, it evolved to center empowering marginalized communities around common causes outside that system.

In sum, the consolidated stage brings potential shifts in the character of time bank impacts. Consolidated time banks extend their material impact through organizational continuity. By transferring leadership roles away from their charismatic founders, time banks can augment their ideological and social impact by becoming more democratic with a higher level of membership participation. When individuals feel that some other leader is responsible, they are more likely to view membership as casual, without associated responsibilities, whereas when individuals feel responsible for the success of an organization, they are more likely to contribute labor and step up when necessary. The prior work of socializing members into timebanking norms can have carryover effects that encourage a self-organizing ethos as more seasoned members provide support for new or less motivated participants.

4.5 ORPHANED: LEADERSHIP EXIT AND INDEPENDENT EXCHANGE

An unsuccessful leadership transition does not necessarily mean the time bank goes immediately defunct. Nor does it entail that the time bank ceases to have impacts. Time banks that no longer have an active coordinator but continue to harbor time-bank activity are in what we call the orphaned phase. During this phase, the time bank continues to exist in the sense that the communication networks and software remain intact, but there is no longer a coordinator actively facilitating exchanges or promoting the time bank.

Our findings suggest that time banks often become orphaned when they fail to consolidate after the departure of a burned-out key coordinator. But this is not the only occasion when orphaning happens. Sometimes, outside events shape the outcome. The Care Village time bank, for example, became orphaned shortly after it launched in 2019. The onset of the COVID-19 pandemic undermined community outreach efforts and the coordinator eventually ceased actively promoting exchanges, even as the time bank's infrastructure remained intact. Regardless of the reason, when a time bank is orphaned, exchange activity generally declines and its material, social, and ideological impacts typically dwindle.

Despite decreased organizational capacity, exchanges often continue among existing members. As one time bank member described:

"The people that were already there and knowing who to ask, they were continuing. Last summer I did a wedding for somebody, because she knew me, and she knew that I had offered it through the time bank. For the new ones, it was hard because they didn't know where to start and who to ask."

Seasoned members do not necessarily need the initiative of coordinators to continue exchanging services with other members they know. Thanks to timebanking software, exchanges can take place without manual bookkeeping, at least for a while. And if a vibrant network of cooperation and mutualism has already been established, the formal coordination provided by the time bank may be redundant for some members. Indeed, some coordinators suggested that successful time banks might not need a coordinator. Pointing to her own burnout and recognizing that the health of her time bank was tightly tied to her involvement, one founder ruminated:

"I think a successful time bank would be one where the members end up kind of running things for themselves. There's still some aspect of coordination, I think that can come from a leadership team, but how could the energy that is needed to help keep a time bank being sustained just happen from the membership itself?"

Unlike in other phases of the Time Bank Life Cycle, when the potential for success is often tied to the efforts of the coordinator, the beneficial impacts of an orphaned time bank depend almost entirely upon the self-motivation of its members. In rare instances, the degeneration seemingly implied by the orphaned stage can occur simultaneously with regeneration as both membership and leadership structures are revitalized and re-imagined.[4]

Nevertheless, time credit exchange during the orphaned phase generally only happens among seasoned members. For newer members, the lack of coordinators makes integration into the network nearly impossible. In addition, although time credit exchanges are primarily coordinated through software, having no moderator for the time bank website means that service requests and offers easily become outdated and unreflective of the actual member base. This inconsistency negatively affects the experience of active members and their willingness to engage.

4.6 DEFUNCT: AFTERLIFE AND ONGOING IMPACT

When time bank members cease exchanging time credits, the time bank enters the defunct stage of its life cycle. A time bank does not need to progress through all the previously mentioned phases to reach the defunct stage; we have encountered examples of time banks going defunct at various points in their development.

Our interviewees nevertheless made it clear that many time banks go defunct due to the burnout of coordinators followed by unsuccessful consolidation. Without a transition strategy, consolidation is hard. What might start out as a temporary orphaning period as the coordinator withdraws can quickly develop into a pathway to permanent closure. The experience of Media Time Bank exemplifies this. After its founding coordinator left, the Media Time Bank struggled to recruit a new team of coordinators. The search for a new leadership team lasted too long. During the prolonged orphaned state, "everybody kind of forgot about the Time Bank because when they try to look for something, all the offers and requests, they expired… Because a year has passed, everything disappeared." Without the coordinator's matchmaking and recruitment efforts, the time bank's platform became outdated and undersupplied with time offers. Lacking the ability to sustain some minimum level of activity during the orphaned period, the time bank died out altogether.

In many instances, going defunct is experienced as a loss. The lack of documented exchange between members may indicate that a defunct time bank no longer has a material impact, while not having a formal organizational structure may seriously limit its capacity to mobilize the community. Yet crucially, we suggest that being defunct is not necessarily the same as failure. If success is tied to impact, then time banks can, in some circumstances, continue to succeed long after they have ceased to formally exist. Many former coordinators agree. While a defunct time bank no longer records time credit exchanges, its former members may still exchange services independently. In some instances, going defunct might even be an indication of success, suggesting the time bank has helped achieve its aim of fostering robust community engagement more generally. Asked to speak about the potential for success in timebanking, the founder of Kola Nut time bank offered up the Cowry Collective as an example:

"What I tell folks about the experience of Cowry Collective is that even though that timebank wound down, the connections and relationships that were made inside of that time bank continue to form in themselves, and in things like solidarity economy St. Louis, you know, and other community endeavors that are happening out that way."

He saw the success of Cowry Collective as ultimately tied not to its continuing existence but rather to the enduring relationships it initiated and to the further economic experimentation in economic solidarity it inspired, asking us to complicate our understanding of failure. The Cowry founder herself echoed these sentiments:

"I visited one of my friends in her apartment, maybe it was last year. She put out a sign-up list of offers that people could do and exchanges they could set up on their own, and she didn't even mention it [to me]... So it was kind of neat to see how something that she had learned of through me and the time bank, she was trying to replicate on a smaller level just by trying to get to know her neighbors in an apartment complex."

As an impetus for social and economic change, the Cowry Collective was successful far beyond the lifespan of its formal exchanges. Throughout its life cycle, the time bank forged communities, incubated friendships, and inspired creative new actions. Some time banks are even more directly involved in launching other community initiatives that outlive the time bank itself. The now defunct Media Time Bank, for instance, helped to nurture several community initiatives that outlived its own existence, including a free store and a mutual aid group among acquainted former time bank members. By seeding other organizations, a defunct time bank can still make a material and social impact, not unlike the way the decomposition of organisms gives life to others in a healthy ecosystem.

Here, the notion of success of a time bank is again broadened. Ultimately, time banks are one of many tools community organizers use to promote solidarity and mobilize resources. Of course, in some contexts, we see timebanks go defunct due to a failure to respond to myriad challenges of ongoing existence. Yet, in others, going defunct can be an indication that the time bank has realized its principal objectives. The founder of the now-defunct Walnut Hill Time Bank hints at this outcome when reflecting on her time bank's social and ideological impacts:

"The outcomes that we get from the time bank I think are countless and I think it affects people's lives, the people in this community and other communities. It's such a personal and positive effect… I think you can change people's lives in a year and if it fades out, that's okay."

Even more radically, some even consider the most successful time banks to be the ones that no longer need to exist—the ones that have succeeded in building a strong community with a strong sense of solidarity and mutual assistance. As the coordinator of the Riverside Time Bank puts it, "In some ways, I guess it's just you want people to do it without really even having to record it, where they're just offering to help each other… the vision or mission of the time bank is just to get people helping each other." The founder of the Cooper River Time Bank shared similar sentiments. Even though her initiative never publicly launched, she says it transformed her thinking. "I just enjoyed learning about it. I enjoyed just knowing there's a better way to live. I feel like as a society we're one of the worst with how we think about what success looks like. So I like knowing that there's a different version of success."

5. CONCLUSION

There is a tendency within mainstream political economic discourse to associate success with longevity. From such a perspective, noncapitalist economic initiatives such as time banks that might be relatively short-lived are readily discounted as implausible alternatives to conventional capitalist institutions. We, by contrast, have argued that time banks should be approached as dynamic institutions that evolve over time and have varying impacts at different stages of their development. We cannot fully appreciate their potential or the various challenges they face without understanding such developmental phases in context.

We have modeled a time bank life cycle to address this gap. The idea of an organizational life cycle reinforces that organizations are by their very nature finite, with beginnings, endings, and stages in between, all requiring analysis. Adopting a life-cycle lens helps shift the focus away from seeing endings as failures and longer life as inherently better. A life-cycle lens also invites reconsideration of what success means and how it might vary across different stages of an organization's development, challenging underlying presumptions. Examining time banks at various stages provides valuable insights into their nature and their capabilities.

Ideologically, we have revealed qualitative differences in time banks' transformational potential, contingent on coordinators' roles during the different stages and whether they are conceiving the idea, spreading the word, or habituating members to noncapitalist routines in later stages of their time bank's development. We also saw that time banks' material costs and benefits shift in both quantitative (i.e., how many exchanges are happening) and qualitative (i.e., what sorts of exchanges are happening) ways across the different stages of development. The social impacts also shift as time banks move from the exhilarating periods of conceptualization and launch to more routinized forms of social interaction in the later stages, and ultimately to the consolidation and dormancy of the initiative.

Attempts to further develop the time bank lifecycle and associated understandings of success and failure would be well served to collect qualitative evidence from a wider diversity of time bank practitioners, with a particular emphasis on non-leader participants. While focusing our data collection on leaders enabled our team to get a deeper look at the organizational priorities and challenges at different stages in our proposed lifecycle, furthering these ideas requires developing our collective understanding of how participants experience these visions and practices of coordinators.

Of course, no time bank lasts forever. Some fail to achieve even basic degrees of functionality and others fail to realize the vision of the founder(s). But by interrogating the nature of dormancy, we have also shown how even time banks that are orphaned and defunct can have enduring transformational impacts. Indeed, some practitioners even measure success by how vibrant the community is independent of the time bank's existence—a successful time bank may be one that has made itself redundant.

We see our findings as powerfully useful for time bank practitioners, who can reference a life-cycle framework that can help them anticipate challenges and plan for the future. While the life-cycle framework developed here is idiosyncratic to time banks, we also see the implications of this study as valuable for other sectors and economic forms. Making noncapitalist endeavors and their stages visible can embolden people to imagine and enact alternatives.

Furthermore, shifting the paradigms of success in these ways can alter how we evaluate the marginality of economic alternatives within prevailing capitalocentric discourse, which tends to represent capitalist institutions as the only viable form of economic provisioning even as diverse noncapitalist economic practices pervade day-to-day life (Fisher 2009; Gibson-Graham et al. 2013). A double standard underlies such capitalist realism. Whereas the rapid rise and collapse of capitalist firms is regarded as a normal aspect of competitive markets—a reflection of the creative destruction that gives capitalism its vitality—for noncapitalist economic initiatives such as time banks, being short-lived is taken as an indication of failure and as a basis for further discounting the very pursuit of economic alternatives. In this light, shifting focus away from longevity and towards different developmental stages can illuminate meaningful and radical ways that alternative economy initiatives impact people's lives even beyond their physical presence. This more layered approach can help diversify the repertoire of emancipatory economic action while enhancing appreciation of what Zanoni et al. (2017) describe as "post-capitalist politics in the making."

We wish to conclude with the words of the founder of the Onion River time bank.

"I've been on call with other time bank coordinators about exactly this question: 'What is a successful Time Bank?' … And the main thing we can come up with is that there is a living community. That people are doing things with each other. That they're working together, supporting each other. Essentially, a form of mutual, and underline the word mutual, aid. We help each other."

If time banks, like so many other alternative economy initiatives, are tools to improve community life, then it seems that success should be measured not by the long life of time banks but by the improvements to community life they have made possible.

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APPENDIX: TIME BANK CASE STUDIES

NAME	Location	Years active	Size*	Status at time of interview(s)
Archcare Time Bank	New York, NY	2006-	Large	Consolidated
Arroyo SECO Network of Timebanks	Los Angeles, CA	2008-	Medium	Consolidated
Bridging the Bayous (Catholic Charities Time Bank)	Houma, LA	2016-2018	Very Small	Defunct
Care Village Community Exchange	Carlsbad, CA	2019-	Very Small	Orphaned
Cooper River Hour Share	Collingswood, NJ	2013-2013	Very Small	Defunct
Cowry Collective	St. Louis, MO	2009-2018	Small	Defunct
Flywheel Skill Share (Dane County Time Bank)	Madison, WI	2005-	Large	Developing/Consolidated
Hour Exchange Portland	Portland, ME	1997-	Medium	Consolidated
Kola Nut	Chicago, IL	2018-	Small	Launching/Developing
Media Time Bank	Media, PA	2011-2019	Medium	Consolidated/Orphaned
Neighbor2Neighbor (Community Exchange)	Allentown, PA	1999-	Medium	Consolidated
Onion River Exchange	Montpelier, VT	2008-	Medium	Consolidated
Orange County Time Bank	Long Beach, CA	2011-	Medium	Defunct
Phoenixville Area Time Bank	Phoenixville, PA	2004-	Small	Consolidated
River City Time Exchange	Evansville, IN	2014-2014	Very Small	Defunct
Riverside Time Bank	Riverside, CA	2015-	Small	Defunct
Silver City Gospel Mission Time Bank	Silver City, NM	2016-2017	Very Small	Defunct
Southern Oregon Time Co-op	Ashland, OR	2010-	Medium	Consolidated
Time Trade Circle	Cambridge, MA	2005-	Large	Consolidated

Toledo Time Exchange	Toledo, OH	2013-2014	Very Small	Defunct
Unity in Our Community Time Bank	Detroit, MI	2010-	Large	Consolidated
Valley Time Trade	Northampton, MA	2002-	Medium	Consolidated
Walnut Hill Time Bank	Philadelphia, PA	2007-2015	Small	Orphaned/Defunct
* Very Small=fewer than 20 members; Small=20-200 members; Medium=200-1000 members; Large=above 1000 members				

ENDNOTES

[1] The idea that time banks have distinct life cycles was introduced to us by Terry Daniels, cofounder of hOurworld, who suggested that time banks go through developmental stages defined by the shifting responsibilities of coordinators.
[2] More skeptical analysts contend that time banks are more symbolic than substantive and that they shore up capitalism's excesses by reproducing neoliberal articulations of self-help as an alternative to the welfare state (Dittmer, 2013; Valor and Papaoikonomou, 2016).
[3] Interview protocols received Human Subjects approval through Haverford College's institutional review board. All interviewees completed consent forms.
[4] Bretos et al. (2020) observe similar patterns in the life cycle of cooperative organizations.

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CONVERTIBLE LOCAL CURRENCIES FOR THE ECONOMIC DEVELOPMENT OF SUSTAINABLE COMMUNITIES, FINDINGS FROM AN ANALYSIS OF NINE FRENCH LOCAL CURRENCIES

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ABSTRACT:

Alternative currencies have become a growing phenomenon in grassroots social innovation. Convertible local currencies are one of the main forms they take in France. Despite the abundance of theoretical literature on this subject, empirical evaluations remain scarce due to limited data availability. To address this gap, we conducted an econometric evaluation of the impact of using CLCs on firms' turnover. This evaluation employs a two-way fixed-effects model using data from the Fare file, a dataset containing tax information for all French firms from 2009 to 2019. Additionally, we selected a control group through propensity score matching in the Fare file. Our analysis reveals a 10% in turnover for small and medium-sized firms using one of the nine CLCs included in this study. Consequently, we conclude that CLCs support the economic development of a localized community of actors who are chosen for their commitment to ethical and sustainable production practices.

KEYWORDS:

Convertible Local Currency, Local Development, Sustainable Development, Two-Way Fixed Effects Model

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1. INTRODUCTION

Numerous grassroots innovations are emerging in response to the challenges of the ecological and social transition, aiming to transform production systems to make them more sustainable and resilient. Among these social innovations, monetary innovations arise in the form of alternative currencies, which have undergone a significant revival in Europe following the 2008 crisis and continue to grow in response to the environmental crisis (Seyfang and Longhurst, 2013a, 2013b). In France, convertible local currencies (CLCs) are among the most prevalent forms of these currencies. Their number soared in France in particular during the 2010s, with a tenfold increase in the number of CLCs in circulation between 2011 and 2019 (Blanc, Fare, and Lafuente-Sampietro 2022). By the end of 2019, 82 CLCs were circulating in France, covering nearly 30% of French municipalities. The extent and rapid spread of this phenomenon during the 2010s have equally sparked interest of public authorities and been further supported by the them (Magnen and Fourel, 2015) with legislation regarding the status of CLCs drafted in France in 2014. In addition, activist organizations present them as potential tools for ecological and social transition (Mouvement SOL and Cabinet Transformation Associés, 2021). This growing number of projects and the attention CLCs' garnered in France lead us to question their social, economic and environmental effects from an empirical point of view. While local currencies have already been evaluated several times for their social impact in terms of trust (Alia and Spiegelman, 2020; Richey, 2007) or social representations (Tichit, 2019), few studies have assessed their economic effects (Michel and Hudon, 2015).

Convertible local currencies are monetary instruments used for specific purposes that circulate alongside national currencies in a given territory (Blanc 2018b). They are created and managed by non-profit organizations, sometimes benefit from the support of local public authorities, and can take the form of either paper banknotes or digital payments devices. Their distinctive feature is the way they are issued: currency units are created through the exchange of national currency units for local currency units at a fixed rate. The units obtained can then be used in stores, companies, associations or institutions inside the territory that accepts it as a means of payment. The national currency units exchanged to acquire CLCs are held in a guarantee fund, allowing CLC to be converted back into national currency, subject to specific conditions set by the issuing organization. While conversion back to national currency is generally prohibited for individual users, companies are authorized to do so, albeit at the price of conversion fees or, at least, the implicit costs associated with the exchange process.

CLC's are presented as instruments to support the development of territorial economies by promoting the networking of local actors and supporting local consumption of local income (Dittmer 2013). However, while there is abundant literature on the potential economic effects of CLCs, the measurement and empirical evaluation of CLCs remain inadequate and require further investigation (Michel and Hudon, 2015). Krohn and Snyder (2008) have attempted to measure the effects of local currencies on economic development by comparing growth in US cities that have local currencies versus those that do not. However, they failed to show that local currencies had any significant impact. Nevertheless, we believe that the municipal scale they chose is too large to measure a general effect, due to the low territorial coverage of CLCs (Matti and Zhou, 2022; Michel and Hudon, 2015). Moreover, the purpose of CLCs is not necessarily to develop an entire locality but rather to foster a territorial community selected for the commitment to ethical and sustainable practices of its actors. Our study therefore focuses on this specific community that uses the CLC to assess its potential to support a targeted economic growth among actors engaged in sustainable economic practices. Our analysis is thus positioned at the microeconomic and individual level of the activity of CLC member companies.

At the microeconomic level, several studies have already demonstrated the positive effects of using an alternative currency on users' income. Colacelli and Blackburn (2009) estimates that users of Trueque, a set of inconvertible local currencies in Argentina, experienced an average income increase of $35 per month, which represented 17% of the average monthly income in Argentina at that time. Ruddick (2011) also estimates that the microentrepreneurs who are members of the Eco-pesa local currency in Kenya saw an average income increase of 22%. Therefore, positive impacts on income have already been observed. However, these currencies circulate in contexts of currency crisis, or within territories facing significant

economic difficulties (Gómez, 2010; Gómez and Dini, 2016), and are a different type of alternative currencies compared to CLCs, where users are often households wearing two hats, as both consumer and producer. As such, the results of these evaluations may not be generalizable to more favorable economic contexts and to Western CLCs, whose economic impacts are currently empirically evaluated only by qualitative work that concludes from 27 interviews that CLC's have no impact on local procurement and production (Marshall and O'Neill, 2018). In this paper, we use a quantitative method to assess how CLCs support the economic development of selected producers who use them. We therefore develop a theoretical model explaining the gains producers can derive from using CLCs, and an empirical measure of these benefits.

We thus evaluate CLCs to estimate their impact on the economic activity of firms using them, measured in terms of turnover. First, we introduce a theoretical model that explains the constraint and points out mechanisms likely to lead to an increase in firms' output. We then conduct an empirical analysis at a micro level, using a public policy evaluation approach. This involves considering CLCs as instruments used by certain actors and evaluating their impact by comparing turnover variation between a test group using a CLC and a non-user control group. To this end, we accessed the business records of members from 9 French CLCs in circulation from 2012 to 2019 (n=1,700). We then collected their production information from the Fare file, a dataset from the the French General Direction of Public Finances that compiled annual tax data for all French companies in the market sector from 2010 to 2019. The file's comprehensive nature allows us to select the control group through propensity score matching, and its longitudinal data enables us to estimate the effects using a two-way fixed effects model, facilitating the econometric identification of the impact (Hoynes et al., 2016; Stevenson and Wolfers, 2006).

We obtain promising results, indicating an approximate 10% increase in sales for small and medium-sized companies due to their membership in a CLC.

We will first outline the theoretical model that details the positive effect using a CLC on firms' economic activity (2). Next, we will describe the impact identification strategy (3), the data used (4) and the process of selecting the control group through propensity score matching (5). Finally, we will present the results of our estimations (6) and discuss them in the conclusion (7).

2. THEORETICAL MODEL: THE IMPACT OF USING A CLC ON THE FIRMS' OUTPUT

In this first part, we present the constraint and signal mechanisms we have identified to support the hypothesis that using a CLC has a positive impact on companies' business activity.

The monetary boundary constraint effect

CLCs are issued when users exchange units of national currencies into local currencies. This process creates a relatively tight parallel monetary circuit[i], which imposes a constraint on users' spending behavior and compels them to exchange with each other (Fare, 2016). Indeed, while income earned in national currency can be used to purchase goods and services from any other national actor, income received in CLCs can only be used within the network of other CLCs users. To utilize the CLC units obtained from trade, users must interact with one another to spend them. Therefore, CLCs influence consumption choices by directing them toward goods and services sold or produced in the users' network. The constraint imposed by CLCs on actors' spending opportunities is therefore expected to attract new clients to CLC member firms or encourage existing clients to purchase more from them, thereby increasing demand.

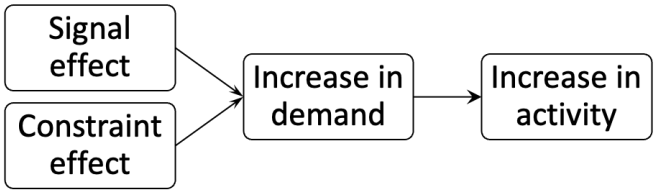
The signal effect

Beyond this first mechanical effect, the acceptance of a CLC signals a distinction between firms and their competitors. Joining a CLC is not a neutral step for companies. Firms that opt to use a CLC tend to have a specific profile, especially in terms of their territorial attachment and production practices. Although there is an initial self-selection process where companies choose to join a CLC, managing organizations also ensure that applicants comply with the ethical standards they advocate, such as environmentally-friendly and sustainable production practices (Blanc and Fare 2016). Selecting company members is akin to a labeling process. Hence, accepting CLCs as a means of payment allows companies to assert their

membership in a values-based community, setting themselves apart from the rest of the market and creating a distinct market segment (Akerlof, 1970). It acts as a signal, which may encourage consumers and companies with similar values to purchase from these companies rather than a competitor. This signaling effect, along with the previous constraint, should draw new customers to firms that accept CLCs as payment and thus increase demand for their products. Through the signal effect, users will potentially choose to purchase from a company because it accepts CLCs, even if they do not use CLCs to buy its products. For this reason, it also appears crucial to measure the impact of CLC use on overall turnover, not only turnover in CLCs.

The redirection of demand from CLC users to businesses within the monetary community, whether through the mechanical constraint on their spending ability or the signal sent by CLC acceptance, may result in additional demand for CLC member companies and thus enable them to increase their total turnover.

Figure 1 - Theoretical model: the effects of using a CLCs on firms' activity



Source: Author's illustration

These theoretical mechanisms are empirically corroborated by the results of an online survey of French CLCs users (Mouvement SOL and Cabinet Transformation Associés, 2021). Among the respondents, 33% of businesses (n=432) and 55.5% of individual users (n=1,417) reported having found new suppliers or providers within their CLCs members since they began using the currency. In addition, 40% of businesses and 74% of individual users indicated that they had already chosen at least one provider over another because they used the same CLC. Furthermore, 73% (n=102) of businesses reported an increase in customers since joining the CLCs, with half of them noting a significant rise. However, while this data confirms the legitimacy of the proposed mechanisms and hypotheses, it does not provide sufficient evidence to determine the full extent of these effects and their consequences for productive activity.

3. IDENTIFICATION STRATEGY

To measure the effect of using a CLC on firms' sales, we employ a two-way fixed effects model using longitudinal data. Through this approach, we aim to observe changes in firms' activity before and after they start accepting CLC as a means of payment. The two-way fixed effects model is suitable for a project with diverse entry dates and longitudinal data (Callaway and Sant'Anna, 2021; Goodman-Bacon, 2021; Imai and Kim, 2019). The method involves adding individual dummies to a linear model to control for all invariant and unobserved characteristics of the firms that could influence both their economic activity and their decision to join a CLC, as well as annual dummies to control for business cycle effects affecting all firms simultaneously. Fixed effects help mitigate the risk of omitted variable bias due to unchanging individual characteristics.

The estimated linear model is:

$$CA = \beta_1 \, IdMLC + \beta_2 \, Caract_{it} + c_i + t_t + \varepsilon_{it}$$

IdMLC is a dummy variable that takes the value 1 when the firm is a member of a CLCs and 0 when it is not. The index *i* indicates individual variation, while the index t indicates temporal variation. The variable c_i represents static individual characteristics, or the individual fixed effect, and the variable t_t represents the time fixed effect, which is consistent across individuals but variable over time. The variable ε_{it} is the error term, capturing unobserved, time-varying individual characteristics. The β terms are the coefficients of the model, with β_1 being the coefficient for *IdMLC*, the variable of interest and thus the target of the estimation. The individual, but time-varying control characteristics $Caract_{it}$ are demographic (category of firm size, sector of activity, legal status, number of full-time equivalent employees) and spatial (employment area, CLCs zone and communal density).

4. DATA PRESENTATION

In this section, we describe the data combined to build the database used for the econometric analysis: the register from 9 CLCs and the Fare file, that contains tax information for French firms from 2010 to 2019.

CLC's membership registers

To identify firms that are members of CLCs, we compiled a list of firms that had joined 9 French CLCs, including their registration dates, resulting in a total of 3,465 organizations that joined one of these CLCs between 2012 and 2021 (Table 1). We contacted the CLCs through the two main French local currency networks: the Sol movement and the MLCC network, which forwarded our request for data-sharing to their members. These 9 currencies that responded positively to our request are among the largest and most sustainable in France, falling within the top three clusters of CLC size as defined by Blanc and Lakócai (2020). They represent over 10% of French CLCs at that time and gather just over 40% of all CLC member organizations in France during this period (Blanc, Fare, Lafuente-Sampietro, 2020). Thus, while they may not be representative of the majority of CLCs, they encompass enough companies to construct a sufficiently large and reliable sample. Although two of these CLCs are experiencing serious difficulties in 2024, the others are all still circulating, including one undergoing a merger as of 2021, the time of the study.

Table 1 - List of CLCs' member companies

CLC	First year of activity	Number of organization members
Cairn	2017	561
Doume	2014	401
Eusko	2012	1,137
Florain	2017	197
Gonette	2015	557
Moneko	2015	56
Pêche	2013	141
Pive	2019	255
SoNantes	2015	160
Total	X	3,465

Source: CLCs membership registers

We obtained the official Siren[ii] identification numbers of member firms using a web scraping script. Since the Fare file covers 'market enterprises participating in the productive system with the exception of enterprises in the financial sector [...] and agriculture' (Insee 2022), non-profit organizations without commercial activities, as well as most agricultural enterprises and public administrations, were removed from the study. Their activity and accounting are not comparable to those of market companies, which explains why the Fare file excludes them from the list of other organizations. Therefore, limiting the scope to organizations with market activity allows for a more homogeneous sample of actors to compare, whose activities are more aligned with the study's objectives. As a result, the number of organizations selected and included in the Fare file and the list of CLC member organizations is 1,895.

The Fare file

The primary source of data is the Fare file, which contains tax information and consequently, production information, for French firms from 2010 to 2019. It is longitudinal and comprehensive, covering all French companies in the market sector involved in productive activity, except for those in the financial and

agricultural sectors. Firms are identified in the file by their public Siren[ii] identification number. For each year, the file includes approximately 190 variables related to the statistical status of the observation, the identification and administrative details of the enterprise, and the fiscal information of the activity.

Table 2- Number of observations in the Fare file by year

Year	Observations
2010	3,340,887
2011	3,737,728
2012	3,866,486
2013	4,224,263
2014	4,385,731
2015	4,052,206
2016	4,245,075
2017	4,188,215
2018	4,290,267
2019	4,456,558
Total	43,677,123

Source: Fare file

Based on the registers of the 9 CLCs and web-scraped Siren identification numbers, we identified CLC member companies in the Fare file and labelled them as the test group. To select the control firms for the experiment, i.e., firms that are not members of CLCs, we used a propensity score matching model. We sampled firms located in the same employment zones and belonging to the same sectors of activity as those in the test sample to ensure they experienced similar economic contexts. Since CLCs' territories rarely overlap, we could be confident that unidentified firms in these areas are unlikely to be users of another CLC.

However, this approach introduces the possibility of negative externalities for the selected control group, as the decision of a tested firm to enter the CLC may negatively impact the activity of other firms in the same locality, such as through customer transfers. Nevertheless, we believe this effect to be limited given the large number of firms in the employment areas and the small size of the CLCs. And, although the measured impact accounts for this crowding-out effect, since the CLCs' aim to develop their communities even at the expense of other territorial communities, it remains an interesting outcome.

We also chose to restrict the samples to firms included in the 2019 year of the Fare file. This choice allows us to factor out firms that ceased their activity, which would result in data gaps for the most recent years that are difficult to interpret in relation to the effects of CLCs. Indeed, a large proportion of businesses, particularly small ones, have very short lifespans, as they correspond to temporary or complementary activities for their founders. On the other hand, businesses that choose to integrate a CLC typically demonstrate a commitment to a more sustainable entrepreneurial model. After applying this restriction, 1,701 firms were retained in the test group, representing 90% of the firms in the test sample. Meanwhile, the pool of potential controls, this decision resulted in retaining only 1,054,053 firms, or 53% of the firms in the sample. The restriction therefore seems to bring the profiles of the firms in the pool of potential controls and the test sample closer together, as the CLCs member firms tend to have a more extended period of activity compared to the average French firms.

Lastly, we removed imputed values for certain firms in specific years, which are particularly large for microenterprises with no employees. We also retained only observations of firms from their second year of activity onward and for the years in which their turnover is different from 0. Some firms may have been founded early in their first year and others in the last half of the year, leading to an unequal number of

semesters in the comparison between the first year and subsequent years. The restriction to turnover other than 0 is based on the hypothesis that zero turnover indicates an absence of activity that year, without necessarily being linked to a production issue. This results in a final test sample of 1,268 firms, of which 1,182 have a non-imputed value in 2019.

Table 1 - Companies by years of Fare

Year	Test Group		Possible controls
	Total	Companies using a CLCs	
2010	529	0	360,121
2011	571	0	396,867
2012	629	22	423,809
2013	650	111	452,246
2014	709	159	478,718
2015	793	247	533,862
2016	872	380	575,630
2017	988	549	625,651
2018	1,053	736	668,560
2019	1,182	1,038	699,205
Observations	7,976	3,242	5,214,669

Source: Fare file, years 2010-2019

5. CONTROL GROUP SELECTION USING A PROPENSITY SCORE MATCHING MODEL

Companies that register with CLCs through self-selection and are approved by the issuing organizations have a different profile from average French companies. To control for this self-selection bias, we select a control group with observable characteristics that closely resemble those of the companies that have chosen to use CLCs. For this purpose, we use a matching method based on observed characteristics (Colacelli and Blackburn, 2009; Quantin, Bunel, and Lenoir, 2021). Given the heterogeneity in the dates of enrolment and first observations in the Fare, we applied the matching model by cohorts, defined by the first year of observation and the year preceding the test firms' enrolment in a CLC (Quantin, Bunel, and Lenoir 2021). Thus, controls are selected according to their characteristics in the year when test firms are first observe in the cohort and in the year before test firms join a CLCs. We opted for a nearest-neighbour model, with a distance measured by propensity score, which is estimated by logit regression. However, we enforced exact matching by CLCs region, sector of activity and date of business creation that is close to that of test companies. The aim of this model is not to predict a firms likelihood of joining a CLC, but to select firms with similar characteristics whose sales would exhibit comparable variation without CLC participation. The controls used to calculate the propensity score include the year firm was established, its sector of activity, legal status, employment zone, communal density, turnover in the first year of the cohort, variation in turnover between the first and last year, number of full-time equivalent employees for both periods, and profits for both periods.

We selected three times as many control firms as test firms in each cohort, based on their propensity score. When fewer firms than three times the number of test firms in the cohort obtained a sufficient score or met the restrictive conditions, only those firms that satisfied these criteria were selected. This procedure resulted in a sample of 3,368 control firms. Additionally, we selected a random control group of 3,843 companies to assess the impact of this selection method on the final results of the study.

In addition, due to the high variability of turnover at the upper distribution levels, which significantly affects the average turnover, we removed 1% of companies with the highest turnover in the first year of observation in the Fare file, i.e., those with a turnover exceeding €16,000,000. This adjustment resulted in a final sample comprising 1,268 test companies, 3,334 matched controls, and 3,821 random controls. The descriptive statistics of these samples confirm that the characteristics of the matched control sample ("PPM") are more closely aligned with those of the test sample compared to the random sample (Annexe 1, Table 4).

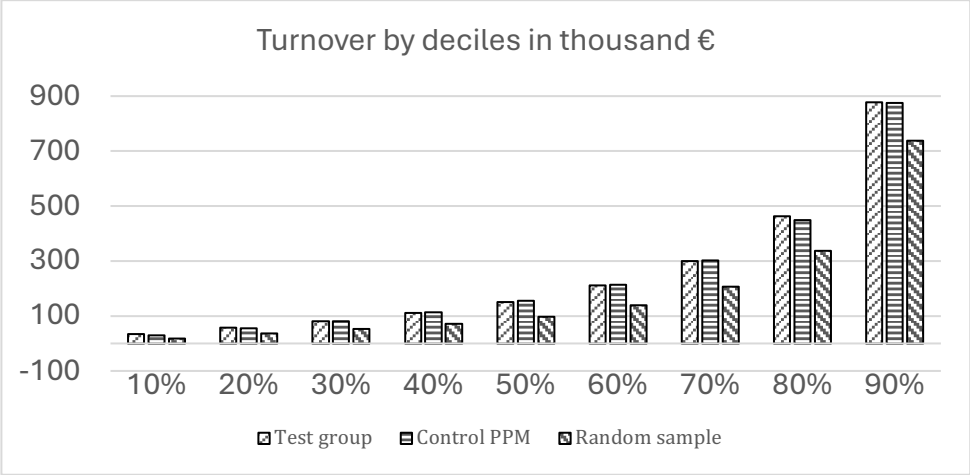
Table 4 - Turnover in the samples

Indicator	Test (n=1,268)	PPM Control (n=3,334)	Random Control (n=3,821)
Average turnover in first year	€439,857	€399,169	€361,963
Median turnover in first year	€151,385	€156,295	€97,920

Source: Fare file, years 2010-2019

Since turnover is the variable of interest in this study, we have analyzed its distribution across the different samples with greater accuracy (Figure 2).

Figure 2 - Turnover by deciles in the firms first year of observation



Source: Fare file, years 2010-2019

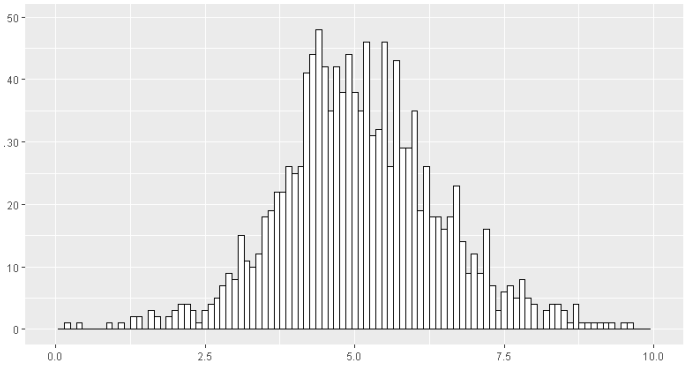
In the first year of observation, the distribution of firm turnover in the test and matched control groups is more similar than in the randomly selected control sample. The characteristics of the test and matched samples somewhat deviate in the years before joining a CLCs and show slight divergences in evolution (Annexe 2). However, because firms enter CLCs at different times, comparing turnover trends appears less meaningful, as test companies are gradually changing status, while the controls remain unchanged.

Since turnover does not follow a normal distribution, its use in the model requires logarithmization, which transforms the interpretation into relative variation. The logarithm distributions of turnovers are quite similar for the turnovers of the test and control selected by PPM samples in the first year of observation, as well as in the year before entering a CLC. In contrast, they differ more when compared to the random sample (Figure 3)

Figure 3 : Distributions of the logarithm of turnovers

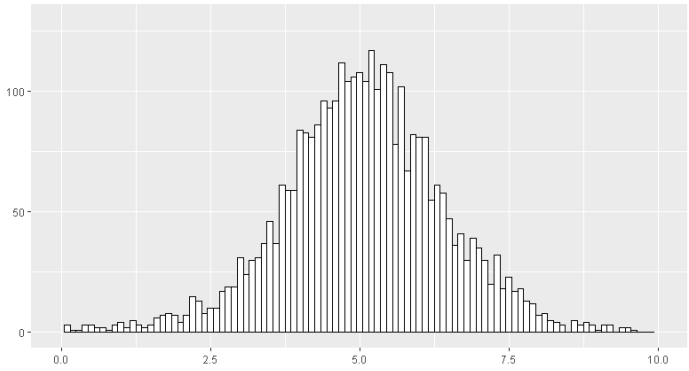
Test Group

1st year of observation



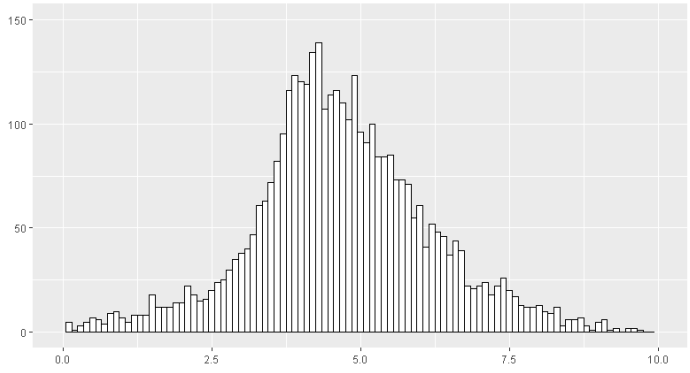
Control PPM

1st year of observation



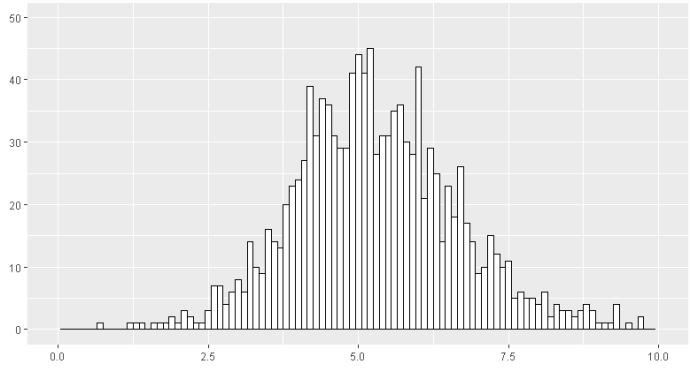
Random Sample

1st year of observation



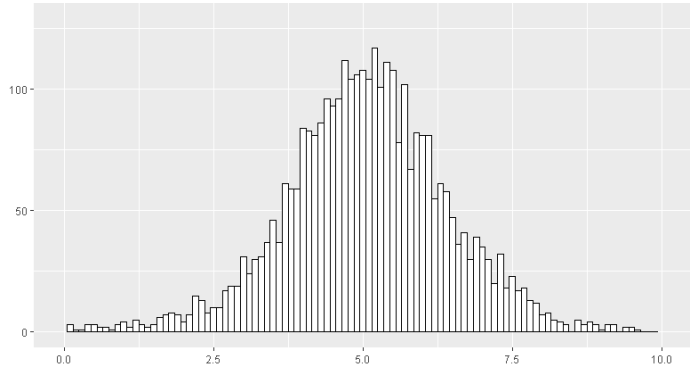
Test Group

Year before joining a CLC



Control PPM

Theoretical year before joining a CLC



Source: Fare file, years 2010-2019

6. RESULTS

In this section, we present the results of the models estimated using the plm R package (Hsiao, 2014). We begin by presenting the model estimated on the complete samples. We then perform additional analyses by estimating models for different firm categories and CLCs size. We also estimated the model by transforming turnover, which is the dependent variable, into logarithmic form to estimate the relative change in turnover.

As the data are heteroskedastic (Breusch and Pagan, 1979) and the residuals are auto-correlated, we calculated the precision of the estimated parameters using a correlation matrix that accounts for individual and temporal aggregations (Colin Cameron and Miller, 2015; Thompson, 2011) by employing the vcovDC function in the plm R package (Hsiao, 2014).

General results

The general model containing all observations yields a weakly significant result for the matched control group, estimating an increase of approximately €40,000 in turnover associated with accepting a CLC as a payment method (Table 5). This effect is tendentially positive, but the variance is too high to draw firm conclusions about its magnitude. The estimate of the relative variation in turnover is more precise. We find a 12% (exp(0.11)-1) average increase in turnover associated with the use of a CLC in the matched control sample and a 16% (exp(0.15)-1) increase in the random sample. The results for the two samples are consistent, although the matched sample yields slightly smaller effects. This difference is potentially due to the closer proximity of firm profiles to those in the test sample, which produces a finer measure of the impact.

The difference in significance between the absolute result and the percentage variation result could result from high variability in the high turnover observations, possibly unrelated to the use of a CLC, which would distort the average of the absolute effect. The change in variation via the logarithmic transformation puts all the companies on the same scale, thus reducing the weight of this type of phenomenon in the measurement.

Table 5 - General results[iii]

	Absolute turnover		Logarithm of turnover	
	Matched control group	Random control group	Matched control group	Random control group
Treatment: using a CLC	39,516 . (21,753)	49,822 (-38,357)	0.11*** (-0.02)	0.15***(-0.02)
Number of full-time equivalents	73,556*** (14,204)	80,532* (-31,303)	0.03*** (-0.01)	0.02*** (0.00)
Business category				
Large companies	-2,806,641 (5,427,174)	-639,669 (-535,686)	0.12 (-0.44)	-0.2 (-0.21)
Microenterprises	-1,595,660* (765,521)	-1,398,731* (-628,133)	-0.52*** (-0.14)	-0.32*** (-0.09)
Small and medium-sized companies	-1,357,949 . (712,146)	-1,345,945* (-679,498)	-0.3* (-0.13)	-0.07 (-0.08)
Municipal density				
Intermediate density	53,796 (41,423)	-872 (-103,230)	0.01 (-0.06)	-0.07 (-0.08)
Sparse	28,121 (67,869)	185,518 (-209,324)	-0.17* (-0.08)	0.07 -(0.09)
Very sparse	142,835** (52,221)	-247,317 (-216,509)	0.22* (-0.09)	-0.06 (-0.1)
Activity sector				
C1 Food manufacturing	1,681,015*** (205,536)	1,098,060 (-714,962)	-0.06 (-0.08)	-0.03 (-0.11)
C5 Other industrial product manufacturing	1,348,800*** (242,407)	946,043 (-635,937)	-0.07 (-0.15)	0.07 (-0.19)
FZ Construction	1,593,310*** (387,377)	1,072,689 . (-613,767)	0.11 (-0.35)	0.34 (-0.23)
GZ Trade	1,514,815*** (316,665)	956,610 (-652,027)	-0.28*** (-0.07)	-0.08 (-0.13)
HZ Transport and storage	1,505,402*** (300,999)	848,634 (-580,427)	-0.22 (-0.18)	-0.43 (-0.42)
IZ Accommodation and food services	1,452,026*** (320,847)	835,566 (-662,933)	-0.25 (-0.15)	0.07 (-0.29)
JZ Information and communication	1,444,536*** (119,966)	1,120,817*** (-242,748)	-0.73 (-0.53)	0.06 (-0.24)
KZ Financial and insurance activities	1,354,951*** (159,037)	1,480,934* (-726,143)	-0.88*** (-0.19)	-0.65** (-0.2)
LZ Real estate activities	1,363,177*** (350,708)	776,000 (-583,858)	-1.41*** (-0.14)	-0.43 (-0.3)
MN Administrative and technical services	1,327,266*** (263,911)	985,529 . (-591,260)	-0.51*** (-0.13)	-0.25 (-0.16)
OQ Administration, education, health	1,365,041*** (226,053)	972,384 . (-585,163)	-0.53** (-0.16)	0.03 (-0.3)
RU Other service activities	1,422,936*** (239,470)	845,590 (-594,062)	-0.58*** (-0.12)	-0.15 (-0.17)
Legal status				
Public right organization with commercial status	-1,219,181 (787,936)	15,070 (-1,028,609)	-0.59 . (-0.35)	0.95 (-0.67)
Commercial company	-992,670 (746,248)	232,213 (-949,731)	-0.45 (-0.33)	1.12 (0.69)

Source: CLCs members' files and Fare file, 2010-2019 years

*. significant at 90%, * significant at 95%, ** significant at 99%, *** significant at 99.9%*

Results by company size

To test whether there are differentiated effects depending on company size, the model was applied to sub-samples created from the company categories provided by the French National Institute for Statistics and Economic Studies (INSEE). These categories are based on the number of employees and their turnover, i.e., microenterprises (companies with fewer than 10 employees), small and medium-sized enterprises or SMEs (companies with more than 10 employees and fewer than 250), mid-cap companies (companies with fewer than 5,000 employees), and large companies (all companies not included in the previous categories).

For each sub-sample, we selected all companies that belonged to the category in at least one of the Fare years. Due to the very small size of these samples, mid-cap and large companies were grouped together.

As hypothesized, there are small but significant effects for microenterprises, with an increase in turnover of approximately €34,000 per year, and larger effects for SMEs, around €200,000 (Table 6). The rates of change are similar to previous finding, with microenterprises experiencing about a 10% increase and SMEs seeing a larger increase. For large and mid-cap firms, the effect is negative and insignificant in both absolute and relative terms, confirming the greater volatility of turnover at the upper levels of distribution and a less discernible effect of CLCs for these types of firms. The absence of significance may also be due to the small number of observations in these categories, particularly among test firms.

These differentiated effects allow for several interpretations of the effect of CLCs on activity. Thus, it is possible that microenterprises and SMEs, with smaller production volumes, benefit more from their inclusion in a territorialized network regarding the internalization of demand. Their production type may be more aligned with the domestic sector and better respond to local demand, which CLCs might more effectively redirect (Lafuente-Sampietro 2023). Similarly, while the effect of CLCs is small in scale, it may represent a larger relative share of the initially smaller turnover of these firms, making it more easily observable and significant. Thus, for mid-cap and large companies, the marginal contribution of CLCs may be less noticeable when their current production volume is very high. Moreover, the variation in business activity for large companies may be subject to important exogenous events which are not causally linked to the use of CLCs but can occur simultaneously and strongly impact the turnover of certain companies.

Table 6 - Results by firm size with matched control group[iv]

	Absolute turnover			Logarithm of turnover		
	Microenterprises	SME	Mid-caps and large companies	Microenterprises	SME	Mid-caps and large companies
Using a CLC	34,064* (13,885)	214,811** (78,312)	-881,553 (712,805)	0.09*** (0.02)	0.12*** (0.03)	0 (0.09)
Number of full-time equivalents	85,382*** (13,635)	81,294*** (12,346)	43,416** (15,343)	0.12*** (0.01)	0.03*** (0.01)	0.01 . (0)
Business category						
Large companies	10,626,743 (NA)		-3,723,211 (4,778,408)	1.39*** (0.36)		-0.1 (0.33)
Microenterprises	-887,696 . (516,415)	-581,147 . (352,874)	-3,820,637 . (2,147,381)	-0.5 (0.36)	-0.25* (0.12)	-1.24*** (0.34)
SME	-744,499 (512,290)	-533,823 (348,191)	134,812 (386,054)	-0.64 . (0.36)	-0.05 (0.1)	0.03 (0.1)
Municipal density						
Intermediate density	8,705 (13,734)	196,294 (139,568)	1,869,277 . (1,102,007)	0.01 (0.06)	-0.03 (0.09)	-0.16 (0.46)
Sparse	-23,948 (17,824)	476,513 (378,527)	505,761 . (292,300)	-0.2** (0.08)	0.34* (0.16)	-0.3*** (0.06)
Very sparse	94,107* (44,447)	-2,849,863*** (316,502)		0.15 (0.11)	-0.23 (0.18)	
Activity sector						
C1		1,537,490*** (103,104)			-0.13* (0.06)	
C5	-161,415 (122,345)	430,870 (515,542)		-0.14 (0.26)	0.2 (0.35)	
FZ	-14,226 (161,492)			0.19 (0.34)		
GZ	-163,070 (125,350)	859,871 . (513,230)		-0.21 . (0.11)	-0.24 (0.15)	
HZ	-191,069* (77,547)			-0.16 (0.14)		
IZ	-223,832* (111,977)	869,641 (626,455)	2,255,543 (NA)	-0.23 . (0.14)	-0.73** (0.28)	2.32*** (0.06)
JZ	-114,324 (173,273)			-0.54 (0.67)		
KZ	-205,945 . (123,031)	509,860 (327,470)		-0.77** (0.27)	-0.89** (0.34)	
LZ	-269,166* (120,656)	352,070 (947,627)	-330,998 (238,514)	-1.32*** (0.25)	-2.84*** (0.36)	-0.11 . (0.06)
MN	-153,045 (134,680)	569,383 (392,819)		-0.25 (0.19)	-0.73** (0.26)	
OQ	-178,197 (122,339)	582,147 (458,171)		-0.39 . (0.22)	-0.77** (0.26)	
RU	-189,369 (125,667)	608,589 (621,557)		-0.48** (0.18)	-0.61 . (0.34)	
Legal status						
Commercial company		-946,158 (611,261)	841,885 (NA)		-0.43 (0.27)	0.23*** (0.04)

Source: CLCs members' files and Fare file, 2010-2019 years

*. significant at 90%, * significant at 95%, ** significant at 99%, *** significant at 99.9%*

Results by CLC size

In addition to these initial results, we estimate a differentiated effect based on the size of the CLCs joined.

Accordingly, we created a variable categorizing CLCs into three groups according to the clusters estimated by Blanc and Lakócai (2020). The first category includes only the Eusko, which alone constitutes the fifth cluster in the categorization due to having at least twice as many business users as other CLCs. The second cluster combines CLCs with between 400 and 500 business users, corresponding to Cluster 4, including the Cairn, the Doume and the Gonette. The third includes the remaining CLCs, with between 150 and 250 business users and corresponding to Cluster 3. The model was run on the entire sample by replacing the CLC membership indicator with a categorical variable that denotes no CLC membership for control and test firms prior to joining, membership in a very large CLC, i.e., Eusko, membership in a large CLC, and membership in a medium CLC for test firms at the time of joining. The coefficients thus represent the effect of membership in a CLC of a certain size compared to the baseline situation of non-membership in a CLC.

With this design, the observed absolute effects are insignificant, except for the result of medium CLCs, which is significantly positive at 10% level (Table 7). The lack of significance is likely due to the smaller sample sizes for each modality of the variable of interest and the high variability in firm profiles within each CLC category. The effects in relative variation are again highly significant and of a similar magnitude to those found previously, ranging between 10% to 15% increase in annual turnover, with a significantly larger effect observed for medium-sized CLCs.

Table 7 - Results by CLCs size, matched control group[v]

	Absolute turnover	Logarithm of turnover
CLCs size		
Very large	14,811 (30,231)	0.1*** (0.02)
Large	12,292 (27,373)	0.11*** (0.03)
Medium	133,249 . (68,565)	0.14*** (0.03)
Number of full-time equivalents	73,229*** (14,223)	0.03*** (0.01)
Business category		
Large companies	-2,809,411 (5,425,925)	0.12 (0.43)
Microenterprises	-1,606,767* (766,412)	-0.52*** (0.15)
SME	-1,366,224 . (712,670)	-0.3* (0.13)
Municipal density		
Intermediate density	52,534 (41,057)	0.01 (0.06)
Sparse	29,505 (67,071)	-0.17* (0.08)
Very sparse	148,092** (52,902)	0.22* (0.09)
Activity sector		
C1 Food manufacturing	1,634,904*** (210,086)	-0.07 (0.09)
C5 Other industrial product manufacturing	1,291,580*** (250,270)	-0.08 (0.16)
FZ Construction	1,538,723*** (391,428)	0.1 (0.35)
GZ Trade	1,469,035*** (318,280)	-0.29*** (0.09)
HZ Transport and storage	1,459,199*** (303,429)	-0.24 (0.18)
IZ Accommodation and food services	1,408,277*** (327,295)	-0.26 . (0.16)
JZ Information and communication	1,395,298*** (139,670)	-0.74 (0.54)
KZ Financial and insurance activities	1,302,415*** (159,430)	-0.89*** (0.2)
LZ Real estate activities	1,313,663*** (360,602)	-1.43*** (0.14)
MN Administrative and technical services	1,281,275*** (260,577)	-0.53*** (0.14)
OQ Administration. education. health	1,313,229*** (234,744)	-0.55** (0.17)
RU Other service activities	1,365,578*** (250,414)	-0.6*** (0.14)
Legal status		
Public right organization with commercial status	-1,272,117 (787,462)	-0.6 . (0.35)
Commercial company	-1,002,067 (749,469)	-0.45 (0.33)

Source: CLCs members' files and Fare file, 2010-2019 years

*. significant at 90%, * significant at 95%, ** significant at 99%, *** significant at 99.9%*

The observation of larger effects in absolute terms and relative variation for members of average size CLCs is interesting. Although the low significance of the results in absolute terms prevent us from drawing strong conclusions, we do provide a cautious interpretation of these differences in magnitude.

Large CLCs potentially reduce the number of additional customers by integrating many providers into each business user. In a large network, consumers and firms have more options available for spending their CLCs units, and member companies therefore compete more to meet that demand. In contrast, a smaller network may have a stronger constraining effect of CLCs.

Another interpretation to be considered is that some currencies are strongly based on organized proximities already active within the territory (Fois Duclerc and Lafuente-Sampietro, 2023; Torre and Rallet, 2005). However, the existence of pre-existing interpersonal networks may both facilitate the implementation of the CLC and limit its own effect. For example, the Eusko, the largest CLC in our sample, recruits a significant proportion of its corporate members by tracing back production chains of existing members. This approach facilitates deployment but limits its intermediation effect. If the CLC merely overlays a network of prior transactions, its contribution to redirecting demand is weaker. It can thus be assumed that, in the context of a medium-sized CLC, the challenges associated with expanding the CLC may arise from less developed pre-existing social and market networks. Moreover, the CLC is more engaged in generating new proximities and creating of an ad hoc exchange community, thereby having a greater effect on redirecting demand for the members of this new community.

7. CONCLUSION

In this paper, we measured the effect of CLC membership on member firms. To this end, we utilized the natural experiment of firms' self-selection to join a CLC, allowing us to observe changes in their activity before and after this event.

We first proposed a theoretical analysis supporting our hypothesis that using a CLC positively impacts firms' turnover. Accordingly, we identified a constraint and signal effect that may result in an increase in demand for firms upon joining a CLC, thereby boosting their sales.

Empirically, we measured a relatively widespread and significant effect for micro, small and medium-sized enterprises, though it was lacking high precision. The measured effect amounts to approximately €30,000 for microenterprises and €200,000 for SMEs, which is significant given that the average turnover of firms is around €400,000 in their first year of observation (Table 4). Consequently, the effects in relative variation are rather substantial, ranging from 8% to 16% increase in turnover between the years a CLC is used and the years prior, these effects being statistically far more precise

The study, nevertheless, has some limitations that should be considered rigorously to interpret its results.

First and foremost, the scope of the Fare files, which excludes associations without commercial activities and agricultural firms, limit the generalizability of our results to the non-agricultural commercial sector. The decision to investigate turnover as activity indicators prevents analysis of the effects on non-market activities which cannot be measured in terms of turnover. However, non-market activities are mainly conducted by non-profit organizations, which constitute a significant proportion of CLC member organizations and are therefore outside the study's scope.

The CLCs used in this study are also among the most developed French CLCs, which limits the generalizability of the effects observed to relatively large and robust CLCs. Moreover, although the greater effect for the smallest CLCs is less precise, it prompts several questions that warrant further investigation, thus replicating this type of study with smaller CLCs could provide valuable insights.

From a methodological standpoint, we solely rely on firms' tax information. While the two-way fixed effects model best controls for firms' static characteristics and aggregate business cycle effects, it is possible that CLCs membership correlates with dynamic characteristics such as changes in management or production methods, adjustment to poor business performance, or additional commitments during growth period.

The absence of this information potentially constitutes a missing variable bias which the two-way fixed effects model alone may not adequately address.

We also excluded bankruptcies by retaining only firms that were still active in 2019, potentially ensuring a more robust performance among the study population.While this decision significantly reduced the control population more than the test population, it may have removed firms with declining trajectories from both groups, making it impossible to estimate effects for those firms.

Despite the methodological restrictions, these results are of great importance. This study represents a novel investigation into the impact of CLCs on businesses, a question crucial for CLC community stakeholders, public authorities who may consider supporting such projects, and academic research that now benefits from previously unavailable data on the effectiveness of CLCs. As such, the measurement of a significant positive effect for small businesses raises the question of using CLCs as tools for economic development. Since individual firms have positive effects, it stands to reason that the community using CLCs benefits from those, resulting in increased economic activity within that community. Additionally, as businesses using CLCs may demonstrate a stronger commitment to sustainable production, CLCs could serve as an effective tool for fostering selective economic growth focused on ecological production.

This increase in economic activity does not, however, imply that CLCs foster business activity throughout the entire territorial economy, as non-member companies may not benefit from these mechanisms or could even be negatively affected. However, these conclusions do not suggest CLCs have no territorial impact. In fact, by promoting economic development within their community, CLCs transform the local economy by directing economic growth toward actors who share their values and sustainable practices, thereby enabling them to play a more prominent role in their local economic landscape.

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APPENDIX

Annexe 1 : Descriptive statistics of the samples

Indicator	Test (n=1,268)	PPM Control (n=3,334)	Random Control (n=3,821)
Average turnover in first year	€439,857	€399,169	€361,963
Median turnover in first year	€151,385	€156,295	€97,920
Average number of full-time equivalents	3.8	2.6	2.6
Business category in first year			
Microenterprises	90.1%	90.9%	90.4%
Small and medium-sized companies	9.2%	7.9%	8%
Mid-caps companies	0.7%	1%	1%
Large companies	0%	0.3%	0.7%
Communal density in first year			
1 Dense	49%	52.3%	66.1%
2 Intermediate density	20.3%	24.6%	17.5%
3 Sparse	27.8%	21.7%	15.5%
4 Very sparse	2.9%	1.4%	0.8%
CLCs area in first year			
1 Cairn	9.7%	10.2%	4.5%
2 Doume	8.4%	6.8%	2.7%
3 Eusko	38.1%	30.5%	2.6%
4 Florain	3.9%	3.5%	1.9%
5 Gonette	15.5%	22.1%	10.2%
6 SoNantes - Moneko	8.1%	8.5%	3.5%
7 Pêche	4.6%	11.4%	35.7%
8 Pive	6.7%	6%	3%
Unknown	0.5%	0.9%	35.9%
Sector of activity in the first year			
C1 Food manufacturing	11%	7%	1%
C5 Other industrial product manufacturing	3%	2%	1%
DE Extractive industries, energy, water	0%	0%	1%
FZ Construction	2%	2%	8%
GZ Trade	35%	36%	14%
HZ Transport and storage	1%	1%	4%
IZ Accommodation and food services	21%	19%	8%
JZ Information and communication	3%	3%	5%
KZ Financial and insurance activities	0%	0%	3%
LZ Real estate activities	1%	1%	6%
MN Administrative and technical services	9%	15%	22%
OQ Administration, education, health	7%	10%	18%
RU Other service activities	7%	6%	8%
Type of legal unit in the first year			
Legal person	81%	75%	65%
Private individual	19%	25%	35%
Legal status in the first year			
1 Individual entrepreneur	19%	25%	35%
5 Business corporation	78%	74%	62%
6 Other legal person	1%	1%	2%
9 Private law grouping	1%	0%	0%

Source: Fare files, 2010-2019

Annexe 2 - Turnover decile

	First year of observation			Year before CLCs joining	
Decile	Test	PPM	Random	Test	PPM
Min	690	-850	-28,960	690	-850
10%	33,677	30,332	18,140	37,916	32,012
20%	58,562	55,384	36,570	65,464	57,702
30%	80,361	81,255	52,110	93,190	82,488
40%	111,942	113,968	71,420	135,654	117,952
50%	151,385	156,295	97,920	178,925	160,565
60%	211,128	214,264	138,390	261,652	225,304
70%	298,981	300,976	205,846	381,004	316,465
80%	463,858	449,808	336,240	588,978	503,804
90%	878,066	876,117	738,280	1,170,864	976,484
Max	14,863,570	15,466,770	15,580,730	16,288,630	31,551,810

Source: Fare files, 2010-2019

ENDNOTES

[i] Consumers cannot convert CLC units into national currency. Firms are permitted to do so but may incur high costs, either from conversion fees or simply the costs related to the conversion process carried out by the managing organization.

[ii] The Siren number is the national identification number assigned to companies when they register in the national register of companies.

[iii] We used a control variable for the employment areas that was not displayed in the table for readability reasons.

[iv] We used a control variable for the employment areas that was not displayed in the table for readability reasons.

[v] We used a control variable for the employment areas that was not displayed in the table for readability reasons.

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LITERATURE REVIEW ON INTEGRAL, MIXED, AND CREATIVE RESEARCH APPROACHES FOR COMPLEMENTARY CURRENCY IMPACT EVALUATION

Integrative Review of all 194 articles published in the International Journal of Community Currency Research from 1997 to 2022.

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ABSTRACT

According to the integrative review of all 194 articles published in the International Journal of Community Currency Research from 1997 to 2022, two-third (66.0%) were dealing with currency impact assessment—compared to one-sixth (17.9%) for 4 other literature reviews since impact's definition influences its outcome—of which two-fifth (38.3%) had a positive impact but five-ninth (55.5%) had a neutral impact for a positive/negative impact ratio of 6.1. On average, the existing currencies studied represented a multiplier effect or velocity of 12.1, 7.33% of a targeted population, and 3.01% of a monetary mass or gross domestic product—and only one-fourth (23.6%) became inactive after 7 years. As suspected, seven-eighth (87.6%) investigated currencies with sustainable development objectives—involving 2.87 of the 5 pillars of sustainable development and targeting 5.26 of the 17 Sustainable Development Goals. Coming from 19 different disciplines, authors used 3.66 methodologies in average—among 79 different methodologies including the usual systems theory and econometrics—but four-fifth (78.4%) unexpectedly used multi-methodological frameworks (Integral Methodological Pluralism, 'mixed methods' research, 'creative research' methods) whereas only two-fifth (39.2%) used meta-theoretical paradigms (Complex Thought, Integral Theory, Critical Realism). Therefore, meta-theoretical paradigms with multi-methodological frameworks for the study of money or currency as a complex phenomenon are recommended.

KEYWORDS

Literature Review, Integrative Review, Meta-Analysis, Impact Assessment, Multiple Methodology, Integral Methodological Pluralism, Mixed Methods Research, Creative Methods Research, Integral Theory, Critical Realism, Complex Thought.

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1. INTRODUCTORY BACKGROUND: LEADING AUTHORITIES ADVOCATING AN INTEGRAL APPROACH OF CURRENCY INNOVATION

In Full-Spectrum Economics (alias 'integral economics')—published in 2010 with a foreword by Ken Wilber (Arnsperger, 2010b; Arnsperger, 2010a) and reviewed by Bernard Lietaer the same year (Lietaer, 2010)—Christian Arnsperger invites economists to apply Ken Wilber's Integral Theory (IT) alias the 'Einstein of Consciousness' (Wilber, 1995; Wilber, 1996; Wilber, 2000). And yet, Bernard Lietaer—the original thought leader of the complementary currency movement—already used in 2005 its 'four quadrants' on the concept of Money through An Integral View on Money and Financial Crashes (Lietaer, 2005b, p. 2) and its 'development levels' on the history of Money in Economics as an Evolutionary System with Stefan Brunnhuber (Lietaer and Brunnhuber, 2005a)—after he met him at the same time as Ken Wilber in 2004[1] (Krause, 2021).

Still within this research area on 'integral money', it is important to note the works of: Jérôme Blanc (Blanc, 2011) from a generational development perspective; and Makoto Nishibe from an evolutionary economics perspective (Nishibe, 2012; Nishibe, 2018)—both dealing with the institutional and historical emergence of complementary currencies.

Figure 1: 'Four quadrants' in integral theory.

	Interior	**Exterior**
Individual	**Subjective (I)** Self and consciousness (beliefs).	**Objective (IT)** Brain and organism (behaviours).
Collective	**Inter-subjective (WE)** Culture and worldview (values).	**Inter-objective (ITS)** Social and environment systems (collaborations).

Source: adapted from Four quadrants (Wilber, 1995) apud Altitudes of Development & Quadrants of Reality (Salzman, 2019).

Figure 2: 'Development levels' in integral theory.

Level (colour)	**Description**
Post-postmodern (turquoise).	Kosmo-centric, integral, holistic, evolutionism.
Postmodern (green).	World-centric, environmental, pluralistic, relativism.
Modern (orange).	Ethno-centric, rational, scientific, materialism.
Premodern (red).	Ego-centric, traditional, magic, mysticism.

Source: adapted from Spiral Dynamics (Beck and Cowan, 1996) and A Theory of Everything (Wilber, 2000) apud Altitudes of Development & Quadrants of Reality (Salzman, 2019).

Therefore, I came to follow the advice of the mastermind Bernard Lietaer—who introduced me to the complementary currency movement in 2009—to use an integral approach to the study of money. Going deeper into the subject, I discovered the meta-theoretical paradigms of Edgar Morin's Complex Thought, Ken Wilber's Integral Theory, Roy Bhaskar's Critical Realism, and Sean Esbjörn-Hargens's Complex Integral Realism. The latter advocates the use of multi-methodological frameworks to investigate complex phenomenon—especially Integral Methodological Pluralism which invites the use of up to 8 methodological families.

Time for me to check whether currency innovation research had already used such integral approach in the past—and the resulting 'mixed methods' research and 'creative research' methods.

This article aims to give a bird's-eye-view on how people perceive, understand, design, use, and assess the function and nature of Money—and on how the complementary currency movement and the currency innovation research network help to build relevant bridges within and between communities from different evolutionary development (alias 'development levels'; resp. premodern, modern, postmodern, 'post-postmodern') and researchers from various disciplinary background and cultural context (alias 'four quadrants'; resp. subjective, inter-subjective, objective, inter-objective).

After an overview of some previous literature reviews on currency impact assessment which revealed its research gap, I will present an integral research design for the data collection and analysis performed in an integrative review—as a qualitative and quantitative method of meta literature review with the purpose of analyzing the theory, methodology and method used to investigate currency and its impact—to finally present its findings and discuss them regarding literature.

2. RESEARCH GAP: PREVIOUS LITERATURE REVIEW ON CURRENCY IMPACT ASSESSMENT

It is important to note that literature reviews are usually differentiated between narrative literature review[2] and analytical literature review[3].

2.1 BIBLIOGRAPHY OF COMMUNITY CURRENCY RESEARCH DATABASE (CC-LITERATURE)

About one-fifth (18.3%)[4] of all the contributions listed in 2010 since 1829 in the Bibliography of Community Currency Research database (CC-Literature)—as its most exhaustive research database—were systematic empirical studies about specific exchange systems (e.g. country investigations, activist reports, etc.) which could be considered as impact reports—as first published in 2011 through an analytical umbrella review[5] (Schroeder et al., 2010, p. 216–222 apud Schroeder et al., 2011, p. 34, 38).

About one-fifth (18.7%)[6] of the English sources listed in 2012 in the CC-Literature appeared with terms related to impact assessment—as first published in 2012 through an analytical scoping review[7] (Place, 2012, p. 12).

Note that the Bibliography of Community Currency Research database (CC-Literature) has a more narrow scope—with boundaries[8] as opposed to speculative cryptocurrencies (Schroeder, 2020)—than the International Journal of Community Currency Research (IJCCR) when it comes to Complementary and Community Currency Systems (CCS).

2.2 INTERNATIONAL JOURNAL OF COMMUNITY CURRENCY RESEARCH (IJCCR)

About one-eighth (12.7%)[9] of the 102 papers published between 1997 and 2013 from volume 1 to 17 in the peer-reviewed International Journal of Community Currency Research (IJCCR) dealt with an impact evaluation approach of Complementary and Community Currency Systems (CCS)—according a literature review carried out in 2013 and only published in 2015 (Place and Bindewald, 2013, p. 7–8 apud Place and Bindewald, 2015, p. 154). It is important to note that this literature review was indeed only an analytical rapid review[10] of which studies of complementary currencies—within its leading academic journal—were using an impact assessment approach in the strict sense of the term.

About one-third (35.0%) of the 78 papers published between 2009 and 2016 from volume 13 to 20 in the peer-reviewed IJCCR "included some level of impact assessment […] in economic, environmental and/or social variables […] [with] a partial analysis using basic data […] in most cases"—but less than one-twentieth (5.0%) included a "thorough, exhaustive and mid to long impact assessment (more than one year of systematic data collection and analysis)" (Moreira Alves and Ferreira dos Santos, 2018, p. 5, 8).

2.3 ONE-SIXTH OF PREVIOUS RESEARCH CONCERNS CURRENCY IMPACT ASSESSMENT

As the average of these four aforementioned literature reviews, about one-sixth (17.9%) of research on CCS is dealing with impact report, assessment or evaluation. There is therefore a research gap in the literature about currency impact assessment and improvement. But it is clearly the definition of the impact sought by the currency project leader or even the currency impact assessor that will define whether the currency has an impact or not—in the strict or broad sense of the term.

3. RESEARCH DESIGN: INTEGRATIVE REVIEW OF INTEGRAL, MIXED AND CREATIVE METHODS RESEARCH APPROACHES TO CURRENCY

3.1 THEORETICAL RESEARCH PARADIGM (WHY): COMPLEX INTEGRAL REALISM

For this specific integral research design, I followed the new meta-theoretical paradigm of Sean Esbjörn-Hargens's Complex Integral Realism—going further and completing Ken Wilber's Integral Theory by merging with Edgar Morin's Complex Thought and Roy Bhaskar's Critical Realism (Bhaskar et al., 2015; Esbjörn-Hargens and Hedlund, 2022; Esbjörn-Hargens and Hedlund, In Press)—to investigate the complex phenomena of monetary evaluation.

Figure 3: Integral research design.

Sean Esbjörn-Hargens's Complex Integral Realism.	**Why?** Theory (paradigm of research).
Edgar Morin's Complex Thought.	**Who?** Epistemology (subject of research).
Ken Wilber's Integral Theory.	**How?** Methodology (framework of research).
Roy Bhaskar's Critical Realism.	**What?** Ontology (object of research).

Source: adapted from Key Integral Metatheories in Complex Integral Realism (Esbjörn-Hargens, 2015, p. 117, 121, 125).

3.2 METHODOLOGICAL RESEARCH FRAMEWORKS (HOW): INTEGRAL METHODOLOGICAL PLURALISM, 'MIXED METHODS' RESEARCH, 'CREATIVE RESEARCH' METHODS

Such meta-theoretical paradigm encourages to implement its multi-methodological framework called Integral Methodological Pluralism (IMP) with its 'eight zones' of methodological family (Esbjörn-Hargens, 2006, p. 102–104; Esbjörn-Hargens, 2010, p. 50–53)—and the resulting 'mixed methods' research (Creswell and Plano Clark, 2017, p. 105) and 'creative research' methods (Kara, 2020, p. 5, 23–43).

Figure 4: Integral Methodological Pluralism's methodological families

	Interior	Exterior
Individual	**Phenomenology (inside)** Direct experience (phenomenological–inquiry).	**Autopoiesis (inside)** Self-regulating behaviour (autopoiesical).
	Structuralism (outside) Recurring patterns of direct experience (structural–assessment).	**Empiricism (outside)** Observable behaviours (empirical–observation).
Collective	**Hermeneutics (inside)** Understanding between people (hermeneutical–interpretative).	**Social autopoiesis (inside)** Self-regulating dynamics in systems (social autopoiesical).
	Ethnomethodology (outside) Recurring patterns of mutual understanding (ethnomethodological).	**Systems theory (outside)** Observable whole (systems analysis).

Source: adapted from Zones in Development: Insides and Outsides of Dimensions of Experience (Schaik, 2016a, p. 14; Schaik, 2016b, p. 74).

Figure 5: Four types of complex 'mixed methods' research design.

Type	Description
Experimental/intervention design.	Convergent core design of qualitative during quantitative methods.
Case study design.	Convergent core design of qualitative during quantitative methods.
Participatory-social justice design.	Explanatory sequential core design of qualitative after quantitative methods.
Program evaluation design.	Exploratory sequential core design of qualitative before quantitative methods.

Source: adapted from Designing and Conducting Mixed Methods Research (Creswell and Plano Clark, 2017, p. 105).

Figure 6: Five key areas of 'creative research' methods.

Area	Example
Arts based research.	Visual arts, performance arts, textile arts.
Embodied research.	Boddy, somatic, senses, emotion, intuition.
Research using technology.	Software, social media, computer/video games.
Transformative research frameworks	Participatory research, activist research, feminist research, decolonizing methodologies, community based methodologies, and asset based methodologies
Multi modal research.	Mixed methods research, mix of quantitative and/or qualitative methods.

Source: adapted from Creative Research Methods: A Practical Guide (Kara, 2020, p. 5, 23–43).

3.3 EPISTEMOLOGICAL RESEARCH SUBJECT (WHO): RESEARCHER'S PROFILE AS A SUSTAINABLE AND INTEGRAL CURRENCY IMPACT AUTHORITY

As the inherent subject of this research—namely myself as a researcher on this project, reviewer of this literature, and author of this article—I am sometimes considered—in the words of some of my peers—as a 'sustainable development expert' with nineteen years in this domain, a 'currency impact specialist' with fifteen years in this field and an 'integral money connoisseur' with nine years in this area—making me a sort of authority in the integral impact assessment of complementary currency towards sustainable development (Hudon and Michel, 2015, p. 168; Place, 2021a, p. 37–39; Bertschy, 2023, p. 42–43) or even a living integral thinker by example (Petz, 2023, p. 9, 151).

In any case, I was recognized as having at least some expertise in the complementary currency movement—alongside Stephen DeMeulenaere, Shigeto Kobayashi, Leander Bindewald, Matthew Slater, Jérôme Blanc, Georgina Gómez, and Ester Barinaga (Contreras Ramirez, 2021, p. 28).

Knowing that I was the 3rd author having published the most articles on the IJCCR from 1997 to 2022, with 5 out of 194 articles from 235 authors—after Yoshihisa Miyazaki and Rolf F. H. Schroeder with 6 articles each and equal with Stephen DeMeulenaere with 5 articles. Note that 14 of my research publications have been cited 29 times by 11 articles—but really 8 publications cited 11 times by 7 articles since 12 publications were cited 18 times by my own 4 articles.

3.4 ONTOLOGICAL RESEARCH OBJECT (WHAT): LEADING ACADEMIC INTERNATIONAL JOURNAL OF COMMUNITY CURRENCY RESEARCH

As the aimed object of this research, from 15 August 2022 to 21 September 2022, I reviewed all 102 articles published between 1997 and 2013; and from 14 November 2022 to 08 June 2022, I reviewed the remaining 92 articles published between 2014 and 2022—in the leading academic journal of CCS which is the peer-reviewed IJCCR in which this article is published. Out of 194 articles, 184 were written in English (94.8%), 8 in Spanish (4.1%), and 2 in French (1.0%).

Only 2 out of 194 articles used the word 'impact' (1.0%) in their list of explicit keywords, but 11 used the word 'sustainable' or 'sustainability' (5.7%), 37 used 'currency' (19.1%) and 18 used 'money' (9.3%), 27 used 'social' (13.9%) and 24 used 'community' (12.4%) and 23 used 'complementary' (11.9%) but 13 used 'local' (6.7%) and 7 used 'alternative' (3.6%).

For all combined abstracts, the word 'impact' has been used 43 times, 57 times for the word 'sustainable' or 'sustainability', 564 for 'currency' and 132 for 'money', 238 for 'community' and 184 for 'social' and 181 for 'local' but 144 for 'complementary' and 62 for 'alternative'.

In all combined articles, the most frequent denomination for complementary currency was 1'167 times for 'currency' and 389 for 'money', 249 for 'local' and 204 for 'community' and 153 for 'complementary' but 124 for 'social' and 87 for 'alternative'.

For the denomination of conventional money, it was 346 times for 'money' and 291 for 'currency', 94 for 'national' and 58 for 'official' and 32 for 'conventional' but 32 for 'legal' and 29 for 'tender' and 28 for 'fiat'.

As for the research's topic, 31 out of 194 articles are dealing with impact evaluation (16.0%), 28 with monetary theory (14.4%) and 9 with monetary policy (4.6%), 19 with design proposal (9.8%), 14 with econometrics (7.2%), 14 with history and typology (7.2%) as well as 14 with history (7.2%) and 7 with typology (3.6%), 9 with key success factors (4.6%).

3.5 LITERATURE REVIEW METHOD (HOW): INTEGRATIVE REVIEW WITH 125 ANALYSIS PARAMETERS

Concerning the chosen method of this literature review, I conducted an analytical integrative review[11]—as a combination of an analytical qualitative[12] and quantitative[13] meta-analysis reviews—thanks to 58 qualitative and 67 quantitative analysis parameters [cf. table 1 in appendix] of impact research approaches to CCS—such as integral, mixed and creative methods—based on a universe of 194 articles published in the IJCCR over the period 1997–2022 corresponding to volumes 1–26—which also revealed many other unexpected findings that will not be covered in this paper.

For matters of coherence in the analysis, book reviews as well as editorial and introductory notes were not included in our sample; except for the only preface by David Boyle (2011, vol. 15, iss. 1, sec. D) considered as feedback from field experience.

All data collection was retrieved from the consultation of each paper downloaded directly from the IJCCR website and analyzed using Excel spreadsheet and Excel statistical functions—as well as three other online data analysis tools[14]. The database will be made available after publication of this article for researchers willing to follow-up and complement my work.

The data analysis was processed by reviewing each article to fill in all 125 quantitative and qualitative parameters in a database—determined by either extracting 51 data directly from the article (40.8%) as presented or interpreting 74 data indirectly from my own appraisal (59.2%).

The number of iterations [in square brackets] gives the total number of parameters of the currencies or researchers involved in each research article—but that can represent the same currency or researcher with the same parameter several times. Therefore, there is a replication of data from the same currencies that have not been discriminated within this database—which is the main approximation or limitation of this literature review.

4. RESEARCH FINDINGS: UNEXPECTED INTEGRAL, MIXED AND CREATIVE METHODS OF INVESTIGATION FOR AN OVERALL POSITIVE CURRENCY IMPACT

4.1 BEYOND PRESUPPOSED SYSTEMS THEORY METHODOLOGY AND ECONOMETRIC METHODS

As Money is usually considered as a social and economic system[15] (i.e. object of study in economic and social sciences), it is generally accepted that systems theory (viz. interdisciplinary study of complex systems[16]) is the theoretical paradigm (e.g. monetary economics[17]) or methodological framework (e.g. econometrics[18]) the most appropriate and commonly used for the investigation of monetary systems (Ingleby, 1998, p. 2).

And yet, this integrative review proves the contrary in the context of complementary currency since only 90 out of 194 articles (46.4%) have used methodological families from systems theory and only 63 out of 194 articles (32.5%) have used quantitative methods of econometrics (e.g. monetary multiplier effect, velocity, circulation, turnover, leger, accounting, transaction, etc.). Meaning that only about two-fifth (39.4%) have used close methodological criteria restricted to systems theory or econometrics in the strict sense of impact.

This is certainly due to the fact that the 235 authors—as affiliated or independent researchers, or practitioners from 218 public, civic, or private institutions based in 35 countries—came from some 19 different scientific disciplines and 36 nationalities with a male/female ratio of 2.5—thus revealing not only the multidisciplinary, interdisciplinary or transdisciplinary aspect of complementary currency studies, but also their international, cosmopolitan and multicultural appeal.

With regard to the research's type, 150 out of 194 articles (77.3%) were practical, 54 were theoretical (27.8%), 33 were proposal (64.0%), and 8 were bibliographical (4.1%). In terms of research's temporality, 110 out of 194 articles were retrospective (56.7%), 90 were actual (46.4%), and 43 were prospective (22.2%).

4.2 MORE OVERALL POSITIVE THAN NEGATIVE CURRENCY IMPACT ASSESSMENT

As revealed in this analytical integrative review, according to open methodological criteria extended to all existing methodological families in the broad sense of impact, 128 out of 194 articles or two-third (66.0%) were proceeding an impact assessment of CCS—from which 49 out of 128 or two-fifth (38.3%) were positive, 71 out of 128 or five-ninth (55.5%) were neutral, and 8 out of 128 or one-sixteenth (6.3%) were negative (viz. a positive/negative impact ratio of 6.1)—mainly linked to economic, social, management, or monetary issues.

Furthermore, 46 out of 128 articles or one-third (35.9%) were proposing an impact framework, 58 out of 128 articles or three-seventh (45.3%) were encouraging an impact evaluation, and 67 out of 128 articles or one-half (52.3%) were expecting further research.

4.3 REASONABLE OPERATING DURATION, VELOCITY, MONETARY MASS, AND TARGETED POPULATION

As for geopolitical[19] and geoeconomic[20] conditions, 185 out of 194 articles or fifteen-sixteenth (95.4%) studied existing currencies of 18 different types and 189 various names in 79 out of 195 (40.5%) countries[21] unevenly distributed across all 6 continents[22] and 23 out of 25 subregions[23]—thanks to 38 pioneering countries and 82 inspirational sources in terms of currency innovation—with a physical/digital format ratio of 1.09 of which 16 were distributed ledger technologies (alias cryptographic currency or blockchain technology).

As for managerial, leadership and politico-legal aspects, 37 out of 157 articles or one-fourth (23.6%) studied existing currencies which became inactive after a operating duration of 7 years on average (min: 0.33, max: 21); 128 out of 159 or four-fifth (80.5%) were issued by a non-profit organization; 133 out of 165 or four-fifth (80.6%) used a bottom-up approach; 127 out of 271 or three-seventh (46.9%) were not convertible currencies; 149 out 349 or three-seventh (42.7%) were under restricted legalities.

As for monetary ledger accounts, 148 articles studied 80 currency systems each on average (sum: 11'801, min: 1, max: 2'082); which involved 189'726 individuals on average (sum: 18'024'006, min: 40, max: 3'682'484); served 4'921 organizations on average (sum: 285'502, min: 9, max: 104'250); proposed 41 bureaux of change on average (sum: 408, min: 10, max: 59); crossed the border into 27.6 countries on average (min: 2, max: 64); injected 430'367'721 units on average (sum: 24'530'960'141, min: 352, max: 15'392'920'800); circulated 254'486'208 units on average (sum: 13'233'282'813, min: 376, max: 8'464'000'000); collected 474'724 units on average (sum:

4'272'522, min: 290, max: 1'483'231); with a multiplier effect or velocity of 1'211% on average (min: 10%, max: 19'150%).

As for currency design modalities, 144 articles studied existing currencies launched around 1982 on average (min: 914, max: 2021); which aimed at 7.33% of a targeted population on average (min: 0.01%, max: 83.41%); represented 3.01% of a national monetary mass or local gross domestic product on average (min: 0.000004%, max: 51.32%); proposed a demurrage rate of 28% per year on average (min: 3%, max: 260%); an interest rate of 4.8% per year on average (min: 3%, max: 12%); a conversion rate of 5.1% on average (min: 2%, max: 50%); a face value of 14.06 units per hour on average (min: 0.33, max: 100); a nominal value of 2'711 on average (min: 1/20, max: 20'000); 20 denomination notes of which 3.14 for the number π; a validity period of 2.4 years on average (min: 0.08, max: 7); a credit/debit limit of -23'963/+1'657 units on average (min: -200'000, max: +7'000); a discount rate of 13.2% on average (min: 1%, max: 50%); a donation rate of 8.0% on average (min: 0.5%, max: 40%); a loan amount of 3'518 units on average (min: 30, max: 30'000); a grant amount of 2'903 units on average (min: 20, max: 65'000).

As for stakeholder, network and pluralism records, 85 articles involved an interorganizational partnership of 12.6 organizations on average (sum: 1'073, min: 1, max: 350); an interoperability network of 321.1 internetworks on average (min: 2, max: 1'221); a multicurrency system of 2.9 systems on average (min: 2, max: 7); a diversity of 17.8 products on average (min: 3, max: 27).

4.4 EXPECTED OBJECTIVES TOWARDS SUSTAINABLE DEVELOPMENT

In terms of the objectives of the currencies studied through 185 articles, 23 out of 185 articles or one-eighth (12.4%) were investigating currencies aiming at economic objective only; whereas 162 out of 185 articles or seven-eighth (87.6%) were investigating currencies aiming at economic and/or social or environmental or territorial objectives (alias sustainable development objectives)—to compare with 16 out of 25 articles or five-eighth (64.0%) investigating distributed ledger technologies (alias cryptographic currency or blockchain technology) aiming at sustainable development objectives.

Concerning the 5 pillars of sustainable development[24]—although only 20 articles (10.3%) made explicit reference to it—all 194 articles investigated currencies involving 2.87 of these 5 pillars in average or four-seventh (57.6%) (min: 1, max: 5). As for Sustainable Development Goals (SDGs)[25] or Good Life Goals (GLGs)[26]—although only 3 articles (1.5%) made explicit reference to it—all 194 articles studied currencies targeting 5.26 of these 17 goals in average or two-seventh (30.9%) (min: 1, max: 13).

As for the explicit reference to the notion of sustainability within 110 out of 194 articles (56.7%), 82 out of 194 articles (42.3%) referred to it as sustainable development, 21 articles (10.8%) as durability, 7 articles (3.6%) as resiliency.

4.5 SURPRISING NON-EXPLICIT USE OF META-THEORETICAL PARADIGMS

With regard to meta-theoretical paradigms using Edgar Morin's Complex Thought, Ken Wilber's Integral Theory, and/or Roy Bhaskar's Critical Realism, 76 out of 194 articles or two-fifth (39.2%) used at least one of these meta-theoretical paradigms involving 1.51 of these 3 paradigms in average or one-half (50.4%) (min: 1, max: 3)—although only 8 articles (10.5%) made explicit reference to it.

4.6 ABOVE AVERAGE NON-EXPLICIT USE OF INTEGRAL, MIXED AND CREATIVE METHODS OF INVESTIGATION

All 194 articles used 3.66 methodologies in average (min: 1, max: 9) among 79 different methodologies of which 23 assessed a positive currency impact and 19 for a negative one—but 2.86 excluding literature review (min: 1, max: 8) with the oldest bibliographical references being around 1939 on average (min: 360 BC, max: 2009 AD)—and 5.92 methods in average (min: 1, max: 26)—with data collected around 2008 on average (min: 1974, max: 2021) with a duration of 8.49 years on average (min: 0.003, max: 181) and a response rate of 44% on average (min: 6%, max: 79%) as well as 160 respondents on average (min: 1, max: 7'000) from mostly primary and secondary knowledge sources.

About multi-methodological frameworks using integral, mixed and/or creative methods research approaches, 152 out of 194 articles or four-fifth (78.4%) used at least one of these multi-methodological frameworks involving 2.09 of these 3 frameworks in average or five-seventh (69.8%) (min: 1, max: 3)—although only 6 articles (3.9%) made explicit reference to it.

Integral Methodological Pluralism (IMP)—by using more than one methodological family from the 'eight zones' excluding systems theory for literature review—has been used by 135 out of 194 articles or fifteen-sixteenth (94.3%)—although only 1 article (0.7%) made explicit reference[27] to it—involving 2.63 of these 8 methodological families in average or two-third (32.9%) (min: 2, max: 6) and 2.03 of the corresponding 4 integral quadrants in average or one-half (50.7%) (min: 1, max: 4)—even though 129 out of 194 articles (66.5%) involved more than 2 integral quadrants.

'Creative research' methods—excluding multi modal research for 'mixed methods' research—have been used by 105 out of 194 articles or five-ninth (54.1%)—although only 3 articles (2.9%) made explicit reference to it—involving 1.10 of these 4 'creative research' methods in average or two-seventh (27.6%) (min: 1, max: 2).

'Mixed methods' research has been used by 77 out of 194 articles or two-fifth (39.7%)—although fairly 28 articles (36.4%) made explicit reference to it—involving 1 of these 4 'mixed methods' research in average or one-fourth (25.0%) (min: 1, max: 1).

Would not it be interesting to investigate the use of integral, mixed and creative methods in the Bibliography of Community Currency Research database (CC-Literature)?

4.7 LOW INVOLVEMENT OF POST-POSTMODERN LEADERSHIP, ORGANIZATION, CURRENCY, RESEARCH, AND METHODOLOGY

In terms of integral 'level/stage' of development, only 11 out of 144 articles or five-sixty-fourth (7.6%) involved a post-postmodern leadership; 2 out of 149 articles or one-hundredth (1.3%) involved a post-postmodern organization; 28 out of 306 currency types or one-tenth (9.2%) were post-postmodern currency; 28 out of 201 research approaches or one-seventh (13.9%) were post-postmodern research; 9 out of 230 methodological frameworks or one-thirty-second (3.9%) were post-postmodern methodologies.

4.8 PARTIAL VALIDATION OF MY DEFINITION HYPOTHESIS OF 'INTEGRAL MONEY'

Nevertheless, my definition hypothesis of 'integral money' has been partially validated by various articles dealing with these notions: Money is a changing rule and an evolutive concept which encourage behaviours and collaborations, as well as activate beliefs and values.

Furthermore, multiple articles dealt with the 'four quadrants' in terms of circles, topics, sciences.

Surprisingly, 38 out of 194 articles or one-fifth (19.6%) inexplicitly dealt with the conspiracy theory of a world government (e.g. international authority, central bank, legal restriction, etc.).

5 RESEARCH DISCUSSION: CONFIRMING SUSTAINABLE OBJECTIVES AND DISCOVERING MULTIPLE METHODOLOGY

5.1 RELATIVE DEFINITION OF IMPACT INFLUENCES THE RESULTS/FINDINGS

By re-reviewing the literature of the leading academic journal of this field; I was surprised to discover that not one-eighth (12.7%) as previously found in 2013 but five-seventh (69.6%) as later found in 2022—according to a boarder definition of impact—of all 102 articles published from 1997 to 2013 were actually dealing with currency impact assessment—representing a multiplication factor of 5.5 or an evolution rate of 446%. Indeed, by extending the definition of impact—from a strict to a broad sense of the term defined by the same researcher 9 years apart—we passed from one-eighth (12.7%) (Place and Bindewald, 2013, p. 7–8 apud Place and Bindewald, 2015, p. 154) to five-seventh (69.6%) of the articles published in the leading academic journal of CCS dealing with currency impact assessment (i.e. from 13 to 71 of 102 articles published in IJCCR between 1997 and 2013)—of which one-third (33.8%) were a positive impact assessment and three-fifth (59.2%) were neutral whereas only one-fourteenth (7.0%) were negative (viz. a positive/negative impact ratio of 4.8) (Place, 2022, p. 330, 332).

In the same way, not one-third (35.0%) but two-third (65.9%)—in accordance with a different definition of impact—of all 78 or 82 articles published from 2009 to 2016 were actually dealing with currency impact assessment—representing a multiplication factor of 1.9[28] or an evolution rate of 89%. In fact, by differentiating the definition of impact—with a varying sense of the term defined by two different researchers 4 years apart—we passed from one-third (35.0%) (Moreira Alves and Ferreira dos Santos, 2018, p. 8) to two-third (65.9%) of the articles dealing with currency impact assessment (i.e. from 27 out of 78 to 54 out of 82 articles published in IJCCR between 2009 and 2016)—of which three-eighth (35.2%) were a positive impact assessment and five-eighth (61.1%) were neutral whereas only one-thirty-second (3.7%) were negative (viz. a positive/negative impact ratio of 9.5) (Place, 2022).

These findings should be put into perspective with the average of one-sixth (17.9%) of research on CCS dealing with impact report, assessment or evaluation—according to the four aforementioned literature reviews.

Nevertheless, it is impossible to say which methodology or method is better than another for assessing such impact because each will give a different result or finding—since the moneyer, manager, leader, or researcher's choice of the size of the magnifying glass, telescope or microscope will affect the extent of the discovery.

5.2 POSITIVE IMPACT RELATING MORE TO SOCIO-ECONOMIC THAN ENVIRONMENTAL ISSUES

I extended these partial results of this preliminary study to all 194 articles published from 1997 to 2022 which revealed that two-third (66.0%) of its articles were actually dealing with currency impact assessment—with a positive/negative impact ratio of 6.1 concerning mainly economic, social, management, or monetary issues.

Even though the impact of local currency has been sometimes disparaged or descried (Beitone and Danglade, 2017), let us recall here the overall impact comparison—as a narrative generic overview[29]—of 3 leading literature reviews until 2015 that assessed the actual impact of CCS (Place and Bindewald, 2013, p. 9 apud Place and Bindewald, 2015, p. 155):

Overall positive impact through an analytical mixed methods systematic review[30]: positive impact with high social sustainability, limited economic benefits, and few environmental outcomes has been demonstrated with systematic literature review of 1'175 studies of complementary currencies from 1993 to 2013 (Michel and Hudon, 2015).

Overall neutral impact through an analytical mapping review[31]: neutral objectives, mainly economic and social with few environmental goals, have been analyzed with reference to a study of 3'418 currency-related projects from 1996 to 2011 (Seyfang and Longhurst, 2013).

Overall negative impact through a narrative state-of-the-art review[32]: negative impacts due to limited tax integration, as well as business model and policy agenda change, have been shown through 126 studies of complementary currencies between 1996 and 2013 (Dittmer, 2013).

This analytical integrative review revealed that the majority of the CSS studied were mostly dealing with social, territorial, or economic sustainable development objectives; economic, social, or culture sustainable development pillars; as well as the sustainable development goals of decent work and economic growth (8), industry and innovation and infrastructure (9), partnerships for the goals (17), reduced inequality (10).

The question that remains unanswered is: which sustainable development objectives, pillars, or goals have been actually reached, attained, or achieved?

5.3 SIGNIFICANT USE OF META-THEORETICAL PARADIGMS AND MULTI-METHODOLOGICAL FRAMEWORKS

Contrary to what one might have expected, little research was using classical economics methodologies (i.e. systems theory, econometrics) and a significant number of studies was involving meta-theoretical paradigms (i.e. Complex Thought, Integral Theory, Critical Realism) or multi-methodological frameworks (i.e. Integral Methodological Pluralism, 'mixed methods' research, 'creative research' methods).

Although this integrative review confirmed the established fact that most complementary currencies were aiming at sustainable development, it also made the unexpected discovery of an intrinsic multidisciplinary approach as well as a relative integral approach to investigate currency innovation—through a significant use of meta-

theoretical paradigms or multi-methodological frameworks without even knowing it through an explicit reference to it.

The strength of the research community of the complementary currency movement is to be interdisciplinary from its intrinsic origin as a potential consequence of the complexity of the subject matter that is money—this becoming a relevant topic of investigation for integral research.

6 CONCLUDING RECOMMENDATION: A RELEVANT META-THEORETICAL PARADIGM WITH A MULTI-METHODOLOGICAL FRAMEWORK FOR CURRENCY INVESTIGATION AS A COMPLEX PHENOMENON

Why use the same tool to achieve a different vision?[33]

"We see what we are ready to see" (alias 'I do not see what I do not want to see') and by using the same "labelling" (e.g. backward primitive economy of premodern decentralized community vs progressive capitalist economy of modern centralized state), one is preventing oneself from discovering other types of economic tools or means of exchange—as do most of the scientists, academics or researchers among social science disciplines such as economics, anthropology, or sociology—hence the absence of wording for "The * Hypothesis" [34] of Irene Sotiropoulou (Sotiropoulou, 2012, p. 70, 77–78).

Indeed, by entering into a dualist vision of conflictual opposition through the postmodern anti-capitalist discourse of heterodox economics against the modern capitalist discourse of neoclassical economics, one is inevitably reducing all monetary alternative proposals to the unconventional and marginal (for such is the power of words to reflect and feed limiting beliefs on an ongoing basis so as not to discover the 'true truth' and the 'real reality').

This could probably be the reason why complementary currency is not the focus of attention or interest of the conventional or mainstream economics—which would allow us to name "The * Hypothesis" of Irene Sotiropoulou previously stated as 'The lack of transdisciplinary, evolutionary or integral perspective Hypothesis' to investigate a complex phenomenon.

Besides, this rejection of a specific 'quadrant' or 'level' for the benefit of another one has been deeply and rigorously theorized by Ken Wilber's Integral Theory as 'level reductionism'[35] or 'quadrant reductionism'[36] (alias 'flatland') (Helfrich, 2007). Moreover, the reduction or conflation of the domain of the 'real' to the domain of the 'actual' and/or 'empirical' has been described as the 'actualism's fallacy' by Roy Bhaskar's Critical Realism (Hedlund, 2013). And lastly, problem-solving abilities by guessing, preferring, believing a solution has been defined as 'simple thought' by Edgar Morin's Complex Thought (which consists in proposing hypotheses for solutions by creating relationships, searching for criteria, relying on valid justifications, and self-correcting) (Montuori, 2013).

Currency projects could be considered as one of the most complex human-made projects to be designed and implemented (and highly strategical as it involves and depends on entrepreneurial leadership, organizational management, and monetary network considerations) which therefore required a relevant theoretical paradigm and methodological framework to investigate such complex phenomenon—by using various 'labeling' (e.g. analytical method or methodological technique) rather than the same one again and again as described above (i.e. systems theory, econometrics).

A meta-theoretical paradigm with multi-methodological framework seems to me—and other big names on the international complementary currency scene such as Bernard Lietaer, Stefan Brunnhuber, and Christian Arnsperger—to be the most appropriate to do so (as it was already done in some previous complementary currency research without even knowing it according to my integrative review).

At the minimum prerequisite, I invite all researchers to explicitly promulgate their: theoretical research paradigm(s) (theory: why); methodological research framework(s) (methodology: how); methodic research study(ies) (method: how); epistemological research subject(s) (profile: who); ontological research object(s) (matter: what)—as I have just done in the research design of this article.

Nevertheless, as already stated by Filipe Moreira Alves and Rui Ferreira dos Santos, "[d]ue to the variety of methodologies, indicators, proxies […], more in-depth, comparable and methodologically coherent socio-economic impact assessment […] metrics and frameworks […] should be prioritized […] [to allow] a comparative analysis

between assessments or even a compound macro simulation." (Moreira Alves and Ferreira dos Santos, 2018, p. 4, 11).

Finally, I share the conclusion of Rolf F. H. Schroeder with Yoshihisa Miyazaki and Marie Fare that, to spearhead the sustainable development, social innovation and financial technology sectors, "the schemes are to grow beyond the small niches at the fringe of the capitalist system, where they exist right now […]. The development of community currencies has reached a crucial stage: it has become evident that the attempts of small groups of social activities to overcome the scarcity of money are not sufficient to create economic alternatives. It will also be necessary to enter a political struggle and campaign for an appropriate framework in which economically viable community currencies can prosper." (Schroeder et al., 2011, p. 39 apud Moreira Alves and Ferreira dos Santos, 2018, p. 8).

This article shows that the first point has been accomplished by using an integral research design (theory, methodology, epistemology, ontology) and an analytical integrative review (literature review method)—with mostly positive impact in average. The second point of creating a unique currency impact assessment framework for comparative analysis has already been challenged—by the existence of at least three robust, multidisciplinary and multimethodology research approaches (resp. Theory of Change, Impact Assessment Matrix, Integral Methodological Pluralism) (Place and Bindewald, 2013 apud Place and Bindewald, 2015; Place, 2019 apud Place et al. 2021b). The third point of entering a political struggle and campaign to spread the idea and integrate the mainstream economic policy is still undergoing.

Whether it is for the purpose of internal project management and tool design or external fundraising support and stakeholder legitimacy (Place and Bindewald, 2013b, p. 7 apud Bindewald and Steed, 2013, p. 18), there is a gap in the impact research of currency innovation, and I wish to address it by proposing an integrative framework for its impact assessment and improvement. And yet, I would argue that evaluating a monetary system or currency innovation with the most forward-looking theory and cutting-edge methodology should be the norm—even if not yet the most fashionable, popular, or mainstream because wisely and widely used.

ENDNOTES

[1] When he was invited to "'The Money Crunch: Complementary Currency Solutions' conference in Boulder, Colorado, in May 2004, where [Bernard] Lietaer and [Stefan] Brunnhuber met and had a long conversation with Ken Wilber, whose integral philosophy [Bernard] Lietaer valued highly as it shared so much with his own world view." (Lietaer [p.c.] apud Krause, 2021, p. 102–103).

[2] Alias traditional review; i.e. to critique a body of literature and identify inconsistencies in a body of knowledge.

[3] Alias formal assessment review; i.e. a particular method and rigorous appraisal according to some specific criteria of inclusion and exclusion of the literature to be reviewed—to reveal what is known or remains unknown as sorted and organized results—quantitative statistics or qualitative synthesis—of a transparent, thorough and comprehensive search of selective keywords in relevant bibliographic databases in order to condense and make sense of a large body of research.

[4] "The databank comprises 1'099 titles […]. The database identifies 201 contributions with information about specific exchange systems or groups of systems — these are systematic empirical studies, sometimes country surveys of certain types of systems, and sometimes reports from activists." (Schroeder et al., 2010, p. 216–222 apud Schroeder et al., 2011, p. 34, 38).

[5] I.e. analytical review of the results of broad conditions or competing interventions from multiple literature reviews of compiling and compelling evidence—by analyzing secondary knowledge sources of data known as reviews of studies.

[6] Among the 1'251 sources of the Bibliography of Community Currency Research database in 2012, 406 were in English, and only 76 appeared by searching the following keywords: impact, evaluation, measure, rating, audit, indicator, scorecard, assessment, monitoring, performance (30, 21, 14, 5, 3, 2, 1, 0, 0, 0 sources extracted respectively).

[7] I.e. analytical review of a preliminary assessment of the potential quantitative size and qualitative scope of all the available literature on a specific topic without any restriction on the materials sourced—by identifying the nature and extent of the research evidence according to the quality of its study design and by including viable and ongoing research in progress.

[8] Resp. membership of an institution; boundaries in relation to space and time (territorial, objects of trading/sectoral, time/limited duration, media of exchange); boundaries to other social divides (informal economy, capitalist market system, state and welfare organization); boundaries to other complementary and community currency (measure of value, duration of exchange) (Schroeder, 2015b apud Schroeder, 2017, p.5 apud Schroder, 2020b).

[9] Among the 102 papers, published from 1997 to May 2013 in the 17 volumes and 2 special issues, 13 papers are dealing with pertinent impact analysis: Williams Collin C. in volume 1 of 1997; Ingleby Julie in volume 2 of 1998; Laacher Smaïn in volume 3 of 1999; Cahn Edgar S. in volume 5 of 2001; Seyfang Gill in volume 6 of 2002; Wheatley Gerald, Jacob Jeffrey, Brinkerhoff Merlin, and Jovic Emily in volume 8 of 2004; Schroeder Rolf F. H. in volume 10 of 2006; Gelleri Christian in volume 13 of 2009; Naughton-Doe Ruth in volume 15 special issue of 2011; Sotiropoulou Irene in volume 15 special issue of 2011; Thiel Christian in volume 15 special issue of 2011; Molnar Stefan in volume 15 of 2011; Scott Cato Molly, and Suárez Casado Marta in volume 16 special issue of 2012.

[10] I.e. analytical review of an assessment of the established and existing literature about a specific policy or practical issue—by systematically searching and critically appraising a determined size and scope of materials according to their quality and future direction-

[11] Alias inclusive review; i.e. analytical review of a specific subject or guiding issue from the integrated theoretical and methodological literature of both quantitative and qualitative studies with related or identical research hypotheses or questions in order to critically evaluate their rigour and characteristics, to generate new frameworks or perspectives, to define concepts, analyze issues and refine theories or methodologies—by reviewing, synthesizing, criticizing and integrating these studies.

[12] Alias qualitative meta-synthesis review; i.e. analytical review with an evaluative or interpretive synthesis of the exhaustive literature of multiple qualitative studies only to identify common or new themes, concepts or core

elements—by analyzing primary, secondary or tertiary knowledge sources of data and by integrating and transforming their findings into new conceptualizations and interpretations.

[13] I.e. analytical review with a statistical analysis and combination of the exhaustive literature of multiple quantitative studies only to enhance their understanding, to detect patterns and relationships, and to provide a more precise analysis of the effect of their results—by measuring this effect numerically and by expecting a certain homogeneity.

[14] Resp. Online Tools (https://onlinetoolz.net/alphabetical-order#);
Measure SEO (https://www.measureseo.com/tools/keyword-density-checker/);
Browser Ling (https://www.browserling.com/tools/extract-numbers).

[15] I.e. a group of interacting or interrelated elements that act according to a set of rules to form a unified whole.

[16] I.e. cohesive groups of interrelated and interdependent components that can be natural or human-made.

[17] I.e. economic study of the different competing theories of money; and macroeconomic framework for analyzing the functions of money—such as medium of exchange, store of value and unit of account.

[18] I.e. application of statistical methods to economic data in order to give empirical content to economic relationships.

[19] I.e. a study of the effects of Earth's human and physical geography on politics and international relations.

[20] I.e. a study of the spatial, temporal, and political aspects of economies and resources.

[21] Alias 193 United Nations General Assembly member states plus 2 United Nations General Assembly non-member observer states without 11 United Nations General Assembly non-member non-observer states.

[22] Alias 6 continents of North America, South America, Europe, Africa, Asia, Oceania.

[23] Alias 25 United Nations geographical subregions in North America (Northern, Central, Caribbean), South America (Eastern, Southern, Northwestern, Northeastern), Europe (Northern, Western, Southern, Eastern), Africa (Western, Middle, Southern, Eastern, Northern), Asia (Western, Central, Southern, Eastern, Southeastern), Oceania (Australasia, Melanesia, Micronesia, Polynesia).

[24] Sustainable development pillars: culture (e.g. beliefs, habits, anthropology, philosophy, psychology, etc.); governance (e.g. transparency, consensus, disintermediated transactions, group decision-making, profit use, etc.); social (e.g. pride, inclusion, well-being, social and solidarity economy, trust compare to national currency, etc.); economic (e.g. employment, liquidity, financing of volunteering and projects, local Gross Domestic Product, percentage of dynamic turnover to nominal Gross Domestic Product at current prices, percentage of static balance of client credits to global money supply or monetary aggregate, etc.); environmental (e.g. encourage local, seasonal, organic, ethical, reuse, recycle, renewable consumption, etc.). I would propose two new pillars: consciousness (e.g. consciousness which is culture beliefs and philosophy values provide driving force over space and time); lifestyle (e.g. virtuous or eco-friendly behavioural transformation).

[25] I.e. collection of 17 interlinked global goals (number in brackets) set up in 2015 by the United Nations General Assembly and "designed to be a blueprint to achieve a better and more sustainable future for all" by 2030; viz. no poverty (1), zero hunger (2), good health and wellbeing (3), quality education (4), gender equality (5), clean water and sanitation (6), affordable and clean energy (7), decent work and economic growth (8), industry and innovation and infrastructure (9), reduced inequality (10), sustainable cities and communities (11), responsible consumption and production (12), climate action (13), life below water (14), life on land (15), peace and justice and strong institutions (16), partnerships for the goals (17) (UNDESA, 2015).

[26] I.e. behavioural and lifestyle asks for individuals that are carefully aligned with the Sustainable Development Goals (SDGs)— set of personal actions that people around the world can take to help support them—and launched by Futerra on 25 September 2018 because "for the Sustainable Development Goals (SDGs) to be reached, everyone needs to do their part: government, the private sector, civil society and people like you" according to the United Nations so by following the Good Life Goals (GLGs) we can all help make tomorrow better than today; viz. help end poverty (1), eat better (2), stay well (3), learn and teach (4), treat everyone equally (5), save water (6), use clean energy (7), do good work (8), make smart choices (9), be fair (10), love where you live (11), live better (12), act on climate (13), clean our seas (14), love nature (15), make peace (16), come together (17) (WBCSD et al., 2018).

[27] I.e. number of iterations [in square brackets] giving the total number of methodological family explicitly involved in each research article using Integral Methodological Pluralism (IMP) but excluding systems theory for literature review; viz. empiricism [1], systems theory [1], hermeneutics [1], ethnomethodology [1], structuralism [1], phenomenology [1].

[28] I.e. by passing from 27 to 51 of all 78 articles published from 2009 to 2016 actually dealing with currency impact assessment—since 51 out of 78 is equivalent to 54 out of 82; viz. multiplication factor of 51 divided by 27 equal 1.88.

[29] Alias conceptual review; i.e. narrative review of recent or current literature with descriptive summary or categorization survey of a wide range of subjects and published materials through the snapshot of a particular field.

[30] Alias mixed studies review; i.e. analytical review of the results, processes and strategies of the combined literature of both qualitative and quantitative studies to look for correlations between characteristics.

[31] I.e. analytical review of existing literature to identify the need for further reviews of primary, secondary or tertiary knowledge sources of data according to the quality of their study design.

[32] I.e. narrative review of the most recent and extensive literature conducted periodically with a description of the current state of knowledge, matters and disagreements according to the priority for future investigation.

[33] "If all you have is a hammer, everything looks like a nail." — Abraham Maslow.
"No problem can be solved from the same level of consciousness that created it. […] Insanity is repeating the same mistakes and expecting different results." — Albert Einstein.
"You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete." — Richard Buckminster Fuller.

[34] "[T]he present paper is an attempt to formulate a hypothesis, with the intention to see at least within such a historical perspective, how scheme members with both their discourse and action challenge our perceptions about important issues in economics. There is no name or title for this hypothesis (yet). We believe that it is too early to name it. It seems that the schemes studied are the surface of an economy or economies which never ceased to exist, as both material spaces and experiences in people's histories. It is about viewing all this activity as setting a different agenda for economics than what capitalist and anti-capitalist discourse can offer. […] The * Hypothesis. There is no name or title for this hypothesis (yet). It might seem absurd to write this, after the previous pages of stating one hypothesis after another, but it is impossible to gather them and represent them in just one phrase. I believe that it is too early to name it, given that it seems that our way of perceiving all the phenomena mentioned above but also the notions which concern them and we have been taught so far, do not permit us to construct a wording that would not limit us to the traps we try to escape from. [...] Let alone, that to give a name to this hypothesis right now would lead the researcher to make the same mistake as the one probably done by those who do not 'see' transactions if the latter do not look like the ones described in books. It seems that the schemes studied are the surface of an economy or economies which never ceased to exist, as both material spaces and experiences in people's histories. They were, however, dismissed, disdained and even disreputed and the first texts that easily accepted this 'I do not see for I do not want to see' attitude have been the academic ones, even if we would expect exactly the opposite from them. Particularly about economics, which claims to be the most 'scientific' among social science disciplines, the inability to 'see' was much more intense than in other disciplines (like anthropology or sociology) which, however, could not substitute economics, but only criticise its stance. Finally, the entire discussion is not about naming the schemes studied as modern or old, pre-capitalistic or post-capitalistic, parallel or resisting to capitalist economy. It seems that if one gets into such type of discussion, then one is obliged to use the same analytical tools that prevented us from 'discovering' this type of economy till the last years. Labelling is handy under certain conditions, but it is not useful if one searches to answer questions like the ones stated in this paper." (Sotiropoulou, 2012, p. 70, 77–78).

[35] 'Level reductionism' of 'all levels' to one (alias extreme vertical 'hierarchical' 'flatland', e.g. relativists reduce 'all levels' to their pluralistic and holistic absence of absolute transcendence).

[36] 'Quadrant reductionism' of 'all quadrants' to one (alias extreme horizontal 'heterarchical' 'flatland', e.g. behaviourists reduce 'all quadrants' to the exterior–individual upper right 'quadrant' of objective reality of observable behaviour).

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His encounter with Bernard Lietaer in 2009 led Christophe Place to write his master's dissertation between the École des hautes études commerciales de Paris (HEC) and the Fundação Getúlio Vargas (FGV) on complementary currencies in Latin America. After participating in all 6 biennial international conferences on Complementary and Community Currency Systems (CCS) since their launch in 2011 and organized by the Research Association on Monetary Innovation and Community and Complementary Currency Systems (RAMICS) since its foundation in 2015 of which he became a fellow member since 2019, he published 6 articles in all special issues of the International Journal of Community Currency Research (IJCCR) since 2011. As a strategy consultant at Valeureux Activateurs de Richesses (VAR) in 2010–2011, he contributed to the design and implementation pre-projects of L'Éco in Annemasse and Monnaie Léman in Greater Geneva of which he was an expert for 6 bachelor and master works as assistant then associate professor at the Haute école de gestion de Genève (HEG) since 2011, which led him to co-found the Swiss Currency Confederation (SCC) in 2017. In 2018–2021, he became a doctoral researcher at the Institute For Leadership And Sustainability (IFLAS) to study the impact of the Lake District Pound.

APPENDIX

Table 2: Integrative review data collection and analysis

	Analysis parameter [№ of articles] *own appraisal	Data collection [№ of parameters]	Data analysis [№ of iterations] (sum, minimum, maximum)
Qualitative	Explicit keywords [194 articles].	Number of iterations [in square brackets] giving the total number (above 2) of explicit keywords from the authors involved in each research article—but that can represent the same research article with the same explicit keyword several times [46 explicit keywords].	currency(ies) [es: moneda] [37], social [27], community [24], complementary [es: complementaria] [23], money [18], local [13], credit [12], sustainable(ility) [11], system(s) [es: sistemas] [11], development [9], mutual [9], economy(ies) [9], economic(s) [8], time(bank/ing) [8], exchange [es: intercambio] [8], alternative [7], bank(s)(ing) [8], payment [6], value(s) [6], analysis(tics) [6], common(s) [6], monetary [6], blockchain [5], innovation [5], data [5], model(s) [es: modelo] [5], resilience [es: resiliencia] [5], finance(ing) [5], digital(ization) [5], theory [4], marketing [4], network [3], France [3], reciprocity [3], barter [3], Argentina [3], solidarity [3], integral [3], resource [3], units [3], crypto(currencies) [3], […] impact [2], assessment [2], improvement [2].
	Combined abstracts [194 articles].	Number of iterations [in square brackets] giving the total number (above 50) of words involved in each abstract—but that can represent the same abstract with the same word several times [25 words].	currency(ies) [es: moneda(s)] [564], system(s) [es: sistema(s)] [245], community(ies) [es: comunidad(es)] [238], social [184], local [181], complementary [es: complementaria/o(s)] [144], paper [143], economic(s) [141], money [es: dinero] [132], economy(ies) [103], exchange [es: intercambio(s)] [131], research [102], time(bank/ing) [es: tiempo] [99], value(s) [es: valor(es)] [98], LETS(systems) [96], study(ies) [es: estudio(s)] [92], based [88], article(s) [75], monetary [es: monetarios] [63], alternative(s) [es: alternativo/a(s)] [62], credit(s) [61], different [es: diferentes] [60], sustainable(ility) [es: sostenible(ilidad), sustentable(ilidad)] [57], new [es: nuevo] [49], impact(s) [es: impacto] [43].
	Complementary currency's denomination [194 articles].	Number of iterations [in square brackets] giving the total number (above 10) of complementary currency's denomination involved in each research article—but that can represent the same research article with the same denomination several times [84 complementary currency's denominations].	currency(ies) [1'167], money(ies) [389], local(ly) [249], system(s) [246], community(ies) [204], exchange(s) [157], complementary [153], social [124], time(bank/ing) [133], credit(s) [105], alternative(s) [87], based [75], bank/ing(s) [75], barter(ing) [68], trade(ing) [65], mutual [62], monetary [54], digital(ization) [53], new [48], scrip [48], economy(ies) [46], free(ly) [44], network(s) [51], region(al) [43], virtual [35], non [33], scheme(s) [32], parallel [28], innovation [28], crypto(currency) [27], solidarity [27], business(es) [27], economic(s) [25], backed [23], paper [23], multiple/multi(currency) [23], national [22], electronic [22], stamp [22], interest(s) [21], tax(es) [21] demurrage(ing) [21], sustainable(ility) [20], private [20], issued [18], technology [18], model(s) [18], value(s) [18], purpose(ful) [17], development [16], circulation [16], commodity [16], blockchain [16], project(s) [15], convertible [14], reciprocal [13], unit [13], global [13], special [13], payment(s) [13], fiat [12], voucher [12], peer [12], note(s) [12], transaction(s) [12], form [11], market [11], hours [11], coupon [11], citizen [11], circuit [11], token [11], future [11], people [11], gift [11], green [11], labour [11], dollar [10], eco [10], loyalty [10], commercial [10], work [10], specific [10], municipal [10], initiative(s) [10].
	Conventional money's denomination [194 articles].	Number of iterations [in square brackets] giving the total number (above 10) of conventional money's denomination involved in each research article—but that can represent the same research article with the same denomination several times [38 conventional money's denominations].	money [346], currency(ies) [291], national [94], official(ly) [58], system(s) [49], bank/ing(s) [60], legal [39], conventional [32], tender [29], fiat [28], monetary [24], central(ly) [23], credit(s) [21], value [20], electronic [20], exchange [18], state(s) [19], real [17], coin(s) [15], debt(s) [14], issued [13], commodity [13], supply [13], market [12], reserve [12], creation [12], ordinary [11], traditional [11], commercial [11], monopoly(istic) [11], federal [10], cash [10], based [10], single [10], mainstream [10], digital [10], (bank)note(s) [10], standard(ized) [10].
	*Research's topic [194 articles].	Number of iterations [in square brackets] giving the total number of research's topics involved in each research article [35 research's topics].	impact evaluation [31], monetary theory [28], design proposal [19], econometrics [14], history [14], history and typology [14], key success factors [9], monetary policy [9], typology [7], comparative case studies [4], database [4], demographic [4], gender [4], literature review [3], art money [2], co-production [2], critical discourse [2], experts' view/opinion [2], founders' view/opinion [2], geographic information systems [2], indicators' proposal [2], research proposal [2], activist view [1], blockchain technology adoption [1], cross-border cooperative [1],

			currency game design simulation [1], full-employment discourse [1], governance [1], ideological [1], implementation condition [1], negotiation mechanism, platform software comparison [1], reward motivation [1], social support network theory [1], token economics [1], trust for sustainability [1].
	Author's name [194 articles].	Number of iterations [in square brackets] giving the total number of researchers involved in each research article—but that can represent the same researcher several times [235 researchers].	MIYAZAKI Yoshihisa [6], SCHROEDER Rolf F. H. [6], DeMEULENAERE Stephen [5], PLACE Christophe [5], FARE Marie [4], LIETAER Bernard [4], NISHIBE Makoto [4], MARTIGNONI Jens [4], STODDER James [4], YOSHIDA Masayuki [4], BLANC Jérôme [3], GÓMEZ Georgina M. [3], HIROTA Yasuyuki alias Miguel [3], KAVČIČ Samo [3], KOBAYASHI Shigeto [3], KURITA Ken-ichi [3], ORZI Ricardo Marcelo [3], ROSA i ESTEVA Josep Lluís de la [3], SEYFANG Gill [3], SOTIROPOULOU Irene [3], WHEATLEY Gerald [3], WILLIAMS Collin C. [3], ALDRIGE Theresa [2], BENDELL Jem [2], BERG Dmitry Borisovich [2], BINDEWALD Leander [2], BRINKERHOFF Merlin [2], COLLOM Ed [2], DINIZ Eduardo Henrique [2], ESKELINEN Teppo [2], GELLERI Christian [2], JACOB Jeffrey [2], JONES Shira Destinie A. [2], JOVIC Emily [2], KIRSCHNER Amy M. [2], LEE Roger [2], LEYSHON Andrew [2], MEYER Camille [2], MUNS TERRATS Lluís [2], PETZ Marcus Kit [2], PINOS Fabienne [2], RUDDICK William O. [2], RUZZENE Maurizio [2], SCOTT CATO Molly [2], SEGURA BONET Marta [2], SZALAY Zsuzsanna Eszter [2], THÉRET Bruno [2], THIEL Christian [2], THRIFT Nigel [2], TICHIT Ariane [2], TOOKE Jane [2], AGRAZ HERNÁNDEZ Claudia Maricusa [1], AHMED Sabbir [1], ALAJLAN Hind [1], ANTONIADIS Panayotis [1], ARDRON Mitra [1], AUSTIN Preston [1], BANKS Mark [1], BARINAGA Ester [1], BATES Lisa K. [1], BATTERINK Lydwien A. [1], BIRCH Dawn [1], BOIK John C. [1], BONANNO Andrew [1], BOVE Arianna [1], BOYLE David [1], BRAKKEN Marc [1], BRENES MATA Erik [1], BROOKS Skylar [1], BURGESS Gemma [1], CAHN Edgar S. [1], CALDERON Antonin [1], CALDWELL Caron [1], CANALS PARERA Agustí [1], CARRILLO F. Claudia I. [1], CARRILLO PEÑA Paulo Nicolás [1], CHAMNEY Austin [1], CHAPMAN Ian [1], CLEMENT Neville [1], CONTRERAS RAMIREZ Sanel Alberto [1], CÓRDOBA BRENES Karla Vanessa [1], COUTROT Thomas [1], CUKIERMAN Henrique Luiz [1], DAN Mayumi [1], DELLA PERUTA Maëlle [1], DINI Paolo [1], DISSAUX Tristan [1], DITTMER Kristofer [1], DUHAIME Gérard [1], EDME-SANJURJO Dante [1], ELKADI Hisham [1], ELVINS Sarah [1], EL-KADRI Nour [1], FERREIRA dos SANTOS Rui [1], FESENFELD Lukas [1], FITZPATRICK Tony [1], FLØDE Albert [1], FOIS-DUCLERC Mathilde [1], FORSTER Daniella [1], FREITAS Carlos de [1], FRIIS Gustav R. B. [1], GATCH Loren [1], GAWTHORPE Katerina [1], GLASER Florian [1], GODSCHALK Hugo [1], GOMES da SILVA HERNANDES Eurídice [1], GONÇALVES SEVERO Fernando [1], GRAN Even [1], GRECO Jr. Thomas H. [1], GREGORY Lee [1], GROPPA Octavio [1], HAWRANICK SERRA Stephan [1], HAYASHI Kiminori [1], HAYASHI Mayumi [1], HEYSHAM Nourhan [1], HIRAMOTO Takeshi [1], HOLBROOK Allyson [1], HONG Baeg Eui [1], HONZAWA PUIG Andreu [1], HUBER Lucas [1], HUDON Marek [1], HUEBER Olivier [1], HUGHES Neil [1], INGLEBY Julie [1], JACKSON Mark [1], JANSEN Mark A. [1], JEGATHEESAN Sowmyan [1], JELÍNEK Petr [1], JOACHAIN Hélène [1], JOSAVAC Milenko [1], KAMPERS Edgar A. D. [1], KANG Joonmo [1], KAPLAN Naomi [1], KICHIJI Nozomi [1], KIESGEN Thomas [1], KLIMASCHEWSKI Maja [1], KLOPFERT Frédéric [1], KONEČNÝ Alois [1], KRABBE Robin [1], KROHN Gregory A. [1], KUIK Ir. Miranda van [1], KUWATA Manabu [1], LAACHER Smaïn [1], LAKÓCAI Csaba [1], LANDIVAR Diego [1], LARUE Louis [1], LEPOFSKY Jonathan [1], LEWIS Alan [1], LIESCH Peter W. [1], LITTERA Giuseppe [1], LIZOTTE Mathieu [1], LONGHURST Noel [1], LOPEZLLERA-MENDEZ Luis [1], LUNG Yannick [1], LYONS Kevin [1], MACNEIL Johanna [1], MASCORNICK Jeff [1], MATHONNAT Clément [1], McDONALD Elizabeth [1], McFARLANE Erin [1], McPHIE Jamie [1], MENG Han [1], MILANESI Julien [1], MOLNAR Stefan [1], MORAL-ESPÍN Lucía del [1], MOREIRA ALVES Filipe [1], MOUATT Simon [1], MURPHY David F. [1], NAKAYAMA Chikako [1], NAKAZATO Hiromi [1], NAUGHTON-DOE Ruth [1], NORTH Peter [1], OKABE Kayo [1], OSTI SÁENZ Juan [1], OZANNE Lucie K. [1], PAIVA

			SOBRINHO Ranulfo [1], PANACHEV Anton Anatolievich [1], PEÑA de CARRILLO Clara Inès [1], PEREYRA Francisca [1], PFAJFAR Damjan [1], PHAROW Peter [1], PIERRET Dorothée [1], PLINGE J. Walter [1], PORCHEROT Raphael [1], POWELL Jeff [1], POZZEBON Marlei [1], PRIOLO Barbara [1], PRITTWITZ Wilko von [1], REARICK Stephanie [1], RIBEIRO ROMEIRO Ademar [1], RICHARDS Morgan A. [1], ROGERS John [1], RUß alias RUSS Daniela [1], RYAN-COLLINS Josh [1], SÁNCHEZ de la BLANCA DÍAZ-MECO Paula [1], SARTORI Laura [1], SCALFONI RIGO Ariádne [1], SCHRAVEN Jorim [1], SEPTEMBER Jeremy [1], SGRO Giovanni [1], SHARMA Ashish [1], SILVA de FARIA Luiz Arthur [1], SLATER Matthew [1], SMITH Carmen [1], SMITH Max [1], SNYDER Alan M. [1], SOARES VIANA de OLIVEIRA Diego [1], SOBIECKI Grzegorz [1], SÖDER Natalie Terese [1], SOUZA SIQUEIRA Erica [1], STAMM Christoph B. [1], STEINKOPF RICE Julie [1], STUCKATZ Jan [1], SUÁREZ CASADO Marta [1], SUMMERSON Iona [1], TAYLOR Graeme [1], TONCHEVA Rositsa [1], TORRE Dominique [1], TORRENS MÈLICH Lluís [1], UEDA Akira [1], VALDECANTOS Sebastián [1], VASCONCELOS FREIRE Marusa [1], VEER Judith C. V. van der [1], VIEIRA NOBRE BISCAYA Sara [1], VOLKMANN Krister [1], WAGNER Wolf [1], WAINWRIGHT Saul [1], WALKER David [1], WALLIMANN Isidor [1], WARNER Jonathan [1], WEKKEN Ruby van der [1], YOUNG Melina [1], YOUNIE Corrine [1], ZATKO Alexander [1], ZVEREVA Olga Mikhailovna [1].
	*Author's nationality [194 articles].	Number of iterations [in square brackets] giving the total number of nationalities of the researchers involved in each research article—but that can represent the same researcher with the same nationality several times [36 nationalities].	British [28], United Statesian [27], French [25], Japanese [19], German [15], Canadian [13], Spanish [11], Argentinian [8], Australian [7], Belgian [7], Brazilian [7], Swiss [7], Dutch [6], Greek [4], Italian [4], Slovenian [4], Finnish [3], Mexican [3], Hungarian [3], Costa Rican [2], Czech [2], Austrian [2], Portuguese [2], Russian [2], South African [2], Swedish [2], Bolivian [1], Bulgarian [1], Colombian [1], Danish [1], Egyptian [1], Indian [1], Norwegian [1], Polish [1], Slovakian [1], South Korean [1].
	*Author's discipline [194 articles].	Number of iterations [in square brackets] giving the total number of disciplines of the researchers involved in each research article—but that can represent the same researcher with the same discipline several times [19 disciplines].	economics [61], currency [37], sociology [20], management [14], environment [13], development [11], policy [9], informatics [7], geography [5], political [4], law [3], anthropology [2], arts [2], history [2], urban [1], banking [1], finance [1], psychology [1], health [1].
	*Author's occupation [194 articles].	Number of iterations [in square brackets] giving the total number of occupations of the researchers involved in each research article—but that can represent the same researcher with the same occupation several times [216 occupations].	affiliated researcher [157], independent researcher [44], practitioner [15].
	*Institution's name [194 articles].	Number of iterations [in square brackets] giving the total number of institutions of the researchers involved in each research article—but that can represent the same researcher with the same institution several times [218 institutions].	Institute of Advanced Studies of Lyon (ENS Lyon) [6], Lumière University Lyon 2 [6], FleXibles - Association for the investigation of a new economy-system [4], Erasmus University Rotterdam [4], Hokkaido University [4], International Institute for Social Studies (ISS) [4], Joetsu University of Education (Juen) [4], University of East Anglia (UEA) [4], Access Foundation [3], Free University of Brussels (ULB) [3], French National Centre for Scientific Research (CNRS) [3], Geneva School of Business Administration (HEG) [3], Getulio Vargas Foundation (FGV) [3], National Institute of Technology Sendai College (NIT) [3], New Economics Foundation (NEF) [3], Sao Paulo School of Business Administration (EAESP) [3], University of Bath [3], University of Bristol [3], University of Calgary [3], University of Girona (UdG) [3], University of Nottingham [3], Antiutilitarian Association of Social Criticism [2], Anti-utilitarian Movement in the Social Sciences (M.A.U.S.S.) [2], Association for Degrowth [2], Clermont Auvergne University (UCA) [2], Corvinus University of Budapest [2], Côte d'Azur University [2], Boston University (BU) [2], Institute for Interdisciplinary Research in Social Sciences (IRISSO) [2], Institute For Leadership And Sustainability (IFLAS) [2], Interamerican Open University (UAI) [2], International Development Research Centre (IDRC) [2], Learning by Doing [2], Lyon Institute of Political Studies (Sciences Po Lyon) [2], National University of Luján (UNLu) [2], Observatory of Local Complementary Currency in Japan (OLCCJP) [2], Paris Dauphine University [2], Paris Sciences and Letters University (PSL) [2], Pompeu Fabra University (UPF) [2], Radboud University Nijmegen (RU) [2], Rensselaer

			Polytechnic Institute (RPI) [2], Sapporo City University (SCU) [2], Social TRade Organization (STRO) [2], University of Cape Town (UCT) [2], University of Crete [2], University of Cumbria (UoC) [2], University of Eastern Finland (UEF) [2], University of Jyväskylä (JYU) [2], University of Leicester [2], University of London [2], University of Pau and the Adour Region (UPPA) [2], University of Southern Maine (USM) [2], University of Valencia (UV) [2], Ural Federal University (UrFU) [2], Vermont Sustainable Exchange (VSE) [2], Victoria International Development Education Association (VIDEA) [2], Aberystwyth University [1], Asahikawa University [1], Autonomous University of Barcelona (UAB) [1], Autonomous University of Bucaramanga (UNAB) [1], Autonomous University of Campeche (UACam) [1], Autonomous University of Madrid (UAM) [1], Balsillie School of International Affairs (BSIA) [1], Bank for International Settlements (BIS) [1], Berkeley (UC Berkeley) [1], Beyond Money [1], Bordeaux Institute of Political Studies (Sciences Po Bordeaux) [1], Brainbot Technologies [1], Bucknell University [1], California College of the Arts (CCA) [1], California State Polytechnic University (Cal Poly) [1], Cambiatus [1], Cardiff University [1], Catholic University of Louvain (UCL) [1], Central Bank of Brazil (BCB) [1], Charles Léopold Mayer Foundation for the Progress of Humankind (FPH) [1], Chiba University [1], City Hall of Barcelona [1], Clermont Business School (ESC Clermont) [1], Colu Techologies [1], Community Exchange Networks (RetiCS) [1], Community Forge [1], Dante Alighieri University for Foreigners of Reggio Calabria (UniDA/UniDARC/UniStraD) [1], Directorate of Research and Economic Studies and Statistics (DARES) [1], Drodt University [1], Dutch municipality of Landgraaf [1], Euskal Moneta [1], Fair-trade Shop Potsdam [1], Federal University of Bahia (UFBA) [1], Federal University of Rio de Janeiro (UFRJ) [1], Fraunhofer Institute for Digital Media Technology (IDMT) [1], Free University of Berlin [1], French Ministry of Labour and Employment and Economic Inclusion [1], Fukuyama City University (FCU) [1], Global Fund for Cities Development [1], Grassroots Economics [1], Helsinki Timebank [1], Hertie School of Governance [1], House of Human Sciences of Aquitaine/Bordeaux (MSHA/B) [1], Humboldt University of Berlin [1], Hungarian Academy of Sciences (MTA) [1], Ineval Foundation [1], Institute for Economic and Social Research (IRES) [1], Institute of Advanced Studies of Cachan (ENS Cachan) [1], Institute of Political Studies of Grenoble (IEP Grenoble) [1], Karlsruhe Institute of Technology (KIT) [1], King's College London (KCL) [1], Kokusai Junior College [1], Korea Military Academy (KMA) [1], La Trobe University (LTU) [1], LatLng Corporation Research Unit on Spatial Thinking [1], Laval University [1], Leeds Beckett University (LBU) [1], London School of Economics and Political Science (LSE) [1], Ludwig Maximilian University of Munich (LMU) [1], Lund University (LU) [1], Masaryk University [1], Meiji Gakuin University [1], Meiji University [1], Mendel University [1], Moneda Par [1], Montreal School of Business Studies (HEC Montréal) [1], Mutual Aid Network (MAN) [1], Naropa University [1], National Higher Architecture School of Paris-La Villette (ENSAPLV) [1], National University of General Sarmiento (UNGS) [1], NetHood (NH) [1], Network/Chamber of Social and Solidarity Economy Geneva (APRES-GE) [1], New Mexico State University (NMSU) [1], New University Lisbon (NOVA) [1], Norwegian University of Science and Technology (NTNU) [1], Open University of Catalonia (UOC) [1], Open University (OU) [1], Otaru University of Commerce (Otaru) [1], Pablo de Olavide University (UPO) [1], Palmas Institute Europe [1], Paul Sabatier University/Toulouse III (UPS/UT3) [1], PaySys Consultancy [1], Pontifical Catholic University of Argentina (UCA) [1], Prague University of Economics and Business (VŠE) [1], Principled Societies Project (PSP) [1], Promotion of Popular Development A.C. (PDP) [1], Qoin Foundation [1], Queen Margaret University (QMU) [1], Queen Mary University of London (QMUL) [1], Quest University Canada [1], Regios eG [1], Ritsumeikan University [1], Royal Agricultural and Social Management Institute of Thailand [1], School for Advanced Studies in the Social Sciences (EHSESS) [1], School of Advanced Commercial Studies of

			Paris (HEC Paris) [1], Senshu University [1], Seoul National University (SNU) [1], Social Currency Institute (IMS) [1], Solent University in Southampton [1], Spanish National Distance Education University (UNED) [1], State University of Campinas (UniCamp) [1], Sustainability.School [1], Swiss Federal Institute of Technology in Zürich (ETH Zürich) [1], Syracuse University (SU) [1], Thailand Community Currency Systems (TCCS) [1], The Appalled Economists [1], Tilburg University [1], Time Banking Initiative in Sweden (TNB) [1], Time Dollar Institute [1], Tohoku University [1], Tokiwa University [1], Tokyo University of Agriculture (NoDai) [1], Tokyo University of Foreign Studies (TUFS) [1], University Institute of Technology of Bayonne and Basque Country (IUT Bayonne) [1], University of Augsburg (UNIA) [1], University of Bedfordshire [1], University of Birmingham [1], University of Bologna (UNIBO) [1], University of Bordeaux (U Bordeaux) [1], University of Brasília (UnB) [1], University of Buenos Aires (UBA) [1], University of Calabria (UNICAL) [1], University of California [1], University of Cambridge [1], University of Canterbury [1], University of Central Oklahoma (UCO) [1], University of Cologne [1], University of Essex [1], University of Finance and Business and Entrepreneurship (VUZF) [1], University of Georgia (UGA) [1], University of Jaén (UJA) [1], University of Lancaster (LU) [1], University of Lausanne (UNIL) [1], University of Liverpool [1], University of Manitoba [1], University of Montana [1], University of Montreal (UdeM) [1], University of National and World Economy (UNWE) [1], University of Newcastle (UON) [1], University of Nice Sophia Antipolis (UNSA) [1], University of North Carolina at Chapel Hill (UNC) [1], University of Ottawa [1], University of Oxford [1], University of Pécs (PTE) [1], University of Pennsylvania [1], University of Potsdam [1], University of Queensland (UQ) [1], University of Roehampton [1], University of Salford [1], University of São Paulo (USP) [1], University of Southern Queensland (USQ) [1], University of Strathclyde [1], University of Tasmania (UTAS) [1], University of Tokyo [1], University of Vermont (UVM) [1], University of Wisconsin–Madison [1], University of Würzburg (Uni Wuerzburg) [1], Utrecht University (UU) [1], Value for People [1], Victoria University in Melbourne (VU) [1], Vrije University (VU) [1], Warsaw School of Economics (SGH) [1].
	*Institution's country [194 articles].	Number of iterations [in square brackets] giving the total number of countries of the researchers involved in each research article—but that can represent the same researcher with the same country several times [35 countries].	United Kingdom [35], United States of America [25], France [21], Japan [18], Germany [16], Canada [14], Spain [11], Switzerland [11], Netherlands [10], Brazil [8], Australia [7], Argentina [5], Italy [5], Belgium [4], Finland [3], Greece [3], Hungary [3], Slovenia [3], Czechia [2], Mexico [2], Portugal [2], Russia [2], South Africa [2], Sweden [2], Thailand [2], Bulgaria [1], Colombia [1], India [1], Indonesia [1], Israel [1], Kenya [1], Norway [1], Poland [1], Slovakia [1], South Korea [1].
	*Institution's type [194 articles].	Number of iterations [in square brackets] giving the total number of types of institution of the researchers involved in each research article—but that can represent the same researcher with the same type of institution several times [3 types of institution].	public institution [142], civic institution [39], private institution [37].
	*Impact assessment until 2022 [128 articles].	Number of iterations [in square brackets] giving the total number of impact assessment of the currencies involved in each research article—but that can represent the same currency with a different impact assessment in the broad sense of impact [3 impact assessments].	positive [49], neutral [71], negative [8].
	*Impact assessment until 2013 [71 articles].	Number of iterations [in square brackets] giving the total number of impact assessment of the currencies involved in each research article until 2013—but that can represent the same currency with a different impact assessment in the broad sense of impact [3 impact assessments].	positive [24], neutral [42], negative [5].
	*Impact assessment from 2009 to 2016 [82 articles].	Number of iterations [in square brackets] giving the total number of impact assessment of the currencies involved in each research article from 2009 to	positive [19], neutral [33], negative [2].

		2016—but that can represent the same currency with a different impact assessment in the broad sense of impact [3 impact assessments].	
	*Positive impact [120 articles].	Number of iterations [in square brackets] giving the total number of positive impact of the currencies involved in each research article—but that can represent the same currency with the same positive impact several times [32 positive impacts].	economic [91], social [76], management [54], monetary [53], cultural [44], development [44], ideology [36], behavioural [27], political [27], research [25], governance [25], network [22], environmental [19], policy [19], education [18], marketing [18], technology [16], legal [16], leadership [16], transition [15], financing [15], evaluation [10], demographic [10], sustainability [9], wellbeing [9], geography [6], accounting [5], psychological [5], belief [4], art [2], consciousness [1], translation [1].
	*Negative impact [79 articles].	Number of iterations [in square brackets] giving the total number of negative impact of the currencies involved in each research article—but that can represent the same currency with the same negative impact several times [31 negative impacts].	economic [47], management [41], monetary [35], network [21], financing [19], social [18], governance [15], marketing [15], political [14], policy [12], development [11], legal [11], cultural [9], demographic [9], research [9], education [8], technology [8], behavioural [7], evaluation [7], ideology [6], leadership [5], accounting [4], environmental [4], psychological [4], transition [2], geography [2], tax [2], art [1], resiliency [1], wellbeing [1], translation [1].
	*Currency's type [185 articles].	Number of iterations [in square brackets] giving the total number of types of the currencies involved in each research article—but that can represent the same currency with the same type several times [18 types of currency].	asset-based currency [116], mutual credit [84], time credit [58], time-based currency [35], barter [25], bank currency or WIR equivalent [22], cryptographic currency [19], retirement currency [8], multiservice currency [5], energy currency [4], eco-friendly currency [3], fiat currency [3], integrated currency [3], commodity currency [2], art money [1], dividend bonus voucher [1], knowledge currency [1], peer-to-peer currency [1].
	Currency's name [185 articles].	Number of iterations [in square brackets] giving the total number of names of the currencies involved in each research article—but that can represent the same currency with the same name several times [189 names of currency].	Local Exchange Trading System (LETS) [fr: SEL Système d'Échange Local] [47], Time Bank/Timebanking (TB) [28], Regional Money (RM) [de: REGIO RegioGeld] [17], HOURS [14], WIR [14], Community Development Bank (CDB) [pt: BCD Banco Comunitário de Desenvolvimento] [13], Global Barter Network [es: RGT Red Global de Trueque] [13], Community Exchange System (CES) [12], Bitcoin ₿ (BTC) [12], Caring Relationship Tickets [jp: FK Fureai Kippu] [11], Stamp/Scrip currency (SC) [10], Eco-Money (EM) [8], Talent [de: Talente, hu: Talentum] [8], Accorderie [7], Bristol Pound (B£) [7], SOLidarity Movement [fr: SOL Mouvement SOLidaire] [7], Volunteer Labour Ban (VLB) [6], Local Currency (LC) [6], Wörgl [6], BerkShares [5], Chiemgauer [5], Ethereum (ETH) [5], Léman (LEM) [5], Ripple (XRP) [5], Brixton Pound (£B) [5], Business-to-Business Barter System [4], Calgary Dollars (CD) [4], Eco-Pesa [4], Spice Time Credits/Tempo Time Credits (STC/TTC) [4], Bangla-Pesa [3], Commercial Credit Circuit (C3) [3], Eusko [3], Commodity-Money-Commodity KoMoKo Monetary System (KMS) [3], Citizen's Complementary Local Currencies [fr: MLCC Monnaies Locales Complémentaires Citoyennes] [3], NU Savings Card [nl: NU-Spaarpas] [3], Reka [3], Sardex (SRD) [3], Local Alternative Unit [el: ΤΕΜ Τοπική Εναλλακτική Μονάδα, Topikí Enallaktikí Monáda] [3], Transition Currency (TC) [3], Terra Trade Reference Currency (TRC) [3], Wära [3], Burlington Currency Project (BCP) [2], Bia [2], Commercial Credit Circuit [it: CCC Circuito di Credito Commerciale] [2], Community Forge (CF) [2], Cumulus [2], Exchange Networks (EN) [2], European Network of Women (ENW) [2], Facebook Libra/Diem [2], FreeCycle (FC) [2], Free Exchange Bazaars (FEB) [2], Give-it-Aways (GA) [2], Grama [2], Give-and-Take (GT) [2], Hudson Valley Current (HVC) [2], International Reciprocal Trade Association (IRTA) [2], Jai [2], Money Back System (MBS) [2], Mutual Credit (MC) [2], Multiple-Circulation Local Coupons (MCLC) [2], Barter Community Market (BCM) [es: MCT Mercados Comunitarios de Trueque] [2], M-Pesa [2], National Association of Independent Trade Exchanges (NATE) [2], Ovolos Currency (OC) [2], PLENTY [2], Por [2], Provincial banknotes [2], PuntoTransacciones [2], RES [2], Supercard [2], Stroud Pound (S£) [2], Associations of Barter Centres [de: Tauschringe] [2], Totnes Pound (T£) [2], Talent Barter Center Hanover [de: TTH Talente Tauschring Hannover] [2], Universal Currency (UCCI) [2], Suchitoto Solidarity Exchange Unit [es: UDIS Unidades De Intercambio Solidario] [2], WAT [2], Atom Currency (AC) [1], Arassussa [1], Banjar [1], Barter Card [1], Behaviour Incentive [1], Business Improvement District [1], Billex [1], Biwa Kipu

			[1], Exchange Network of Chania [1], Boja [1], Bolívar [1], Boniato [1], Bytesring Stockholm (BYST) [1], B-Mimcome [1], Care4Care (C4C) [1], Care Bank (CB) [1], Commodity Backed Currency (CBC) [1], Community Currency Hub (CC-Hub) [1], CHARCOAL [1], Chron [1], Collexa [1], Colu Local Network (CLN) [1], Cooperative Integral [1], CoopeVictoria [1], Cossettón [1], Crewship [1], CROM [1], Cubo Card [1], Cyclos [1], Canterbury Pound (C£) [1], Camden Pound (C£) [1], District Currency Game (DCG) [1], Downtown Dollars (DD) [1], Do it Together (DiT) [nl: SD Samen Doen] [1], Earth Day Money (ED) [2], Eco [1], EcoElce [1], Electronic Currency Time (ECT) [1], Ekhi [1], Epi Lorrain [1], Eurakos [1], E-Dinheiro [1], E-pormonnee [1], Gecko (GCK) [1], Gota Verde [1], Global Virtual Currency (GVC) [1], Hawala [1], Hour Deposit System (HDS) [1], Humboldt Exchange Community Currency (HECC) [1], Impact Hub São Paolo [1], JEU [1], Kaláka [1], KapoCa [1], Karma [1], Blue franc [hu: Kfr Kékfrank] [1], Kör [1], Helsinki Timebank [fi: STAP Stadin Aikapankki, KPNE ex Kumpula vaihtopiiri] [1], La Doume [1], Lake District Pound (LD£) [1], Leaf [1], LOcal Value Exchange (LOVE) [1], Lunch Check [1], Lewes Pound (L£) [1], Modern Barter Exchange System (MBES) [1], Mutual Credit Network [it: RMC Rete di Mutuo Credito] [1], Meal voucher [1], Merit [1], Neco [1], Money PAR [es: Moneda PAR] [1], PayPal [1], Payback (PB) [1], Prosperity Certificate (PC) [1], Puma [1], Portland West Time Dollar Exchange (PWTDE) [1], Residents' Basic Registration Network System (RBRNS) [1], Citizen Economic Resource: Citizen Currency [ca: REC Recurso Económico Ciudadano: Moneda Cuitadana] [1], Red COMAL [1], Reneria [1], Resource Swap Ring [de: RTR Ressourcen-Tauschring] [1], Riace Voucher [1], Knowledge [pt: SBR Saber] [1], Senior Citizen Cooperatives [de: Seniorengenossenschaften] [1], Shaimuratics [1], Shell [1], Social Credit Scheme [1], Sodzil [1], Solidarity Organized Freely and laboriously [es: SOL Solidaridad Organizada Libre y laboriosamente] [1], Stackchain [1], Social TRade Organization (STRO) [1], Sysmä [1], Time Based Currency (TBC) [1], Tradable Energy Quotas (TEQs) [1], Token Exchange System (TES) [1], Tláloc [1], Time Banking Initiative in Sweden [se: TNB TidsNätverket I Bergsjön] [1], Torekes [1], TradeQoin [1], TrocoBuy [1], Trustlines [1], Túmin [1], Turuta [1], UdalTruke [1], Universal Digital Currency (UDC) [1], Value and Change [es: Valor Y Cambio] [1], Vermont Business for Social Responsibility (VBSR) [1], Ven (VEN) [1], WITS [1], Solidarity Economy Network [ca: XES Xarxa d'Economia Solidària] [1], Platform for Cooperation of Regional Transaction Systems [de: ZART Plattform für Zusammenarbeit regionaler Transaktionssysteme] [1].
	Currency's country [185 articles].	Number of iterations [in square brackets] giving the total number of countries of the currencies involved in each research article—but that can represent the same currency with the same country several times [79 countries of currency].	United States of America (US) [43], United Kingdom (GB) [31], Germany (DE) [25], France (FR) [22], Japan (JP) [22], Argentina (AR) [18], Brazil (BR) [18], Switzerland (CH) [18], Canada (CA) [16], Australia (AU) [15], Austria (AT) [14], Spain (ES) [14], Italy (IT) [11], Netherlands (NL) [11], New Zealand (NZ) [11], Mexico (MX) [10], El Salvador (SV) [9], Belgium (BE) [8], Sweden (SE) [8], Thailand (TH) [8], Greece (GR) [8], Slovakia (SK) [7], Honduras (HN) [7], Hungary (HU) [6], Kenya (KE) [6], Poland (PL) [6], South Africa (ZA) [6], South Korea (KR) [6], China (CN) [5], Indonesia (ID) [5], Papua New Guinea (PG) [5], Colombia (CO) [4], Finland (FI) [4], Norway (NO) [4], Portugal (PT) [4], Russia (RU) [4], Bulgaria (BG) [3], Central African Republic (CF) [3], Croatia (HR) [3], Czechia (CZ) [3], India (IN) [3], Ireland (IE) [3], Peru (PE) [3], Uruguay (UY) [3], Venezuela (VE) [3], Costa Rica (CR) [2], Denmark (DK) [2], Ecuador (EC) [2], Hong Kong (HK) [2], Iceland (IS) [2], Israel (IL) [2], Romania (RO) [2], United Arab Emirates (AE) [2], Algeria (DZ) [1], Andorra (AD) [1], Bosnia Herzegovina (BA) [1], Chile (CL) [1], Egypt (EG) [1], Estonia (EE) [1], Guinea (GN) [1], Kuwait (KW) [1], Latvia (LV) [1], Lithuania (LT) [1], Luxembourg (LU) [1], Malaysia (MY) [1], Morocco (MA) [1], North Macedonia (MK) [1], Philippines (PH) [1], Rwanda (RW) [1], Saudia Arabia (SA) [1], Senegal(SN) [1], Serbia (RS) [1], Singapore (SG) [1], Slovenia (SI) [1], Taiwan (TW) [1], Tanzania (TZ) [1], Tunisia (TN) [1], Turkey (TR) [1], Vietnam (VN) [1], and all countries [17].
	Currency's continent [185 articles].	Number of iterations [in square brackets] giving the total number of continents of	Europe [89], North America [55], South America [32], Asia [29], Oceania [19], Africa [16], and all continents [17].

		the currencies involved in each research article—but that can represent the same currency with the same continent several times [6 continents of currency].	
	*Currency's subregion [185 articles].	Number of iterations [in square brackets] giving the total number of subregions of the currencies involved in each research article—but that can represent the same currency with the same subregion several times [23 subregions of currency].	Europe (Western) [49], North America (Northern) [46], Europe (Northern) [35], Europe (Southern) [24], Asia (Eastern) [23], South America (Southern) [19], Oceania (Australasia) [18], South America (Eastern) [18], North America (Central) [17], Europe (Eastern) [15], Asia (Southeastern) [9], Africa (Eastern) [8], South America (Northwestern) [7], Africa (Southern) [5], Oceania (Melanesia) [5], Africa (Middle) [3], Africa (Northern) [3], Asia (Western) [3], Africa (Northern) [2], Asia (Southern) [2], North America (Caribbean) [1], Oceania (Polynesia) [1], South America (Western) [1], and all subregions [17].
	*Currency's pioneering country [115 articles].	Number of iterations [in square brackets] giving the total number of pioneering countries of the currencies unveiled each research article—but that can represent the same currency with the same pioneering country several times [38 pioneering countries].	United States of America (US) [23], Japan (JP) [19], Germany (DE) [18], Argentina (AR) [13], Brazil (BR) [13], France (FR) [12], Switzerland (CH) [12], Spain (ES) [8], United Kingdom (GB) [8], Canada (CA) [7], Italy (IT) [6], Austria (AT) [5], Kenya (KE) [5], Belgium (BE) [4], El Salvador (SV) [4], Netherlands (NL) [4], Papua New Guinea (PG) [4], South Africa (ZA) [4], Central African Republic (CF) [3], Russia (RU) [3], Finland (FI) [2], Greece (GR) [2], Honduras (HN) [2], Hungary (HU) [2], Mexico (MX) [2], New Zealand (NZ) [2], China (CN) [1], Costa Rica (CR) [1], Ecuador (EC) [1], Egypt (EG) [1], India (IN) [1], Indonesia (ID) [1], Israel (IL) [1], Latin America (LA) [1], Poland (PL) [1], Slovakia (SK) [1], Uruguay (UY) [1], Venezuela (VE) [1].
	*Currency's inspirational source [96 articles].	Number of iterations [in square brackets] giving the total number of inspirational sources of the currencies revealed in each research article—but that can represent the same currency with the same inspirational source several times [82 inspirational sources].	LIETAER Bernard [18], CAHN Edgar S. [15], GESELL Silvio [15], LINTON Michael [14], STEINER Rudolf [10], KENNEDY Margrit and Declan [9], SCHUMACHER Ernst Friedrich (Schumacher Center for a New Economics, E.F. Schumacher Society) [9], GRECO Jr. Thomas H. [7], MELO NETO SEGUNDO João Joaquim de [6], POLANYI Karl [6], SLATTER Matthew [6], Aktie Strohalm Foundation/ Social Trade Organization (STRO) [5], FISHER Irving [5], HOPKINS Rob [5], PLACE Christophe [5], ANDERSON Tim [4], BOSQUÉ Frédéric [4], DUNAND Christophe [4], ENDE Michael [4], MAYER Thomas [4], NISHIBE Makoto [4], WARYNSKI Danièle [4], ZYLSTRA Charles [4], KEYNES John Mayer [3], LENOBLE Françoise and Philippe [3], MARX Karl [3], RIEGEL Edwin C. [3], VIVERET Patrick [3], BLANC Jérôme [2], DeMEULENAERE Stephen [2], DERRUDER Philippe [2], HAYEK Friedrich [2], HOTTA Tsutomu [2], Italian Communist Party [it: Partito Comunista d'Italia] [2], KATO Toshiharu [2], LOGIE Richard [2], MARUYAMA Makoto [2], MIZUSHIMA Teruko [2], PRIMAVERA Heloísa [2], PROUDHON Pierre-Joseph [2], TAMANOI Yoshiro [2], TORTORIELLO Frank [2], BAKUNON Mikhail [1], BARINAGA Ester [1], BINDEWALD Leander [1], BROCK Arthur [1], COMMONS John R. [1], COSTANZA Robert [1], COVAS Horacio [1], Educational Cooperative Olga COSSETTINI [es: Cooperative Educational Olga COSSETTINI] [1], ESTILL Lyle [1], GODSCHALK Hugo [1], GÓMEZ Georgina [1], Green Review [1], GRIGNON Paul [1], HIROTA Yasuyuki [1], INGHAM Geoffrey K. [1], IZUMI Rui [1], KAMPERS Edgar [1], KINNEY Mark [1], KOBAYASHI Shigheto [1], KORTEN David [1], KROPOTKIN Peter [1], LAW John [1], LOWRY-MEEKER Susan [1], MITTERAND Danielle [1], MORINO Eiichi [1], NAKAMOTO Satoshi [1], New Economics Foundation (NEF) [1], NORTH Peter [1], NOUBEL Jean-François [1], GLOVER Paul [1], RAVERA Rubén [1], SAITO Kenji [1], SANZO Carlos de [1], SCHWARTZ Gilson [1], SEYFANG Gill [1], STODDER Jim [1], SUHR Dieter [1], The International Movement for Monetary Reform (IMMR) [1], WEBER Max [1], WILLIAMS Colin C. [1].
	*Currency format [185 articles].	Number of iterations [in square brackets] giving the total number of currency format of the currencies involved in each research article—but that can represent the same currency with the same format several times or even having a double format [185 currency formats].	physical format [154], digital format [141].
	*Distributed ledger technology [23 articles].	Number of iterations [in square brackets] giving the total number of distributed ledger technology of the currencies involved in each research article—but that can represent the same currency	Bitcoin [9], Loka Valuto/Com'Chain/Biletujo [4], Ripple [3], Ethereum [2], Facebook Libra/Diem [2], Bancor Network Token [1], Trustlines [1], Kohinos Federation [1], Colu [1], Euskopay [1], ImpakEco/ImpakCoin/POI [1], MoneyCloud [1], Neco.Finance/ Karma Token/Neocracy [1],

		with the same distributed ledger technology several times [16 distributed ledger technologies].	Rovas/Chron/Merit [1], WABA.network [1], Electronic Currency Time [1].
	*Currency objective [185 articles].	Number of iterations [in square brackets] giving the total number of objectives of the currencies involved in each research article—but that can represent the same currency with the same objective several times [4 objectives].	social (community, others-oriented, local solidarity) [122]; territorial (strengthen and stimulate a territory, a community) [91]; economic (commercial, self-oriented, liquidity) [89]; environmental (local consumption and production, re-use, eco-friendly behavior incentive) [41].
	*Sustainable development objective [185 articles].	Number of iterations [in square brackets] giving the total number of sustainable development objectives of the currencies involved in each research article—but that can represent the same currency with the same sustainable development objective several times [1 sustainable development objective, 1 economic objective].	economic and/or social or environmental or territorial [162], economic only [23], unknown [0].
	* Sustainable development objective of distributed ledger technology [25 articles].	Number of iterations [in square brackets] giving the total number of sustainable development objectives of the distributed ledger technologies involved in each research article—but that can represent the same distributed ledger technology with the same sustainable development objective several times [1 sustainable development objective, 1 economic objective].	economic and/or social or environmental or territorial [16], economic only [7], unknown [2].
	*Sustainable development pillars [194 articles].	Number of iterations [in square brackets] giving the total number of sustainable development pillars involved in each research article—but that can represent the same currency with the same sustainable development pillar several times [7 sustainable development pillars].	economic [187], social [144], culture [100], governance [69], lifestyle [61], environment [59], consciousness [40].
	Sustainable development pillars' explicit reference [20 articles].	Number of iterations [in square brackets] giving the total number of sustainable development pillars explicitly involved in each research article—but that can represent the same currency with the same sustainable development pillar several times [7 sustainable development pillars].	economic [20], culture [17], social [15], governance [14], environment [13], lifestyle [8], consciousness [6].
	*Sustainable development goals [194 articles].	Number of iterations [in square brackets] giving the total number of sustainable development goals involved in each research article—but that can represent the same currency with the same sustainable development goal several times [17 sustainable development goals].	decent work and economic growth/do good work (8) [160], industry and innovation and infrastructure/make smart choices (9) [154], partnerships for the goals/come together (17) [146], reduced inequality/be fair (10) [112], sustainable cities and communities/love where you live (11) [79], peace and justice and strong institutions/make peace (16) [73], quality education/learn and teach (4) [65], no poverty/help end poverty (1) [63], responsible consumption and production/live better (12) [54], good health and wellbeing/stay well (3) [39], climate action/act on climate (13) [18], zero hunger/eat better (2) [17], life on land/love nature (15) [10], affordable and clean energy/use clean energy (7) [12], gender equality/treat everyone equally (5) [8], clean water and sanitation/save water (6) [8], life below water/clean our seas (14) [4].
	*Sustainable development goals' explicit reference [3 articles].	Number of iterations [in square brackets] giving the total number of sustainable development goals explicitly involved in each research article—but that can represent the same currency with the same sustainable development goal several times [8 sustainable development goals].	no poverty/help end poverty (1) [1], clean water and sanitation/save water (6) [1], decent work and economic growth/do good work (8) [1], sustainable cities and communities/love where you live (11) [1], responsible consumption and production/live better (12) [1], climate action/act on climate (13) [1], life on land/love nature (15) [1], partnerships for the goals/come together (17) [1].
	Sustainability's explicit reference [110 articles].	Number of iterations [in square brackets] giving the total number of sustainability notion explicitly involved in each research article—but that can represent the same currency with the same sustainability notion several times [3 sustainability notions].	sustainable development [82], durability [21], resiliency [7].
	*Meta-theoretical paradigms [76 articles].	Number of iterations [in square brackets] giving the total number of meta-theoretical paradigms involved in each research article—but that can represent the same the same research article with	Edgar Morin's Complex Thought [53], Ken Wilber's Integral Theory [33], and/or Roy Bhaskar's Critical Realism [30].

		more than one meta-theoretical paradigm [3 meta-theoretical paradigms].	
	Meta-theoretical paradigms' explicit reference [8 articles].	Number of iterations [in square brackets] giving the total number of meta-theoretical paradigms explicitly involved in each research article—but that can represent the same research article with more than one meta-theoretical paradigm [3 meta-theoretical paradigms].	Edgar Morin's Complex Thought [7], Ken Wilber's Integral Theory [5], and/or Roy Bhaskar's Critical Realism [4].
	*Methodologies [194 articles].	Number of iterations [in square brackets] giving the total number of methodologies involved in each research article—but that can represent the same research article with more than one methodology [79 methodologies].	literature review (systems theory) [188], interview (ethnomethodology) [68], survey/questionnaire/voting (empiricism) [49], design (empiricism) [39], ledger (systems theory) [36], comparison (empiricism) [32], participant observation (hermeneutics) [31], autoethnography (structuralism) [26], visioning (hermeneutics) [22], prospective (systems theory) [17], participatory action research (structuralism) [15], statistics (systems theory) [15], comparative case study (empiricism) [12], case study comparison (empiricism) [11], typology/taxonomy categorization (empiricism) [11], legal analysis (systems theory) [10], accounting (systems theory) [9], case study (empiricism) [9], econometrics (systems theory) [9], focus group (hermeneutics) [9], macroeconomic analysis (systems theory) [7], velocity/multiplier effect formula (systems theory) [5], action research (hermeneutics) [4], analysis (empiricism) [4], database survey (empiricism) [4], translation (hermeneutics) [4], transaction network analysis (systems theory) [4], bibliographical database review (systems theory) [3], directory (empiricism) [3], cost–benefit analysis (systems theory) [2], economic theory (systems theory) [2], formula (systems theory) [2], forum discussion (hermeneutics) [2], participatory research (hermeneutics) [2], action learning (hermeneutics) [1], action-oriented ethnography (hermeneutics) [1], affinity diagram (empiricism) [1], archival data (systems theory) [1], artistic research methods (phenomenology) [1], atlas compendium (empiricism) [1], big data (systems theory) [1], business model canvas (empiricism) [1], clearing system comparison (systems theory) [1], closed contours computer simulation (systems theory) [1], complex evolutionary system (systems theory) [1], corpus linguistic approach (empiricism) [1], data mining (systems theory) [1], data review (systems theory) [1], discourse-historical approach (ethnomethodology) [1], ethnographic action research (hermeneutics) [1], expertise (hermeneutics) [1], fasting (phenomenology) [1], game workshop (hermeneutics) [1], geographic information system (systems theory) [1], heterarchical system design (systems theory) [1], illustration (empiricism) [1], impact classification (empiricism) [1], indicators (empiricism) [1], mapping (empiricism) [1], mathematical simulation (systems theory) [1], matrix (empiricism) [1], meditation (phenomenology) [1], methodological analysis (empiricism) [1], money creation diagram comparison (empiricism) [1], naturalistic statement (ethnomethodology) [1], network analysis (systems theory) [1], network linkage density (systems theory) [1], network transaction simulation (systems theory) [1], numismatic collection (empiricism) [1], policy proposition (systems theory) [1], price volatility (systems theory) [1], prototyping (systems theory) [1], Q-methodology (empiricism) [1], ready-made statement (system theory) [1], self-management framework (empiricism) [1], service category indicators (empiricism) [1], spatial computational statistics (systems theory) [1], success factors (empiricism) [1], theorization (empiricism) [1].
	*Methodologies for positive impact [49 articles].	Number of iterations [in square brackets] giving the total number of methodologies assessing a positive currency impact involved in each research article—but that can represent the same research article with more than one methodology [23 methodologies]	literature review (systems theory) [47], interview (ethnomethodology) [23], survey/questionnaire/voting (empiricism) [17], ledger (systems theory) [12], design (empiricism) [11], participant observation (hermeneutics) [11], autoethnography (structuralism) [10], comparison (empiricism) [10], econometrics (systems theory) [5], legal analysis (systems theory) [5], statistics (systems theory) [5], macroeconomic analysis (systems theory) [4], participatory action research (structuralism) [4], velocity/multiplier effect formula (systems theory) [4],

			case study (empiricism) [3], database survey (empiricism) [3], focus group (hermeneutics) [3], translation (hermeneutics) [3], accounting (systems theory) [2], typology/taxonomy categorization (empiricism) [2], action-oriented ethnography (hermeneutics) [1], closed contours computer simulation (systems theory) [1], comparative case study (empiricism) [1], cost–benefit analysis (systems theory) [1], directory (empiricism) [1], forum discussion (hermeneutics) [1], geographic information system (systems theory) [1], participatory research (hermeneutics) [1], network transaction simulation (systems theory) [1], prospective (systems theory) [1], transaction network analysis (systems theory) [1], visioning (hermeneutics) [1].
	*Methodologies for negative impact [8 articles].	Number of iterations [in square brackets] giving the total number of methodologies assessing a negative currency impact involved in each research article—but that can represent the same research article with more than one methodology [19 methodologies].	literature review (systems theory) [8], ledger (systems theory) [4], survey/questionnaire/voting (empiricism) [4], interview (ethnomethodology) [3], autoethnography (structuralism) [2], participant observation (hermeneutics) [2], accounting (systems theory) [1], action research (hermeneutics) [1], artistic research methods (phenomenology) [1], case study (empiricism) [1], comparative case study (empiricism) [1], comparison (empiricism) [1], data review (systems theory) [1], design (empiricism) [1], focus group (hermeneutics) [1], participatory action research (structuralism) [1], participatory research (hermeneutics) [1], statistics (systems theory) [2], typology/taxonomy categorization (empiricism) [1].
	*Multi-methodological frameworks [152 articles].	Number of iterations [in square brackets] giving the total number of multi-methodological frameworks using integral, mixed and/or creative methods research approaches involved in each research article—but that can represent the same research article with more than one multi-methodological framework [3 multi-methodological frameworks].	Integral Methodological Pluralism (IMP) [135], 'creative research' methods [105], 'mixed methods' research [77].
	Multi-methodological frameworks' explicit reference [6 articles].	Number of iterations [in square brackets] giving the total number of multi-methodological frameworks using integral, mixed and/or creative methods research approaches explicitly involved in each research article—but that can represent the same research article with more than one multi-methodological framework [3 multi-methodological frameworks].	Integral Methodological Pluralism (IMP) [5], 'creative research' methods [5], 'mixed methods' research [4].
	*Methodological families [135 articles].	Number of iterations [in square brackets] giving the total number of methodological family involved in each research article using Integral Methodological Pluralism (IMP) but excluding systems theory for literature review [6 methodological families].	empiricism [113], systems theory [82], hermeneutics [69], ethnomethodology [62], structuralism [27], phenomenology [2].
	Methodological families' explicit reference [1 article].	Number of iterations [in square brackets] giving the total number of methodological family explicitly involved in each research article using Integral Methodological Pluralism (IMP) but excluding systems theory for literature review [6 methodological families].	empiricism [1], systems theory [1], hermeneutics [1], ethnomethodology [1], structuralism [1], phenomenology [1].
	*Integral quadrants [129 articles].	Number of iterations [in square brackets] giving the total number of integral quadrants (above 2) involved in each research article using Integral Methodological Pluralism (IMP) but excluding systems theory for literature review [4 integral quadrants].	objective [112], inter-subjective [101], inter-objective [89], subjective [28].
	*Creative research [105 articles].	Number of iterations [in square brackets] giving the total number of 'creative research' methods involved in each research article but excluding multi modal research for 'mixed methods' research [4 creative research methods].	transformative research frameworks [69], research using technology [46], arts based research [2], embodied research [0].
	Creative research's explicit reference [3 articles].	Number of iterations [in square brackets] giving the total number of 'creative research' methods involved in each research article but excluding multi	research using technology [3], transformative research frameworks [1], arts based research [0], embodied research [0].

		modal research for 'mixed methods' research [4 creative research methods].	
	*Mixed methods [77 articles].	Number of iterations [in square brackets] giving the total number of 'mixed methods' research involved in each research article [4 mixed methods research].	case study [35], program evaluation [24], participatory-social justice [12], experimental/intervention [6].
	Mixed methods' explicit reference [28 articles].	Number of iterations [in square brackets] giving the total number of 'mixed methods' research involved in each research article [4 mixed methods research].	case study [20], program evaluation [5], participatory-social justice [2], experimental/intervention [1].
	*Leadership level/stage [144 articles].	Number of iterations [in square brackets] giving the total number of leadership 'level/stage' of development involved in each research article [4 levels/stages of development].	postmodern [110], modern [23], post-postmodern [11], premodern [0].
	*Organization level/stage [149 articles].	Number of iterations [in square brackets] giving the total number of organization 'level/stage' of development involved in each research article [4 levels/stages of development].	postmodern [111], modern [36], post-postmodern [2], premodern [0].
	*Currency level/stage [306 articles].	Number of iterations [in square brackets] giving the total number of currency type 'level/stage' of development involved in each research article [4 levels/stages of development].	premodern [116], postmodern [81], modern [81], post-postmodern [28].
	*Research level/stage [201 articles].	Number of iterations [in square brackets] giving the total number of research approach 'level/stage' of development involved in each research article [4 levels/stages of development].	modern [92], postmodern [69], post-postmodern [28], premodern [12].
	*Methodology level/stage [230 articles].	Number of iterations [in square brackets] giving the total number of methodological framework 'level/stage' of development involved in each research article [4 levels/stages of development].	modern [130], postmodern [74], premodern [17], post-postmodern [9].
	*Integral money definition [194 articles].	Number of iterations [in square brackets] giving the total number of each notion related to a definition hypothesis of 'integral money' in each research article [10 integral money notions].	collaboration [188], concept/tool [152], value [133], changing [79], rule/law [71], behaviour [71], evolutive [65], belief [53], stable [3], regressive [0].
	*Four quadrants' circle [194 articles].	Number of iterations [in square brackets] giving the total number of each circle related to the integral 'four quadrants' in each research article [4 integral circles].	inter-objective moneyer [178], inter-subjective manager [129], objective researcher [76], subjective leader [36].
	*Four quadrants' topic [194 articles].	Number of iterations [in square brackets] giving the total number of each topic related to the integral 'four quadrants' in each research article [4 integral topics].	inter-objective money [192], inter-subjective love [125], subjective god [23], objective sex [1].
	*Four quadrants' science [194 articles].	Number of iterations [in square brackets] giving the total number of each science related to the integral 'four quadrants' in each research article [4 integral sciences].	inter-objective social [194], inter-subjective ideological [131], subjective spiritual [20], objective natural [8].
	*Conspiracy theory [194 articles].	Number of iterations [in square brackets] giving the total number of conspiracy theory in each research article [5 conspiracy theories].	world government [38], extra-terrestrial [0], afterlife origin [0], invisible entities [0], satanic ritual [0].
Quantitative	All articles [194 articles].	All articles published in the International Journal of Community Currency Research over the period 1997–2022 corresponding to volumes 1–26 [194 publications].	Seyfang, 1997; Jackson, 1997; Williams, 1997; Stodder, 1998; Ingleby, 1998; Gran, 1998; Williams et al., 1998; Pierret, 1999; Laacher, 1999; Caldwell, 2000; Liesch and Birch, 2000; DeMeulenaere, 2000b; DeMeulenaere and Lopezllera-Mendez, 2000a; Fitzpatrick, 2000; Plinge, 2001; Cahn, 2001; Williams et al., 2001; Schraven, 2001; Powell, 2002; Schroeder, 2002; Seyfang, 2002; Taylor, 2003; Lietaer, 2004b; North, 2004; Wheatley et al., 2004b; Wheatley et al., 2004a; Lepofsky and Bates, 2005; Sharma, 2005; Hawranick Serra, 2006; Scott Cato, 2006; Schroeder, 2006; Lietaer, 2006d; DeMeulenaere, 2006; Lietaer and Ardron, 2006c; Pereyra, 2007; Rosa i Esteva et al., 2007; Collom, 2007; DeMeulenaere, 2007; Mascornick, 2007; Krohn and Snyder, 2008; Soder, 2008; DeMeulenaere, 2008; Vasconcelos Freire, 2009; Gelleri, 2009; Walker, 2009; Gregory, 2009; Kuik, 2009; Seyfang and Longhurst, 2010; Warner, 2010; Mouatt, 2010; Ozanne, 2010; Slater, 2011; Banks, 2011; Naughton-Doe, 2011; Kirschner, 2011b; Ryan-Collins, 2011; Fare, 2011; Szalay, 2011;

			Lizotte and Duhaime, 2011; Place, 2011h; Brenes, 2011; Sotiropoulou, 2011; Hirota, 2011; Thiel, 2011; Rogers, 2011; Blanc, 2011; Boyle, 2011; Wheatley et al., 2011; Dittmer, 2011; Kaplan, 2011; Jones, 2011b; Kirschner, 2011a; Schroeder et al., 2011; Jones, 2011a; Molnar, 2011; Ruddick, 2011; Bindewald et al., 2012; Joachain and Klopfert, 2012; Young, 2012; Nishibe et al., 2012c; Hiramoto and Nakazato, 2012; Szalay et al., 2012; Scott Cato and Suárez Casado, 2012; Volkmann, 2012; Thiel, 2012; Gómez, 2012; Sotiropoulou, 2012; Godschalk, 2012; Nishibe and Kichiji, 2012b; Nishibe, 2012a; Gatch, 2012; Elvins, 2012; Wainwright, 2012; Pfajfar et al., 2012; Hayashi, 2012; Collom, 2012; Martignoni, 2012; Groppa, 2013; Jegatheesan et al., 2013; Greco, 2013; Jansen, 2013; Martignoni and Huber, 2013; Boik, 2014; Steinkopf Rice, 2014; Brooks, 2015; Hugues, 2015; Fesenfeld et al., 2015; Place and Bindewald, 2015c; Martignoni, 2015; Sotiropoulou, 2015; Stodder and Rosa i Esteva, 2015; Schroeder, 2015; Orzi, 2015; Ruzzene, 2015; Kang and Hong, 2015; Krabbe, 2015; Miyazaki et al., 2015; Gómez, 2015; Della Peruta and Torre, 2015; Ruddick et al., 2015; Fare et al., 2015; Kavčič, 2016; Tichit et al., 2016; Smith and Lewis, 2016; Clement et al., 2017; Kampers et al., 2017; Littera et al., 2017; Paiva Sobrinho et al., 2017; Bove, 2017; Gawthorpe, 2017; Moral-Espín, 2017; Burgess, 2017; Josavac, 2017; Yoshida and Kobayashi, 2018; Miyazaki and Kurita, 2018; Toncheva, 2018; Bonanno, 2018; Place, 2018c; Blanc and Fare, 2018b; Théret, 2018; Dissaux, 2018; Nishibe, 2018; Schroeder, 2018; Rosa i Esteva et al., 2018; Sobiecki, 2018; Place et al., 2018b; Friis and Glaser, 2018; Diniz et al., 2018; Ruzzene, 2018; Martignoni, 2018; Moreira Alves and Ferreira dos Santos, 2018b; Orzi, 2019; Sánchez de la Blanca Díaz-Meco, 2019; Gómez, 2019; Muns Terrats and Segura Bonet, 2019b; Hirota, 2019; Muns Terrats et al., 2019a; Honzawa, 2019; Prittwitz, 2019; Tichit, 2019; Hueber, 2019; September, 2019; Barinaga, 2019; Scalfoni Rigo, 2020; Kavčič, 2020; Larue, 2020; Viana, 2020; Blanc and Lakócai, 2020; Miyazaki et al., 2020; Schroeder, 2020; Nakayama and Kuwata, 2020; Diniz et al., 2020; Berg and Zvereva, 2020; Meng and Ueda, 2020; Petz, 2020; Pinos et al., 2020b; Pinos, 2020a; Dan and Okabe, 2021; Zatko, 2021; Berg and Panachev, 2021; Hayashi, 2021; Stodder and Gelleri, 2021; Théret and Coutrot, 2021; Heysham et al., 2021; Place et al., 2021r; Orzi et al., 2021; Yoshida et al., 2021; Stamm, 2021; Kavčič, 2021; Contreras Ramirez, 2021; Priolo, 2021; Hudon and Meyer, 2021; Eskelinen and Wekken, 2022; Petz and Eskelinen, 2022.
	Articles in English [184 articles].	All articles wrote in English [184 articles in English].	Seyfang, 1997; Jackson, 1997; Williams, 1997; Stodder, 1998; Ingleby, 1998; Gran, 1998; Williams et al., 1998; Caldwell, 2000; Liesch and Birch, 2000; DeMeulenaere, 2000b; DeMeulenaere and Lopezllera-Mendez, 2000a; Fitzpatrick, 2000; Plinge, 2001; Cahn, 2001; Williams et al., 2001; Schraven, 2001; Powell, 2002; Schroeder, 2002; Seyfang, 2002; Taylor, 2003; Lietaer, 2004b; North, 2004; Wheatley et al., 2004b; Wheatley et al., 2004a; Lepofsky and Bates, 2005; Sharma, 2005; Hawranick Serra, 2006; Scott Cato, 2006; Schroeder, 2006; Lietaer, 2006d; DeMeulenaere, 2006; Lietaer and Ardron, 2006c; Pereyra, 2007; Rosa i Esteva et al., 2007; Collom, 2007; DeMeulenaere, 2007; Mascornick, 2007; Krohn and Snyder, 2008; Soder, 2008; DeMeulenaere, 2008; Vasconcelos Freire, 2009; Gelleri, 2009; Walker, 2009; Gregory, 2009; Kuik, 2009; Seyfang and Longhurst, 2010; Warner, 2010; Mouatt, 2010; Ozanne, 2010; Slater, 2011; Banks, 2011; Naughton-Doe, 2011; Kirschner, 2011b; Ryan-Collins, 2011; Fare, 2011; Szalay, 2011; Lizotte and Duhaime, 2011; Place, 2011h; Brenes, 2011; Sotiropoulou, 2011; Hirota, 2011; Thiel, 2011; Rogers, 2011; Blanc, 2011; Boyle, 2011; Wheatley et al., 2011; Dittmer, 2011; Kaplan, 2011; Jones, 2011b; Kirschner, 2011a; Schroeder et al., 2011; Jones, 2011a; Molnar, 2011; Ruddick, 2011; Bindewald et al., 2012; Joachain and Klopfert, 2012; Young, 2012; Nishibe et al., 2012c; Hiramoto and Nakazato, 2012; Szalay et al., 2012; Scott Cato and Suárez Casado, 2012; Volkmann, 2012; Thiel, 2012; Gómez, 2012; Sotiropoulou, 2012; Godschalk, 2012; Nishibe and Kichiji, 2012b; Nishibe, 2012a; Gatch, 2012; Elvins, 2012; Wainwright, 2012; Pfajfar et al., 2012; Hayashi, 2012; Collom, 2012;

			Martignoni, 2012; Groppa, 2013; Jegatheesan et al., 2013; Greco, 2013; Jansen, 2013; Martignoni and Huber, 2013; Boik, 2014; Steinkopf Rice, 2014; Brooks, 2015; Hugues, 2015; Fesenfeld et al., 2015; Place and Bindewald, 2015c; Martignoni, 2015; Sotiropoulou, 2015; Stodder and Rosa i Esteva, 2015; Schroeder, 2015; Orzi, 2015; Ruzzene, 2015; Kang and Hong, 2015; Krabbe, 2015; Miyazaki et al., 2015; Gómez, 2015; Della Peruta and Torre, 2015; Ruddick et al., 2015; Fare et al., 2015; Kavčič, 2016; Tichit et al., 2016; Smith and Lewis, 2016; Clement et al., 2017; Kampers et al., 2017; Littera et al., 2017; Paiva Sobrinho et al., 2017; Bove, 2017; Gawthorpe, 2017; Moral-Espín, 2017; Burgess, 2017; Josavac, 2017; Yoshida and Kobayashi, 2018; Miyazaki and Kurita, 2018; Toncheva, 2018; Bonanno, 2018; Place, 2018c; Blanc and Fare, 2018b; Théret, 2018; Dissaux, 2018; Nishibe, 2018; Schroeder, 2018; Rosa i Esteva et al., 2018; Sobiecki, 2018; Place et al., 2018b; Friis and Glaser, 2018; Diniz et al., 2018; Ruzzene, 2018; Martignoni, 2018; Moreira Alves and Ferreira dos Santos, 2018b; Tichit, 2019; Hueber, 2019; September, 2019; Barinaga, 2019; Scalfoni Rigo, 2020; Kavčič, 2020; Larue, 2020; Viana, 2020; Blanc and Lakócai, 2020; Miyazaki et al., 2020; Schroeder, 2020; Nakayama and Kuwata, 2020; Diniz et al., 2020; Berg and Zvereva, 2020; Meng and Ueda, 2020; Petz, 2020; Pinos et al., 2020b; Pinos, 2020a; Dan and Okabe, 2021; Zatko, 2021; Berg and Panachev, 2021; Hayashi, 2021; Stodder and Gelleri, 2021; Théret and Coutrot, 2021; Heysham et al., 2021; Place et al., 2021r; Orzi et al., 2021; Yoshida et al., 2021; Stamm, 2021; Kavčič, 2021; Contreras Ramirez, 2021; Priolo, 2021; Hudon and Meyer, 2021; Eskelinen and Wekken, 2022; Petz and Eskelinen, 2022.
	Articles in Spanish [8 articles].	All articles wrote in Spanish [8 articles in Spanish].	Orzi, 2019; Sánchez de la Blanca Díaz-Meco, 2019; Gómez, 2019; Muns Terrats and Segura Bonet, 2019b; Hirota, 2019; Muns Terrats et al., 2019a; Honzawa, 2019; Prittwitz, 2019.
	Articles in French [2 articles].	All articles wrote in French [2 articles in French].	Pierret, 1999; Laacher, 1999.
	Own research publications cited [11 articles].	Number of iterations [in square brackets] giving the total number of my own research publications cited in each research article [14 publications cited 29 times].	PLACE and BINDEWALD (2015) [6]; PLACE (2012) [3]; PLACE, BINDEWALD, and NGINAMAU (2013) [3]; PLACE and BINDEWALD (2013) [3]; PLACE (2018) [3]; PLACE (2015) [2]; PLACE and BENDELL (2019) [2]; PLACE (2010) [1]; PLACE (2011a) [1]; PLACE (2011b) [1]; PLACE, CALDERON and CORDEIRO (2017) [1]; PLACE, CALDERON, STODDER, and WALLIMANN (2018) [1]; PLACE and LAFFERTY (2019) [1]; PLACE (In Press) [1].
	Own research publications cited by others than me [7 articles].	Number of iterations [in square brackets] giving the total number of my own research publications cited by others than me involved in each research article [8 publications cited 11 times].	PLACE and BINDEWALD (2015) [4]; PLACE (2012) [1]; PLACE, BINDEWALD, and NGINAMAU (2013) [1]; PLACE and BINDEWALD (2013) [1]; PLACE (2018) [1]; PLACE and BENDELL (2019) [1]; PLACE (2011b) [1]; PLACE, CALDERON, STODDER, and WALLIMANN (2018) [1].
	Own research publications cited by me [4 articles].	Number of iterations [in square brackets] giving the total number of my own research publications cited by me involved in each research article [12 publications cited 18 times].	PLACE and BINDEWALD (2015) [2]; PLACE (2012) [2]; PLACE, BINDEWALD, and NGINAMAU (2013) [2]; PLACE and BINDEWALD (2013) [2]; PLACE (2018) [2]; PLACE (2015) [2]; PLACE and BENDELL (2019) [1]; PLACE (2010) [1]; PLACE (2011a) [1]; PLACE and LAFFERTY (2019) [1]; PLACE (In Press) [1].
	*Systems theory methodology [90 articles].	Articles that used methodological families from systems theory as the interdisciplinary study of complex systems—cohesive groups of interrelated and interdependent components that can be natural or human-made [90 articles using systems theory].	Seyfang, 1997; Stodder, 1998; Laacher, 1999; Schraven, 2001; Sharma, 2005; Scott Cato, 2006; Vasconcelos Freire, 2009; Gelleri, 2009; Walker, 2009; Kuik, 2009; Mouatt, 2010; Szalay, 2011; Lizotte and Duhaime, 2011; Place, 2011h; Hirota, 2011; Kirschner, 2011a; Schroeder et al., 2011; Ruddick, 2011; Bindewald et al., 2012; Young, 2012; Hiramoto and Nakazato, 2012; Scott Cato and Suárez Casado, 2012; Godschalk, 2012; Nishibe and Kichiji, 2012b; Nishibe, 2012a; Pfajfar et al., 2012; Collom, 2012; Groppa, 2013; Martignoni and Huber, 2013; Boik, 2014; Fesenfeld et al., 2015; Place and Bindewald, 2015c; Martignoni, 2015; Sotiropoulou, 2015; Stodder and Rosa i Esteva, 2015; Ruzzene, 2015; Kang and Hong, 2015; Della Peruta and Torre, 2015; Ruddick et al., 2015; Kavčič, 2016; Tichit et al., 2016; Kampers et al., 2017; Littera et al., 2017; Paiva Sobrinho et al., 2017; Bove, 2017; Gawthorpe, 2017; Moral-Espín, 2017; Josavac, 2017; Yoshida and Kobayashi, 2018; Bonanno, 2018; Blanc and Fare, 2018b; Théret, 2018; Nishibe, 2018; Rosa i Esteva et al., 2018; Place et al., 2018b; Friis and Glaser, 2018; Diniz et al., 2018; Ruzzene, 2018; Martignoni, 2018; Moreira Alves and Ferreira dos Santos, 2018b; Muns Terrats and Segura Bonet, 2019b; Hirota,

			2019; Muns Terrats et al., 2019a; Tichit, 2019; Hueber, 2019; September, 2019; Barinaga, 2019; Scalfoni Rigo, 2020; Kavčič, 2020; Blanc and Lakócai, 2020; Miyazaki et al., 2020; Diniz et al., 2020; Berg and Zvereva, 2020; Meng and Ueda, 2020; Petz, 2020; Pinos et al., 2020b; Pinos, 2020a; Dan and Okabe, 2021; Zatko, 2021; Berg and Panachev, 2021; Hayashi, 2021; Stodder and Gelleri, 2021; Théret and Coutrot, 2021; Heysham et al., 2021; Place et al., 2021r; Orzi et al., 2021; Yoshida et al., 2021; Stamm, 2021; Kavčič, 2021; Priolo, 2021.
	*Econometric method [63 articles].	Articles that used quantitative methods of econometrics as the application of statistical methods to economic data in order to give empirical content to economic relationships—such as monetary multiplier effect, velocity, circulation, turnover, leger, accounting, transaction, etc. [63 articles using econometric method].	Seyfang, 1997; Jackson, 1997; Stodder, 1998; Schroeder, 2002; Lepofsky and Bates, 2005; Sharma, 2005; Scott Cato, 2006; DeMeulenaere, 2006; DeMeulenaere, 2007; Krohn and Snyder, 2008; DeMeulenaere, 2008; Gelleri, 2009; Walker, 2009; Ruddick, 2011; Hiramoto and Nakazato, 2012; Scott Cato and Suárez Casado, 2012; Thiel, 2012; Godschalk, 2012; Nishibe and Kichiji, 2012b; Pfajfar et al., 2012; Collom, 2012; Groppa, 2013; Greco, 2013; Martignoni and Huber, 2013; Boik, 2014; Steinkopf Rice, 2014; Place and Bindewald, 2015c; Martignoni, 2015; Sotiropoulou, 2015; Stodder and Rosa i Esteva, 2015; Schroeder, 2015; Della Peruta and Torre, 2015; Ruddick et al., 2015; Kavčič, 2016; Littera et al., 2017; Bove, 2017; Gawthorpe, 2017; Moral-Espín, 2017; Josavac, 2017; Yoshida and Kobayashi, 2018; Bonanno, 2018; Blanc and Fare, 2018b; Rosa i Esteva et al., 2018; Martignoni, 2018; Muns Terrats and Segura Bonet, 2019b; Muns Terrats et al., 2019a; Hueber, 2019; September, 2019; Barinaga, 2019; Scalfoni Rigo, 2020; Kavčič, 2020; Blanc and Lakócai, 2020; Diniz et al., 2020; Berg and Zvereva, 2020; Pinos et al., 2020b; Pinos, 2020a; Berg and Panachev, 2021; Hayashi, 2021; Stodder and Gelleri, 2021; Heysham et al., 2021; Orzi et al., 2021; Stamm, 2021; Kavčič, 2021.
	*Author's sex [194 articles].	Number of iterations [in square brackets] giving the total number of genders of the researchers involved in each research article—but that can represent the same researcher with the same gender several times [2 genders for 324 authors].	male [232], female [92].
	*Research's type [194 articles].	Number of iterations [in square brackets] giving the total number of research's type involved in each research article—but that can represent the same research article with more than one research's type [4 types of research].	practical [150], theoretical [54], proposal [33], bibliographical [8].
	*Research's temporality [194 articles].	Number of iterations [in square brackets] giving the total number of research's temporality involved in each research article—but that can represent the same research article with more than one research's temporality [3 temporality].	retrospective [110], actual [90], prospective [43].
	*Impact framework [128 articles].	Number of iterations [in square brackets] giving the total number of impact framework proposed in each research article—proceeding an impact assessment in the broad sense of impact [46 impact framework propositions].	impact framework [46].
	*Impact evaluation [128 articles].	Number of iterations [in square brackets] giving the total number of impact evaluation encouraged in each research article—proceeding an impact assessment in the broad sense of impact [58 impact evaluation encouragements].	impact evaluation [58].
	*Further research [128 articles].	Number of iterations [in square brackets] giving the total number of further research expected in each research article—proceeding an impact assessment in the broad sense of impact [67 further research expectations].	further research [67].
	*Articles on existing currencies [185 articles].	Number of iterations [in square brackets] giving the total number of articles that studied existing currencies—but that can represent the same research article with more than one studied existing currency [185 articles studying existing currencies].	articles that studied existing currencies [185].
	*Currency's active existence [157 articles].	Number of iterations [in square brackets] giving the total number of existence of currencies involved in each research	active [110], unknown [10], inactive [37].

		article—but that can represent the same currency in different research articles [3 existences].	
	Currency's operating duration [33 articles].	Year of operating duration of an inactive currency in average involved in each research article—but that can represent the same currency in different research articles [1'612 existing currency systems].	6.92 as year of operating duration of an inactive currency on average (min: 0.33, max: 21).
	*Organization's type [159 articles].	Number of iterations [in square brackets] giving the total number of types of organizations involved in each research article—but that can represent the same organization in different research articles [3 types of organization].	non-profit [128], for-profit [22], hybrid [9].
	*Implementation approach [165 articles].	Number of iterations [in square brackets] giving the total number of implementation approaches of organizations involved in each research article—but that can represent the same organization in different research articles [3 implementation approaches].	bottom-up [133], top-down [29], both [3].
	*Currency's convertibility [271 articles].	Number of iterations [in square brackets] giving the total number of convertibility of currencies involved in each research article—but that can represent the same currency in different research articles [4 convertibility].	not convertible [127], semi-convertible [99], convertible [39], interbank exchange rate [6].
	*Currency's legality [349 articles].	Number of iterations [in square brackets] giving the total number of legalities of currencies involved in each research article—but that can represent the same currency in different research articles [4 legalities].	restricted [149], regulated [110], unregulated/unrestricted [76], banned [14].
	Existing currencies studied [148 articles]	Number of existing currency systems in average studied in each research article—but that can represent the same existing currency in different research articles [80 existing currency systems].	80 existing currency systems studied by each research article on average (sum: 11'801, min: 1, max: 2'082).
	Currency's individual [95 articles].	Number of individual members of currencies in average studied in each research article—but that can represent the same existing currency in different research articles [7'671 existing currency systems].	189'726 individuals on average (sum: 18'024'006, min: 40, max: 3'682'484).
	Currency's organization [57 articles].	Number of organization members of currencies in average studied in each research article—but that can represent the same existing currency in different research articles [4'418 existing currency systems].	4'921 organizations on average (sum: 285'502, min: 9, max: 104'250).
	Currency's bureau de change [10 articles].	Number of bureaux de change of currencies in average studied in each research article—but that can represent the same existing currency in different research articles [2'214 existing currency systems].	41 bureaux of change on average (sum: 408, min: 10, max: 59).
	Cross-border scheme [11 articles].	Number of cross-border schemes in average studied in each research article—but that can represent the same existing currency in different research articles [213 existing currency systems].	27.6 cross-border countries on average (min: 2, max: 64).
	Currency units in injection [57 articles].	Number of injected currency units in average studied in each research article—but that can represent the same existing currency in different research articles [2'827 existing currency systems].	430'367'721 injected currency units on average (sum: 24'530'960'141, min: 352, max: 15'392'920'800).
	Currency units in circulation [52 articles].	Number of circulated currency units in average studied in each research article—but that can represent the same existing currency in different research articles [5'396 existing currency systems].	254'486'208 circulated currency units on average (sum: 13'233'282'813, min: 376, max: 8'464'000'000).
	Currency units in collection [9 articles].	Number of collected currency units in average studied in each research article—but that can represent the same	474'724 collected currency units on average (sum: 4'272'522, min: 290, max: 1'483'231).

		existing currency in different research articles [475 existing currency systems].	
	Currency's velocity/multiplier [24 articles].	Percentage of multiplier effect or velocity of circulation which is dynamic circulation divided by static injection of an existing currency in average involved in each research article—but that can represent the same existing currency in different research articles [1'630 existing currency systems].	1'211% of multiplier effect or velocity of circulation on average (min: 10%, max: 19'150%).
	Currency's launch date [144 articles].	Year of a launch date of an existing currency in average involved in each research article—but that can represent the same existing currency in different research articles [11'418 existing currency systems].	1982 as year of launch date on average (min: 914, max: 2021).
	*Currency's targeted population [47 articles].	Percentage of a targeted population of an existing currency in average involved in each research article—but that can represent the same existing currency in different research articles [4'008 existing currency systems].	7.33% of a targeted population on average (min: 0.01%, max: 83.41%).
	*Currency's monetary mass or gross domestic product [23 articles].	Percentage of a national monetary mass or local gross domestic product of an existing currency in average involved in each research article—but that can represent the same existing currency in different research articles [736 existing currency systems].	3.01% of a national monetary mass or local gross domestic product on average (min: 0.000004%, max: 51.32%).
	Currency's demurrage [13 articles].	Percentage of demurrage rate of currencies in average involved in each research article—but that can represent the same existing currency in different research articles [1'245 existing currency systems].	28% of demurrage rate per year on average (min: 3%, max: 260%).
	Currency's interest [5 articles].	Percentage of interest rate of currencies in average involved in each research article—but that can represent the same existing currency in different research articles [41 existing currency systems].	4.8% of interest rate per year on average (min: 3%, max: 12%).
	Currency's conversion [17 articles].	Percentage of conversion rate of currencies in average involved in each research article—but that can represent the same existing currency in different research articles [612 existing currency systems].	5.1% of conversion rate on average (min: 2%, max: 50%).
	Currency's face value [47 articles].	Number of currency units per hour as face value of currencies in average studied in each research article—but that can represent the same existing currency in different research articles [2'642 existing currency systems].	14.06 currency units per hour on average (min: 0.33, max: 100).
	Currency's nominal value [37 articles].	Number of nominal value of currencies in average studied in each research article—but that can represent the same existing currency in different research articles [1'830 existing currency systems].	2'711 as nominal value on average (min: 1/20, max: 20'000).
	Currency's denomination note [37 articles].	Number of iterations [in square brackets] giving the total number of denomination note of currencies involved in each research article—but that can represent the same currency in different research articles [20 denomination notes].	10 [29], 1 [28], 5 [28], 20 [24], 50 [17], 2 [11], 1/2 [8], 1'000 [7], 500 [7], 100 [7], 200 [6], 1/4 [5], 1/8 [4], 1/10 [4], 3.14 π [3] 5'000 [2], 2'000 [2], 20'000 [1], 10'000 [1], 1/20 [1].
	Currency's validity period [11 articles].	Year of validity period of currencies in average involved in each research article—but that can represent the same existing currency in different research articles [544 existing currency systems].	2.4 years of currency validity period on average (min: 0.08, max: 7).
	Currency's credit/debit limit [10 articles].	Number of currency units for credit/debit limit of currencies in average studied in each research article—but that can represent the same existing currency in different research articles [408 existing currency systems].	-23'963/+1'657 currency units for credit/debit limit on average (min: -200'000, max: +7'000).
	Currency's discount [21 articles].	Percentage of discount rate of currencies in average involved in each research article—but that can represent the same	13.2% of discount rate on average (min: 1%, max: 50%).

		existing currency in different research articles [2'519 existing currency systems].	
	Currency's donation [12 articles].	Percentage of donation rate of currencies in average involved in each research article—but that can represent the same existing currency in different research articles [119 existing currency systems].	8.0% of donation rate on average (min: 0.5%, max: 40%).
	Currency's loan [10 articles].	Number of currency units for loan amount of currencies in average studied in each research article—but that can represent the same existing currency in different research articles [2'115 existing currency systems].	3'518 currency units for loan amount on average (min: 30, max: 30'000).
	Currency's grant [8 articles].	Number of currency units for grant amount of currencies in average studied in each research article—but that can represent the same existing currency in different research articles [116 existing currency systems].	2'903 currency units for grant amount on average (min: 20, max: 65'000).
	*Interorganizational partnership [85 articles].	Number of organizations for interorganizational partnership in average studied in each research article—but that can represent the same existing currency in different research articles [5'213 existing currency systems].	12.6 organizations on average (sum: 1'073, min: 1, max: 350).
	*Interoperability network [36 articles].	Number of internetworks for interoperability network in average studied in each research article—but that can represent the same existing currency in different research articles [4'766 existing currency systems].	321.1 internetworks on average (min: 2, max: 1'221).
	*Multicurrency system [31 articles].	Number of currency systems within a multicurrency system in average studied in each research article—but that can represent the same existing currency in different research articles [3'788 existing currency systems].	2.9 currency systems on average (min: 2, max: 7).
	Product diversity [6 articles].	Number of product diversity offered by currencies in average studied in each research article—but that can represent the same existing currency in different research articles [573 existing currency systems].	17.8 offered products on average (min: 3, max: 27).
	*Sustainable development pillars' number [194 articles].	Number of sustainable development pillars in average involved in each research article—but that can represent the same currency with the same sustainable development pillar several times [5 sustainable development pillars].	2.87 of these 5 pillars in average or four-seventh (57.6%) (min: 1, max: 5).
	*Sustainable development goals' number [194 articles].	Number of sustainable development goals in average involved in each research article—but that can represent the same currency with the same sustainable development goal several times [17 sustainable development goals].	5.26 of these 17 goals in average or two-seventh (30.9%) (min: 1, max: 13).
	*Meta-theoretical paradigms' number [76 articles].	Number of meta-theoretical paradigms in average involved in each research article—but that can represent the same research article with the same meta-theoretical paradigm several times [3 meta-theoretical paradigms].	1.51 of these 3 paradigms in average or one-half (50.4%) (min: 1, max: 3).
	*Methodologies' number [194 articles].	Number of methodologies in average involved in each research article—but that can represent the same research article with more than one methodology [9 methodologies].	3.66 methodologies in average (min: 1, max: 9).
	*Methodologies excluding literature review's number [183 articles].	Number of methodologies excluding literature review in average involved in each research article—but that can represent the same research article with more than one methodology [8 methodologies excluding literature review].	2.86 methodologies excluding literature review in average (min: 1, max: 8).

	*Methods' number [194 articles].	Number of methods in average involved in each research article—but that can represent the same research article with more than one method [26 methods].	5.92 methods in average (min: 1, max: 26).
	Oldest bibliographical reference date [178 articles].	Year of the oldest bibliographical reference in average involved in each research article—but that can represent the same research article with more than one date of bibliographical reference [178 oldest bibliographical references].	1939 as year of the oldest bibliographical reference on average (min: 360 BC, max: 2009 AD).
	Data collection's date [144 articles].	Year of data collection in average involved in each research article—but that can represent the same research article with more than one date of data collection [144 years of data collection].	2008.4 as year of data collection on average (min: 1974, max: 2021).
	*Data collection's duration [68 articles].	Year of the duration of data collection in average involved in each research article—but that can represent the same research article with more than one data collection [68 durations of data collection].	8.49 as year of duration of data collection on average (min: 0.003, max: 181).
	Data collection's response rate [23 articles].	Percentage of response rate of data collection in average involved in each research article—but that can represent the same research article with more than one response rate of data collection [23 responses].	44% response rate of data collection on average (min: 6%, max: 79%).
	Data collection's respondent [120 articles].	Number of respondent of data collection in average involved in each research article—but that can represent the same research article with more than one respondent [120 data collections].	160.2 respondents of data collection on average (min: 1, max: 7'000).
	*Data collection's knowledge source [194 articles]	Number of iterations [in square brackets] giving the total number of knowledge source of data collection involved in each research article—but that can represent multiple knowledge sources in the same research article [3 knowledge sources].	primary data [140], secondary data [121], tertiary data [6].
	*Multi-methodological frameworks' number [151 articles].	Number of multi-methodological frameworks using integral, mixed and/or creative methods research approaches in average involved in each research article—but that can represent the same research article with more than one multi-methodological framework [3 multi-methodological frameworks].	2.09 of these 3 multi-methodological frameworks in average or five-seventh (69.8%) (min: 1, max: 3).
	*Methodological families' number [135 articles].	Number of methodological families in average involved in each research article—but that can represent the same research article with more than one methodological family [8 methodological families].	2.63 of these 8 methodological families in average or two-third (32.9%) (min: 2, max: 6).
	*Integral quadrants' number [183 articles].	Number of integral quadrants in average involved in each research article but excluding systems theory for literature review—but that can represent the same research article with more than one integral quadrant [4 integral quadrants].	2.03 of the corresponding 4 integral quadrants in average or one-half (50.7%) (min: 1, max: 4).
	*Creative research's number [105 articles].	Number of 'creative research' methods in average involved in each research article but excluding multi modal research for 'mixed methods' research—but that can represent the same research article with more than one 'creative research' [4 creative research].	1.10 of these 4 'creative research' methods in average or two-seventh (27.6%) (min: 1, max: 2).
	*Mixed methods' number [77 articles].	Number of 'mixed methods' research in average involved in each research article—but that can represent the same research article with more than one 'mixed method' [4 mixed methods].	1 of these 4 'mixed methods' research in average or one-fourth (25.0%) (min: 1, max: 1).

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TAXONOMIES OF CCCS: UNVEILING MONEY'S POLITICAL NATURE

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ABSTRACT

This paper explores the classification of Community and Complementary Currency Systems (CCCs), focusing on the taxonomies proposed in academic research. Within this experimental landscape, diverse terminologies and frameworks highlight the need to explore how these currencies are categorized in academic research. The study emphasizes the indicators used to construct taxonomies, revealing the implicit monetary theories underpinning them. It argues for a perspective on money that transcends orthodox economic approaches, prioritizing its political dimensions.

Drawing on a comprehensive dataset—including the RAMICS Association database and supplementary literature—this analysis underscores the growing interest in systematic frameworks to capture the complex nature and social value of CCCs. The findings advocate for multidimensional and interdisciplinary approaches to avoid reducing the understanding of money to technical or economic impacts. Instead, the paper positions money as a fundamentally political instrument.

The evolution of classification indicators provides insights into the theoretical frameworks guiding CCCs taxonomies, enriching the broader discourse on monetary systems. This review forms a pivotal part of a doctoral research project on money and 'monedas sociales,' offering valuable contributions to the study of alternative currencies and their socio-political implications.

KEYWORDS

Community Currency Systems, Complementary Currencies, Monetary Taxonomies, Alternative Monetary Theories

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1. INTRODUCTION

Complementary and Community Currency Systems (CCCs) have undergone significant evolution since their emergence during the Great Depression, exemplified by initiatives such as the WIR in Switzerland or the stamp scrips circulating in Wörgl, Austria, later replicated in the United States. While their vitality remained moderate until the 2007 financial crisis, recent decades have witnessed a proliferation of these systems, reflecting a broader diversification of objectives and an expansion in their social and economic impact.

CCCs offer a rich field of study for understanding money not merely as a medium of exchange but as a deeply embedded social and political construct. Over time, classifications of CCCs have sought to move beyond their functional and operational characteristics, addressing the paradigms and values underlying their design. As Doria and Fantacci (2017) emphasize, evaluation practices in this field are never "neutral": "The analysis and evaluation of a social phenomenon is never a 'neutral' representation but should always be viewed as a process that contributes to build it, to construct it as a scientific and socio-political object" (p. 2). This paper builds on this perspective, further situating itself within the theoretical frameworks of Zelizer (2001) and Orzi (2012, 2017), who argue that money is inseparable from the social relations and power structures that shape it.

The present study explores the political dimension of CCCs through a review of taxonomies[1], focusing on their potential to crystallize social structures and values. As Ingham (2004) asserts, money "expresses a balance of social and political forces" (p. 26), while Orzi (2012) highlights its role in reproducing the social systems in which it is embedded (p. 123). The analysis seeks to address an ontological question: What is the nature of currency? By examining how CCCs are categorized and assessed, this paper identifies elements that underscore their role as instruments of governance and political action.

Through this detailed review, the paper contributes to the broader debate on the socio-political nature of money, demonstrating how CCCs challenge traditional monetary paradigms. By adopting a multidisciplinary approach, it emphasizes the importance of considering currency as a social and political creation, reflecting the interests and power dynamics of those who hold monetary sovereignty

This study adopts an open and multidisciplinary perspective to investigate the phenomenon of money, as Orzi (2017) highlights: "money presents itself as a comprehensive institution whose study requires a multidisciplinary effort" (p. 19, own translation). By examining various taxonomies of CCCs, the research seeks to shed light on the interplay between monetary architecture, objectives, sovereignty, and the values underpinning money issuance.

As Zelizer (2001) argues, monetary innovations create "circuits of commerce," spaces where market practices are contextualized through shared symbols, ethical codes, and socio-relational factors. This perspective highlights the distinct features of CCCs as more than informal networks or community practices, emphasizing their complexity as socio-political constructs.

The term 'taxonomy' refers to a standardized framework for categorizing and organizing objects, originating in the natural sciences and later evolving to include various fields of study (Simpson, 1961)i. In the context of CCCs, taxonomies provide a crucial tool for simplifying complexity, enabling researchers to classify these systems based on their features, governance, and socio-economic impacts. By selecting and defining relevant indicators, taxonomy construction reflects theoretical frameworks and research priorities, offering insights into money as a complex socio-political construct. This approach underpins the present study, which reviews taxonomies to explore their potential for advancing our understanding of money as a political fact.

Such an approach is critical for understanding currency as a tool that reflects social practices and intangible dynamics.

[1] Taxonomy originates from the natural sciences, with its earliest formalization by Linnaeus in 1735. Candolle expanded the concept in 1813, emphasizing its theoretical foundations, principles, and rules (Simpson, 1961). Over time, taxonomy has transcended its original domain, becoming a key tool in diverse fields, including the study of monetary systems.

Guided by this perspective, the research addresses a central question: How can CCC taxonomies contribute to a deeper understanding of money? Specifically, should money be understood as a "political construct" before being considered an economic one?

2. INDICATORS FOR CATEGORIZING MONEY: FROM KEYNES TO CCCS

The classification of money has long been a subject of interest in economics, offering insights into its multifaceted nature.

2.1 CLASSIFYING MONEY: INSIGHTS FROM KEYNESIAN THEORY

In his seminal work *Treatise on Money*, John Maynard Keynes offers a foundational classification of money, emphasizing its evolution under the dual influence of state authority and banking systems. A key distinction introduced by Keynes is between "money" and "money of account." While "money" serves as a medium for settling debts and contracts, "money of account" functions as a symbolic record linked to debts and prices: "Money of account comes into existence along with debts and prices, and it is as old as the oldest civilisations" (Keynes, 1930, p. 3). This distinction highlights the symbolic and legal underpinnings of monetary systems, where monetary sovereignty—governed by state law or community custom—plays a crucial role in defining acceptable forms of settlement.

Keynes further elaborates a taxonomy of three primary forms of money—commodity, fiat, and managed money. Commodity money derives its value from intrinsic properties and is governed by law or custom. Fiat money, in contrast, lacks an intrinsic standard and relies entirely on state authority. Managed money bridges these categories, as it adjusts its value standard based on economic needs and policy considerations (ibid., p. 8). These categories illustrate the dynamic interplay between governance structures, socio-political forces, and economic priorities shaping monetary systems.

Expanding his classification, Keynes introduces additional forms such as reserve money, member bank money, central bank money, and current money. These categories reflect the complex dynamics of ownership, issuance, and circulation within a monetary system, emphasizing the interconnections between state authority and banking institutions. As Keynes notes, the relationship between these forms and "money of account" remains fundamental: "Even when the money of account changes, it continues to be linked to the forms of money it replaces, ensuring continuity" (ibid., p. 5).

Keynes's analysis emphasizes the inherently political nature of money. From legal definitions governing contracts to the use of banknotes as instruments of public debt, money emerges not only as an economic tool but also as a vehicle for social and political power. This perspective challenges the mainstream economic view of money as a neutral medium, proposing instead an endogenous vision in which currency is embedded in the socio-political structures that shape its creation and use: "Money, as a means to settle debt, reflects a balance of power and sovereignty within the economic system" (ibid., pp. 20-43).

The political and economic dimensions of Keynes's monetary theory can be summarized as follows:

Table 1: political and economic aspect of monetary theory of Keynes

Economic elements	**Political Elements**
Function in relation to debt contracts and transactions (prices)	Relationship to debt contracts and price lists
Property, understood as ownership (possession)	Monetary sovereignty, defining types of contracts, means of extinguishing them, issuing money and choosing a standard.
How owners choose to use it	

Complementing Keynes's framework, Zelizer (1989) explores the social meaning of money through the concept of "earmarking," where money's use is linked to personal choices and priorities. This perspective reveals broader cultural dynamics of adherence or rejection within dominant social norms. Circuit theorists expand on this by emphasizing the political implications of money ownership, particularly when credit access is reserved exclusively for firms. They argue that money, as an endogenous element of the system, reflects power dynamics and political control over economic resources.

2.2 EXPLORING THE DEMATERIALIZATION OF MONEY: CENTRAL BANK DIGITAL CURRENCIES (CBDCS)

The evolution of digital money has introduced new forms of currency that challenge traditional categorizations. A study by Cunha et al. (2021) proposes a taxonomy for Central Bank Digital Currencies (CBDCs), identifying four primary categories of money: commodity, agency, fiat, and scriptural or electronic money. This classification reflects a historical trend toward the dematerialization of money, a process accelerated by advancements such as digital payment systems, cryptocurrencies, and electronic wallets.

The taxonomy for CBDCs is structured around key indicators, including issuer (central bank or otherwise), form (digital or physical), accessibility (broad or limited), and technology (token/value-based or account-based). These variables capture the complexities of digital money's design and governance. For instance, the development of CBDCs involves balancing considerations such as privacy, interoperability, and the roles of various stakeholders, while addressing sovereignty and central bank authority.

Cunha et al. (2021) emphasize that the architecture of coinage, governance practices, and accessibility limits are critical to understanding CBDCs as political constructs. Sovereignty plays a pervasive role in the creation and regulation of digital currencies, underscoring their inherently political nature. As the authors argue, "the classification of money must incorporate the political dimension, even if not explicitly highlighted as an indicator" (Cunha et al., 2021).

Table 2: political and economic aspect of monetary theory presented

Economic elements	**Political Elements**
Security, accessibility, and technology.	Omnipresence of sovereignty, particularly in centralised decision-making by the monetary authority during coinage
Economic and architectural design considerations for CBDC establishment.	Indicators related to the internal functioning of the central bank (internal governance and in relation to CBDCs)
Identification of key characteristics influencing CBDC typology.	
Importance of defining rules and limits for each currency (owners, circulation area, etc.).	

This analysis reveals the intersection of economic and political dimensions in the design and implementation of CBDCs. For example, the architecture of coinage and governance practices, such as defining access and circulation limits, reflects political choices tied to sovereignty. These considerations are particularly evident in the central bank's role, where internal governance and decision-making influence how digital currencies are structured and utilized.

The complexity of CBDCs highlights the importance of incorporating the political dimension into monetary classification efforts. By examining the economic and political trade-offs in CBDC design, Cunha et al. (2021) underline the need for a comprehensive approach that goes beyond technological and economic variables to consider the broader governance framework.

2.3 LINKING CLASSICAL AND MODERN PERSPECTIVES TO CCCS

Keynes's classification of money and the analysis of CBDCs highlight the necessity of examining indicators that transcend purely economic dimensions, revealing the deeply embedded socio-political nature of monetary systems. From Keynes's concept of "money of account" as a symbolic link to debts and contracts, to the contemporary challenges posed by the dematerialization of money in CBDCs, governance and sovereignty emerge as central forces shaping the structure and function of currency.

These insights provide a valuable lens for exploring the taxonomies of Complementary and Community Currency Systems (CCCs). CCCs, like other monetary systems, are influenced by socio-political objectives and governance structures. The role of political variables—such as sovereignty, decision-making processes, and the architecture of coinage—becomes increasingly evident in the classification and assessment of CCCs. This connection aligns with the broader argument that money, whether in its historical forms or as a digital construct, cannot be fully understood without considering its role as a political and social tool.

In the following sections, the focus will shift to how these political dimensions are reflected in the construction of CCC taxonomies. By systematically analyzing the categories and indicators used in CCC classifications, this study examines how governance, socio-political objectives, and values influence the assessment and design of monetary experiments.

2.4 SHORTLIST OF TAXONOMIES REVIEWED

The initial step in constructing the reference database involved identifying relevant papers by reviewing their abstracts and introductions to assess their suitability. All selected studies were deemed valid as they presented taxonomic models and/or included significant variables and indicators for the classification of CCCs. This initial selection was further enriched by incorporating additional research identified through references within the analyzed studies.

However, certain geographical limitations emerged during the database compilation. For instance, no studies were identified from Asia, Africa, or Oceania, likely due to language constraints or the limitations of the search engines employed. Similarly, for Latin America, the only studies included were those conducted by Prof. Orzi and the research group at the University of Luján, with whom I have collaborated. These geographical gaps represent a notable limitation of the present study and highlight the need for future research to address this disparity.

Despite these constraints, the decision was made to include all taxonomies identified through the search process, ensuring the broadest possible representation within the methodological boundaries of this study.

Below is a chronological shortlist of the taxonomies selected for analysis:

Table 3: Chronological list of compared taxonomies

Author(s)	Year	Type of work in which it is embedded	Title of work in which it is embedded
Bode	2004	Degree scientific work	Potentials of regional complementary currencies to promote endogenous regional development (own tr.)
Lietaer & Kennedy	2004	Research book	Regional currencies: New paths to sustainable prosperity (own tr.)
Padua Solidary Economy District (Pesce et al.)	2005	Dossier	Complementary currencies (own tr.)
Blanc	2011	Doctoral Dissertation	Classifying 'CCs': Community, Complementary and Local Currencies'
Blanc	2012	Paper	Classifying 'CCs': Community, Complementary and Local Currencies'
Martignoni	2012	Paper	A new approach to a typology of complementary currencies

Orzi et al.	2012	Research book	Social currency and solidarity markets II: social currency as a social tie (own tr.)
Erasmus University Rotterdam research team (Boonstra et al.)	2013	Report	Social and Economic Effects of Complementary Currencies
Sayfang & Longhurst	2012	Paper	Money, Money, Money
Sayfang & Longhurst	2013	Paper	Growing Green Money? Mapping Community Currencies for Sustainable Development
Bindewald et al.	2013	Working paper	Validating and improving the impact of complementary currency systems: impact assessment frameworks for sustainable development: The deployment of theory of change approach and evaluation standards for their impact assessment
Bindewald & Place	2015	Paper	Validating and improving the impact of complementary currency system as through impact assessment frameworks
Siqueira & Diniz	2016	Journal Article	Journal Article: Social Currencies, Digital Challenges: a taxonomic proposal (own tr.)
Tichit et al.	2016	Journal Article	Classifying non-bank currency systems using web data.

In addition to the reviewed taxonomies, Corrons' doctoral thesis (2017) was included due to its relevance in analyzing the adoption of CCCs. Corrons examines the influence of human values and attitudes on the adoption of virtual non-monetary exchange networks, employing attitudinal, motivational, and panarchic approaches.

3. TAXONOMY REVIEW

This section reviews key taxonomies of Complementary and Community Currency Systems (CCCs) to trace their evolution in structure, indicators, and theoretical underpinnings. The analysis highlights how these classifications reflect specific conceptions of money and align with the research question: **How can the study of taxonomies in the field of CCCs provide a deeper understanding of money as a 'political instrument'?**

Detailed tables and supplementary information about the taxonomies are provided in the appendix. This section focuses on identifying their limitations and innovations, with an emphasis on how they address socio-political dimensions of money.

3.1 TAXONOMY 1: BODE (2004)

Bode's study, *Potentials of Regional Complementary Currencies to Promote Endogenous Regional Development*, rooted in geography, examines CCCs as tools to counteract the economic, social, and environmental degradation caused by globalisation. Conducted within the German context, this research highlights CCCs' role in fostering local development as complements—not substitutes—to official currencies.

Indicators:

1. Type of circuit: Local Exchange Trading Schemes (LETS), barter clubs, voucher systems.
2. Stakeholders involved: C2C, B2B, B2C dynamics.
3. Openness or closure of the system: Whether access is restricted or open.
4. Currency backing: Service-backed or currency-backed models.

This taxonomy prioritises economic aspects, such as the functioning of local monetary systems and their capacity to stimulate production cycles and value chains. However, it fails to address governance structures or the socio-

political dimensions inherent in monetary experiments. The omission of objectives and intentions underpinning CCs implies a reductionist perspective, viewing these tools solely as mechanisms for economic improvement.

From a political perspective, Bode's framework implicitly alludes to the reappropriation of monetary sovereignty at the local level, even though it does not explicitly address this dimension. By focusing on positive economic outcomes, the taxonomy overlooks the broader implications of monetary sovereignty and its transformative potential for local communities.

3.2 TAXONOMY 2: LIETAER & KENNEDY (2004)

Lietaer and Kennedy's work, *Regional Currencies: New Paths to Sustainable Prosperity,* employs a historical perspective to categorise monetary experiments, emphasising their potential to address globalisation's challenges through localised economic practices.

Indicators:

1. Purpose: Legal tender, commercial, and social objectives.
2. Medium of exchange: Commodity money, electronic money, hybrid forms.
3. Functions: Measure of value, store of value, medium of exchange.
4. Money creation processes: Central issuance, mutual credit systems.
5. Cost recovery mechanisms: Transaction fees, demurrage, and others.

This taxonomy underscores the political implications of money creation, highlighting how patterns of issuance and governance reflect the priorities of those holding monetary sovereignty. By integrating ecological and social objectives, such as cultural identity and social justice, Lietaer and Kennedy frame money as a complex social institution rather than a neutral economic tool.

The study explicitly connects monetary practices to societal power dynamics, portraying CCCs as instruments of "monetary resistance" against the marginalisation perpetuated by conventional economic systems. This political undertone enriches the taxonomy, making it a foundational reference for understanding CCs' broader socio-political roles.

3.3 TAXONOMY 3: PADUA SOLIDARITY ECONOMY DISTRICT (2005)

The taxonomy developed by the Padua Solidarity Economy District originates from a dossier titled *Monete Complementari* (*Complementary Currencies*), which examines currency experiments in Italy, Germany, and the United States. It emerges from a critical perspective on the market-driven conception of currency. Aiming to recover the relational dimension of exchange.

Indicators:

1. Issuance: Backed money (collateral-based), fiduciary currencies (unbacked but convertible), bank-type scriptural money.
2. Acceptance: Circulation scope (typically more limited than fiat money).
3. Convertibility: Ease of converting currencies into others.
4. Preservation of value over time: Accumulation rules.

Additional dimensions include:

- Objectives: Goals underpinning the project.
- Regulatory framework: Legal and institutional context.

- Market space and traded goods/services: Types of exchanges supported.

This taxonomy indirectly acknowledges governance by emphasising policy mechanisms for stabilising currency as a public measure. Although governance indicators remain implicit, the study underscores the interplay between monetary functionality and public policies, linking the creation of CCCs with efforts to promote social justice.

3.4 TAXONOMY 4 AND 5: BLANC (2011, 2012)

Blanc's taxonomy, initially presented at the International Conference of Complementary and Community Currencies (2011) and refined in subsequent publications, is a cornerstone in the classification of CCCs. It integrates both historical and linguistic dimensions to distinguish between territorial, community, and economic currencies. The refined taxonomy is structured as follows:

1. Nature of projects: Territorial, community, or economic.
2. Space considered: Geopolitical, social, or economic.
3. Purpose: Redistribution, reciprocity, or market orientation.
4. Guiding principles: Sovereignty, strengthening communities, or stimulating the economy.

Blanc's classification introduces a nuanced understanding of sovereignty, positioning CCCs as distinct from national or for-profit currencies. By excluding sovereignty and profit motives, the taxonomy emphasises democratic participation and grassroots organisation, distinguishing CCCs from capitalist monetary systems. Politically, Blanc's work asserts that CCCs operate in a separate realm, driven by participatory governance and collective objectives. This framing highlights their potential to redefine monetary sovereignty through democratic and inclusive practices.

3.5 TAXONOMY 6: MARTIGNONI (2012)

Martignoni's taxonomy employs a multidimensional matrix to categorise CCCs based on trust, creation processes, circulation principles, and purpose. The matrix assesses monetary instruments across four dimensions:

1. Trust basis: Ranging from material assets to personal relationships.
2. Creation process: Spanning central agency issuance to collective member creation.
3. Circulation principles: Addressing costs or premiums for saving.
4. Purpose: From individual to collective public benefit.

Drawing on Riegel's theory, Martignoni frames money as a tool for organising human relations, extending its analysis beyond economic functionality to include the ideological and governance structures underpinning monetary systems.

Politically, this taxonomy foregrounds governance as integral to monetary systems. By linking trust, participation, and institutional design, it positions CCCs as tools for enacting ideological and governmental frameworks distinct from capitalist norms.

3.6 TAXONOMY 7: ORZI (2012)

Orzi proposes a taxonomy to analyze "moneda social" initiatives active in Argentina, such as those in Capilla del Monte and Venado Tuerto. This classification stands out for its focus on the economic, social, symbolic, and political dimensions of these currencies. The specific indicators are divided into six main categories:

1. Origin and objectives: Historical and contextual background, goals.
2. Trust types: Social, goods, services.
3. Governance and ideology: Governance models, values, and symbolic representation.

4. Market characteristics: Openness, products traded.
5. Participant characteristics: Rationality, motivations, bonds.
6. Organizational structures: Decision-making processes, management.

Orzi's taxonomy uniquely positions social currency as a political institution rooted in the social and cultural context where it operates. The political dimension emerges prominently in:

- Governance model: The currency is created and managed through collective decision-making processes, reflecting the solidarity economy paradigm.
- Values promoted: The ideology and symbolism of the currency serve as tools to reinforce practices of resistance to capitalist systems.
- Relationship with the state: The tension between community independence and institutional interaction highlights the currency's role as a tool for political autonomy.

In summary, Orzi's taxonomy acknowledges that currency is not merely an economic tool but a key element in constructing alternative social models. Its focus on values, community relations, and organizational practices makes this classification particularly relevant for understanding the transformative potential of social currencies.

3.7 TAXONOMY 8: ERASMUS UNIVERSITY ROTTERDAM (2013)

Developed by a research team at Erasmus University Rotterdam, this taxonomy emerged from close collaboration with Complementary Currency organisations, including key figures like Edgar Kampers (QOIN) and Henk van Arkel (STRO). The research aimed to explore the objectives and impacts of CCCs, categorising them into three main groups:

1. Social objectives: Enhancing relational spaces within communities.
2. Economic objectives: Stimulating and protecting local economies.
3. Digital systems: Leveraging technology for various purposes.

While the taxonomy provides valuable insights into CC functionality, its limited focus on governance and political dimensions leaves significant gaps. Nevertheless, the study emphasises the importance of monetary sovereignty and the governance structures supporting CCCs.

Politically, this taxonomy underscores governance logic, linking currency design to the quality of implementation. By prioritising decision-making processes, it highlights governance as a critical factor shaping CCCs' success.

3.8 TAXONOMY 9 AND 10: SAYFANG & LONGHURST (2012, 2013)

Sayfang and Longhurst's research, rooted in grassroots innovation studies, provides a comprehensive mapping of CCC projects globally. Conducted across 23 countries on six continents, their empirical work catalogued over 3,400 initiatives, selecting cases that fit their definition of grassroots currencies. The taxonomy categorises these projects into four types:

1. Service credits: Based on time remuneration.
2. Mutual exchange systems: Facilitating internal community trade.
3. Local currencies: Geographically limited economic tools.
4. Barter markets: Promoting prosumer dynamics in local exchanges.

This taxonomy integrates environmental, social, and economic dimensions, aligning CC objectives with sustainability principles. Politically, the study frames CCCs as tools for embedding sustainability into economic practices, challenging traditional monetary paradigms through participatory and locally grounded governance models.

3.9 TAXONOMY 11 AND 12: BINDEWALD ET AL. (2013, 2015)

Bindewald et al.'s taxonomy, developed as part of the Community Currencies in Action (CCIA) project, aimed to evaluate the impact of CCCs using a multidimensional framework. Drawing on case studies such as Timebanks, Regiogeld, and Banco Palmas, the taxonomy assesses CCCs across five dimensions:

1. Economic: From financial inclusion to externalities internalisation.
2. Social: Needs satisfaction and wealth circulation.
3. Environmental: Reducing ecological footprints.
4. Political: Collaborative governance and stakeholder engagement.
5. Cultural: Recognition, diversity, and legitimacy from governing institutions.

This taxonomy explicitly incorporates governance, framing CCCs as tools for socio-economic transformation within the social and solidarity economy paradigm. It underscores participatory and democratic governance as central to CC development, highlighting the importance of governance and policy frameworks in ensuring their success.

The proposed matrix employs meta-, macro-, meso-, and micro-level analyses, offering a comprehensive understanding of CCC objectives and outcomes. By positioning CCCs as instruments of socio-political transformation rather than neutral economic tools, the taxonomy underscores their potential to align monetary practices with the principles of democratic participation and the social and solidarity economy.

3.10 TAXONOMY 13: SIQUEIRA & DINIZ (2016)

Siqueira and Diniz's taxonomy emerges from the need to address the operational challenges of digital social currencies, which are increasingly significant in the context of digitisation. The study, titled *Social Currencies, Digital Challenges: A Taxonomic Proposal,* analyses 17 digital social currency projects, providing insights into the role of technology in shaping these systems. The authors categorise CCCs based on technological infrastructure and circulation characteristics, reflecting the transition from traditional to digital formats.

1. Technological infrastructure: From intensive to restricted systems.
2. Circulation characteristics: Including user trust and system interoperability.

While the taxonomy offers valuable insights into the impact of digitalisation on CCCs, its scope is primarily technical, with limited attention to governance or the socio-political dimensions of monetary systems. Nevertheless, it highlights the need for robust governance frameworks that address the complexities introduced by digital systems.

Politically, the taxonomy underscores the transformative potential of digital social currencies, emphasising that governance is essential to ensure their alignment with broader socio-economic objectives. By framing technology as a critical factor for sustainability, it calls for participatory structures capable of navigating the unique challenges posed by digitalisation.

3.11 TAXONOMY 14: TICHIT, MATHONNAT & LANDIVAR (2016)

Tichit, Mathonnat, and Landivar propose a taxonomy derived from web data and lexical analysis, categorising non-bank currencies into five distinct groups: bank, crisis, LETS, local, and Bitcoin. This approach provides a nuanced understanding of the socio-political contexts that shape monetary systems, drawing attention to governance as a critical factor in currency design and implementation. Using lexical analysis, this taxonomy categorises non-bank currencies into five groups: bank, crisis, LETS, local, and Bitcoin. It highlights the socio-political contexts embedded in monetary systems.

Indicators:

1. Dependency on fiat currencies: Degrees of reliance or independence.

2. Profit orientation: Commercial or non-profit models.
3. Social value: Emphasis on community, solidarity, and social objectives.
4. Governance models: Highlighted through terms such as "private" and "reform."

The taxonomy links monetary systems to ideological and governance structures, showing how CCCs challenge dominant economic paradigms. Governance models are highlighted as essential for understanding the political dimensions of non-bank currencies.

3.12 CORRONS (2017)

Corrons examines virtual non-monetary exchange networks through a panarchic lens, focusing on the interconnectedness of psychological, moral, and socio-political factors that influence participation. The study's approach integrates individual motivations and collective value systems, framing these currencies as adaptive and complex.

Indicators:

1. Participant motivations: Values, attitudes, and beliefs shaping engagement.
2. Governance structures: Dynamic and adaptive decision-making processes.
3. Network characteristics: Interconnections within virtual systems.
4. Cultural values: Influence on design and operation of CC systems.

Corrons views CCCs as adaptive systems that integrate individual and collective value systems, framing governance as context-dependent. By prioritising participant motivations, the taxonomy connects the personal with the political, highlighting CCCs' potential to transform socio-economic structures.

4. OVERVIEW AND EVALUATIONS

There is an unmistakable shift towards complexity in the taxonomies employed to comprehend complementary currencies (CCCs). This shift reflects an effort to capture the multifaceted nature of monetary phenomena, encompassing more than just architectural features and circulation objectives. The taxonomies extend their scope to include market characteristics, the political underpinnings of monetary institutions, and the psychological and intentional attributes of involved actors.

Efforts are underway to construct multidimensional evaluation systems for CCCs that integrate both individual and societal dimensions, operating at micro, meso, and macro levels. This approach positions money as a complex social fact, interconnected with the broader social system, values, beliefs, attitudes, and societal needs.

Governance models emerge as key indicators for identifying the beneficiaries and objectives of currency circulation. Political agreements that precede the creation of a monetary instrument shape its architecture, revealing the values and interests of its stakeholders. This design process underscores the role of monetary architecture as a reflection of governance intentions.

See table 4 in Appendix for a summary that compares the studied taxonomies.

4.1 EXPLORING POLITICAL DIMENSIONS IN MONETARY TAXONOMIES

The aim here is to highlight the dimensions (i.e., factors of classification within taxonomies) that reflect the political characteristics of currency, allowing it to be defined as a political instrument. This means understanding its political nature rather than reducing it to its economic function, as is often done from an economic perspective.

First, there is a long-standing need to understand monetary forms in terms of power dynamics, encompassing individual, ownership, and broader monetary sovereignty considerations. This has been demonstrated in Keynes's classifications and highlighted in research on forms that respond to the interests of authorities such as central banks.

Even those taxonomies that do not mention the political dimension in their structure still report on the importance of elements that are at least related to the monetary issue or the legislative context in which CCCs are embedded.

Secondly, we can attempt a first classification of the taxonomies by highlighting the main features on which they are based. Some taxonomies emphasise, in markedly different ways, the design features and the functioning of the monetary instrument (Bode, 2004; Martignoni, 2012), while others stress the importance of aspects such as the goals and objectives of such projects (Lietaer & Kennedy, 2004; Padua Solidarity Economy District, 2005; Blanc, 2011; Boonstra et al., 2013). Other attempts focus on the technological infrastructure and the characteristics of the currency that support its circulation (Siqueira & Diniz, 2016).

The studies of Seyfang & Longhurst (2012, 2013) focus on differentiating world experiments into four categories defined by criteria such as the reference area of circulation, the type of currency guarantee, and the supporting technology, and in a second step, the environmental impact. Similarly, Tichit, Mathonnat, and Landivar (2016) propose a taxonomy based on the semantics used in web pages dedicated to various projects. Orzi et al. (2012), on the other hand, focus on these dimensions as well as the characteristics of currencies, while considering the observed paradigms and their impacts in terms of social innovation, beyond economic effects.

Corrons (2017) shows that individual psychological and attitudinal aspects can also be of interest for a deeper understanding of participation in contemporary monetary circuits, offering an additional dimension that can be added to classifications. Other classification efforts, such as those by Blanc (2012) and Bindewald et al. (2013, 2015), align with the desire to study monetary experiments holistically, employing systemic perspectives. Where Blanc refers to geopolitical contexts, Bindewald et al. refer to concentric spaces of action that transcend institutional political frameworks.

A classification of these taxonomies based on their focus on the political dimension allows us to create two macro-categories:

Table 5: Classification of taxonomies according to the presence of indicators inherent to the political dimension

Without political indicators	**With political indicators**
Bode, 2004	Lietaer & Kennedy, 2004
Padua Solidarity Economy District, 2005	Blanc, 2011, 2012
Boonstra et al., 2013	Martignoni, 2012
Siqueira & Diniz, 2016	Orzi R. et al., 2012
Corrons, 2017	Bindewald L., Nginamau M., Place C., 2013 - Bindewald L., Place C. 2015
Sayfang & Longhurst, 2012 - 2013	Tichit, Mathonnat and Landivar, 2016

4.1.1. Political Indicators in Taxonomies

Among taxonomies that explicitly address the political dimension, there are notable differences in the proposed indicators. These can be grouped into four key categories:

1. Money Creation Process:
   Focuses on how monetary instruments are issued, emphasizing sovereignty in monetary creation. (e.g., Lietaer & Kennedy, 2004; Martignoni, 2012).

2. Geopolitical Sovereignty:
   Examines the territoriality of currency circulation, distinguishing between CCCs and national or for-profit currencies. (e.g., Blanc, 2011, 2012).

3. Money Governance:
   Explores governance structures directly tied to the creation and management of monetary instruments. (e.g., Tichit, Mathonnat, and Landivar, 2016).

4. Project Governance:
   Includes participatory models, decision-making processes, and organizational structures beyond the monetary scope. (e.g., Bindewald et al., 2013, 2015; Orzi et al., 2012).

Table 6: Division of the taxonomies according to the type of indicators of the political dimension

Money creation process	Geopolitical sovereign	Money governance	Project Governance
Lietaer & Kennedy, 2004 Martignoni, 2012	Blanc, 2011, 2012	Tichit, Mathonnat and Landivar, 2016	Bindewald, Nginamau and Place, 2013 Bindewald and Place, 2015 Orzi R. et al., 2012

4.1.2. Analysis of Indicators

The political dimension of currency is not limited to the characteristics of the issuance process. Instead, it encompasses the broader context of governance models, values, ideologies, and organizational practices. These elements reflect the intentions and power dynamics of the actors who hold monetary sovereignty. By incorporating political indicators, the taxonomies move beyond economic analysis to explore governance as a tool for socio-political transformation.

For example:

- Taxonomies by Lietaer & Kennedy (2004) and Martignoni (2012) highlight the central role of the creation process.
- Blanc (2011, 2012) emphasizes geopolitical sovereignty.
- Bindewald et al. (2013, 2015) explore participatory governance and civic engagement.

It is clear from the foregoing that the political dimension of currency is not limited to the characteristics of the issuance process, which are subject to "rules" that are defined a priori. In fact, the monetary architecture, the objectives, the purposes—and thus the entire governance model of a monetary instrument—depend on a broader context characterised by certain actors (who are the holders of monetary sovereignty) with their own values and world views, and by logics, ideologies, and organisational models that underpin the prospective construction of instruments that will subsequently be used in common. The limits and possibilities offered by territory, particularly in terms of legality, can also be added.

Furthermore, it appears that it is difficult to find the most appropriate indicators to include in the matrices created to classify CCCs. This is particularly noticeable in the taxonomies proposed by Martignoni (2012) and Seyfang & Longhurst (2012-2013), which, as we have seen, present theoretical foundations that emphasise the social role and political function of currency.

5. CONCLUSIONS

This paper underscores the necessity of rethinking money as a complex social and political phenomenon, emphasizing its role as an instrument of governance. By examining CCC taxonomies, the study demonstrates how governance structures and political dimensions are increasingly integrated into monetary instruments through specific indicators. These taxonomies reveal the extent to which money, far from being a neutral economic tool, reflects broader societal power dynamics, ideologies, and organizational practices.

The taxonomies analyzed highlight the complexity of new monetary experiments, challenging the reductionist econometric models of orthodox economics. This complexity calls for a paradigm shift that recognizes money as a social fact deeply embedded in its ontological and external dimensions. Field studies underline the necessity of enriched indicators to fully capture the nuances of contemporary currencies, particularly their socio-political dimensions.

The construction of CCCs often emerges from the desire to challenge capitalist models of social reproduction, reflecting both individual and collective aspirations for alternative governance practices and sustainable relationships with the environment. This dual focus on the psychological and moral dimensions of individuals, alongside

governance and monetary architecture, underscores the potential of CCCs to promote more equitable and participatory economic systems.

Money is inherently linked to the mechanisms by which societies reproduce their cultural and social patterns. Particularly in capitalist societies, money plays a central role in shaping social order through short- and long-term processes. CCCs represent an opportunity to explore alternative models of social reproduction, as they allow for the renegotiation of values and power structures that underpin monetary systems.

An interdisciplinary perspective reveals that money is not only an economic instrument but also a material and symbolic construction tied to human coexistence. As Aristotle recognized, money is deeply linked to ethical and societal structures, serving both as a technology of governance and a symbol of coexistence. These dual roles make money a tool for organizing societal relationships and ensuring subsistence, while also reflecting shared values and ideologies.

The insights gained from CCC experiments indicate that citizens and local institutions are advocating for monetary forms that align with social justice, economic viability, and environmental sustainability. These initiatives challenge the values embedded in capitalist systems, proposing models that prioritize collective governance and shared responsibility.

Reflecting on these dynamics invites further research into the dimensions and indicators necessary for understanding money beyond its economic characteristics. As previously explored, money can be conceived as a governance technology akin to a government tool (Martin, 2013). This perspective aligns with the ontological exploration of money, exemplified by Evans' (2009) question: *Do values change money, or does money change values?*

By drawing on the work of scholars such as Ingham and Orzi, this study highlights the transformative potential of CCCs. They not only validate and express the values of their creators but also offer opportunities for redistributing power and fostering more equitable monetary systems. Future research should delve deeper into these dimensions, exploring how monetary systems can be designed to support more just and sustainable social orders.

In conclusion, the study of CCCs provides a lens to examine the intersections of governance, societal values, and economic practices. This interdisciplinary approach emphasizes the need to integrate political and ethical considerations into the study of money, fostering a more holistic understanding of its role in human coexistence and societal organization.

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APPENDIX, TABLE 4: COMPARING TAXONOMIES OF CCCS

	Bode S. (2004)	Lietaer & Kennedy (2004)	Padua Solidary Economy District (2005)	Blanc (2011 – 2012)	Martignoni (2012)	Orzi (2012)	Boonstra et al. (2013)	Sayfang & Longhurst (2012 – 2013)	Bindewald, Nginamau & Place (2013) Bindewald & Place (2015)	Siqueira & Diniz (2016)	Tichit, Mathonnat and Landivar (2016)	Corrons (2017)
Relationship/Scope of circulation/Nature of project & space considered/Type of participants	x		x	x		x		x	x	x	x	
Actor's general and physiologic features						x						x
Actors' own rationality						x						x
Stakeholder recognition									x			
Payment System/Partnerships/Community bonds	x			x		x						
Backing / Value	x		x								x	
Cost recovery		x										
Convertibility			x	x		x				x		
Preservation of value (accumulation and rules)			x									
Circulation principles (saving cost)					x							
Administration of working capital						x						
Purpose		x		x	x			x	x			
Guiding Principles				x							x	
Medium/Technology		x				x	x	x		x		x
Functions		x						x				
Money Creation process		x			x			x	x	x	x	
Secondary creation (credit)						x						
Origin of currency						x						
Trust (basis/types)					x	x						
Origin and type of products traded						x			x			
Symbology (graphic)						x						
Values promoted by the currency and symbols						x						
Predominant ideology												
Lexicon used											x	
Organizational Characteristics												
Origin of experience						x						
Type of institution						x						
Type of governance						x			x		x	
Internal decision making processes						x						
Currency management						x						
Promote sustainable development / Socio-Environmental Accountancy Scheme								x	x			
Contribution to SSE						x			x			
Citizen engagement									x			
Transition and autonomy: encouraging community									x			
Objectives												
Economic							x	x	x			
Social							x	x	x			
Environmental		x						x	x			

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LETTERS FROM THE FIELD

THE PATACON PLAN: A COMPLEMENTARY CURRENCY FOR BUENOS AIRES ECONOMIC DEVELOPMENT

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ABSTRACT

The province of Buenos Aires (PBA) has a population of more than 18 million inhabitants, around 40 percent of the national total. However, it receives only about 20 percent of the tax revenue shared with the provinces -which, in addition, as we said, will be reduced as a result of the cut in federal public spending-. The phrase "I'm going to leave them without money" recently made known by President Milei regarding the provincial governors, illustrates the seriousness of the situation, which is expected to be especially acute in the province of Buenos Aires.

An alternative to avoid the social outbreak to which the national government's economic policy leads the Argentinian economy is to implement a complementary currency. The Patacon Plan presented here would provide financial independence to the PBA -since it does not imply any need for financing in a currency of which it is a user.-. The Patacon would operate continuously in a small, open economy, with multiple other currencies trading around it simultaneously. More importantly, it would allow the PBA to act counter-cyclically, increasing the deficit when employment declines, and vice versa; that is, functioning as an automatic stabilizer, maintaining full employment and a currency of stable value.

KEYWORDS

Complementary Currency, Patacon-Subnational Government, Buenos Aires, Argentina

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1. INTRODUCTION

An economy with unemployment is not subject to a trade-off between alternative uses of resources. Contrary to textbooks that define economics as the discipline that studies the allocation of scarce resources, when there are unemployed (unused) resources, it is possible to produce more without this implying giving up anything in exchange. In short, unemployment is a real cost, evidence of wasted resources, neither more nor less than an economic inefficiency. The opportunity cost of using unemployed resources is zero (Mosler, 1993).

However, mainstream economic theory considers that the money required to take advantage of these unemployed resources is scarce (Mosler, 1993 & 2010). Along these lines, in Argentina, the new president recently said, referring to public finances, that “there is no money” and that the goal of zero deficit is “not negotiable”.

Due to a tax structure that strongly depends on the economic cycle, the proposed reduction in public spending by the new Argentinian government will most likely not eliminate the deficit, but instead will increase unemployment.

Furthermore, unlike the national government -which is the issuer of pesos-, subnational governments are users of pesos and, as such, do have financial restrictions (Mosler & Forstater, 2005). In this case, the usual analogy with a household is applicable: they must collect or borrow pesos before they can spend them. Therefore, they are incapable of acting counter cyclically to support demand.

The province of Buenos Aires (PBA) has a population of more than 18 million inhabitants, around 40 percent of the national total. However, it receives only about 20 percent of the tax revenue shared with the provinces -which, in addition, as we said, will be reduced as a result of the cut in federal public spending-. The phrase "I'm going to leave them without money"1 recently made known by President Milei regarding the provincial governors, illustrates the seriousness of the situation, which is expected to be especially acute in the province of Buenos Aires.

An alternative to avoid the social outbreak to which the national government's economic policy is very likely to lead us to is to implement a complementary currency, sustaining full employment and price stability (Mosler, 1997a). Buenos Aires already issued a tax-backed bond called Patacon in 2001 as an emergency response to the financial limits imposed by the currency board, a fixed exchange rate regime adopted by Argentina between 1991 and 20022. However, unlike our proposal, this first Patacon was valued at par with the peso in payment of taxes. Moreover, there was no price-rule for public spending (i.e., no price constrained spending to anchor the value of the currency)3.

2. PROGRAM OUTLINE

The program is based on previous proposals by Warren Mosler (Mosler, 1997, 2001a, 2001b, 2004, 2011) and myself (Mario, 2014).

i) The government of the province of Buenos Aires (hereinafter, the PBA) will impose a tax liability for all residence owners to provide four hours of basic labor per week, payable only in a newly created alternative currency called Patacon (in plural Patacones) -the suggested weekly obligation represents about 10 percent of a typical work week-4

ii) The PBA will fund corresponding jobs in the area of public services to anyone willing and able to work5

iii) The PBA will issue Patacones in exchange for labor time6

iv) Residence owners will be in compliance with the tax liability by submitting Patacones to the PBA

The direct effect of the tax obligation is the creation of an immediate need for Patacones by residence owners (Mosler & Forstater, 1999; Mosler, 2021). This incents them to either apply for a job with the PBA to directly earn the needed Patacones; or offer goods and services to others in exchange for the needed Patacones.

Approved employers (provincial and/or municipal government offices, universities, schools and, in general, non-profit organizations) would be provided with Patacones to hire workers, as long as they meet basic health, safety and responsibility standards7.

3. IMPLICATIONS

-Spending comes first

When the PBA spends pesos, it is severely limited, as it must first either collect them via taxes or borrow them. This can be both politically and economically difficult. With the Patacon system, however, 'government' spends Patacon first, and then collects it.

The Patacon is a (simple) case of a public monopoly: the PBA can't collect any Patacones in proceeds until AFTER it spends them for basic labor hours worked, as no one has any to begin with (Bell, 2000). Additionally, it cannot collect more than it has paid out. In fact, as the PBA's Patacon fiscal deficit is exactly equal to the Patacones saved by the public, a 'balanced budget,' with Patacon revenues equal to its spending, is the theoretical and practical limit. Almost certainly, however, the PBA will run a deficit in the first period, as some Patacones are lost or hoarded for future use. Any surplus in later periods will be limited by the quantity of Patacones issued in previous periods (Mosler, 1993; Mosler & Forstater, 1999 & 2005; Mosler, 2021).

-No financial constraints

Unlike peso spending, PBA spending of Patacon is not constrained by revenue. The PBA's spending on basic labor is in no way dependent on its receipts. As homeowners pay their Patacon-tax, the PBA may either stockpile the Patacones for future use or simply destroy them and issue new ones in future payment. It is limited only by the number of workers desiring to hold program jobs. Spending is 'market determined' in that workers obtain the number of Patacones corresponding to the hours they are willing to work. The government can expect to spend AT LEAST as many Patacones as the private sector needs to pay its taxes. The government will likely be able to spend more Patacones, at the prices it wishes to pay, than exactly the amount needed for tax payments, as any Patacones desired to be held by the public as, say, pocket cash must be left over after taxes are paid (in the normal course of events the PBA will necessarily spend more Patacones than it collects, as workers can earn as many Patacones from the PBA as they are willing to work for) (Mosler, 1993 & 1997; Mosler & Forstater, 2005).

Patacon revenues maintain the incentive for work in the program; they do not fund public sector operations. Similarly, the role of the Patacones is to induce employment in the public sector. In other words, the PBA does not impose Patacon requirements in order to ensure that Patacones flow into its coffers, but rather to ensure that labor flows into the public sector. That is, in contrast to the conventional view peddled by politicians, the PBA does not tax to collect Patacones so it can spend them. It taxes so that the private sector will need Patacones, and therefore be willing sellers of real goods and services in exchange for needed Patacones (Mosler, 2021).

-Automatic full employment: unemployment is eliminated

In order to effectively anchor the new currency unit, I further propose that the PBA first set a wage that it will pay to anyone willing to work in the program. The effect of this government commitment would be essentially to eliminate involuntary unemployment and establish a minimum wage without any further legislation or intrusion into the private sector. This also effectively sets a value for the Patacon in terms of labor time. The market can be left to base all other pricing decisions when purchasing or selling other goods and services on the alternative universally available means of obtaining the Patacon -selling labor time- (Mitchell, 1998; Mosler, 1997; Mosler & Silipo, 2017; Wray, 1998).

There will be homeowners unwilling to work in the program in exchange for Patacones. Perhaps they will prefer to obtain the Patacones by buying them from those people who have already sold their time. Private transactions denominated in Patacones will thus develop. The unemployed will quickly realize that they can buy food (or other goods and services) in the private market in exchange for Patacones and so will show up at PBA offices to work: residents will

desire to be employed in exchange for Patacones because they either have a requirement to submit them, or because they will see that real goods and services being offered for sale in exchange for Patacones by others who need them8.

In other words, anyone willing and able to work for Patacones will be given employment by the PBA. Only if the PBA limited its total Patacon spending to anything less than what the public wanted to earn to be able to both pay the required tax of 4 Patacones per week and save Patacones as they may desire would workers be unable to find employment. The result would be unemployment.

-No government debt and no payment of interest

What about interest rates? With this system, the PBA doesn't have to pay interest, even when it spends more than it taxes. Notice that the PBA does not have to borrow in order to spend more than it taxes, as it simply issues currency, or credits someone's bank account, when that person wishes to sell something in exchange for Patacones (Fullwiler, 2010; Mosler & Forstater, 2005).

I have failed to identify any public purposes that may be served by having the PBA pay interest on Patacon savings, so a zero interest rate policy is recommended.

If the PBA should desire higher interest rates for any reason, it always has the option of offering to pay a desired base rate of interest on excess bank deposits held at the central bank.

It should be noted that, for example, if the PBA offered bonds that pay a rate of 100 per cent per year -as the national government currently does-, the public would have an alternative source of income (interest income) to providing hours of work to the PBA, which could reduce the labor offered by the public destined to obtain Patacones to pay taxes (Mosler, 2021). Those with savings would get free Patacones, potentially devaluing the Patacon if no one anymore needed to work in the program to pay taxes.

-The (absolute) value of a Patacon and relative prices

Since residences need Patacones to fulfill the obligation, the PBA can dictate the terms in which it exchanges its currency (exogenous pricing) (Mosler & Forstater, 1999; Armstrong & Mosler, 2020). In this case, the absolute value of the Patacon is set equal to one hour of basic labor.

The relative -or market- value of the Patacon, that is, what agents would pay for the Patacon instead of selling their time to the PBA, is necessarily a function of the prices paid by the PBA when it spends (Mosler, 2021; Tcherneva, 2002). For example, if the PBA starts paying 2 Patacones/hour, making it easier to obtain a Patacon, the absolute value of the Patacon would fall to ½ hour of basic labor and, if relative prices do not change, the Patacon would be exchanged for half of pesos.

Since agents can always choose to work in exchange for Patacones, there is pressure for the exchange rate (Patacon/Peso) to return to the wage parity: the ratio between wages in Patacones and wages in pesos.

Each agent will be willing to exchange Patacones for pesos at the rate at which they are indifferent between working for Patacones or pesos. If the wage in pesos is less (or if it is zero, in the case of the unemployed) than the amount of pesos that must be given to obtain a Patacon (the exchange rate of pesos per Patacon), it is preferable to sell the time to the PBA. On the contrary, if the wage in pesos is greater than the exchange rate of pesos for Patacones, it is preferable to buy Patacones to pay the tax. Of course, this depends on the wage of each agent in pesos and Patacones, but, at least on average, the exchange rate should return to wage parity -otherwise, there will be “arbitrage gains”-9.

The value of the Patacon is therefore independent of the quantity issued or received by the PBA, providing that the PBA only issues Patacones for basic labor and does not refuse to hire anyone willing and able to work. Nor does it depend on whether the PBA runs a deficit, a balanced budget, or a surplus in a particular period. As long as workers must work for an hour to obtain a receipt for one hour's work, the value will remain equal to one hour of labor. It will be internally stable without foreign exchange reserves and independent of international trade balances.

The key is that there is price stability as long as the PBA doesn't spend so much at market prices that no workers apply for the basic job. In other words, there is price stability as long as the PBA doesn't spend more Patacones than the taxpayers determine they want. And, because the PBA always requires that at the margin labor is necessary to get needed Patacones, the value of the Patacon is equal to the value of the labor time of the person who has to work at the basic program job to get the Patacones.

Ultimately the value of the Patacon would be established by what it can buy -basic labor-. And improving the value of those workers through education, health care, etc. would serve to improve the value of the Patacon in the long run.

-Evaluating performance

The requirement imposed should be determined by the needs of the government for goods and services balanced against the costs of removing the labor from the private sector. Program success would be assessed by careful evaluation of the actual accomplishments of the goods and services provided, and by the impact that program employment had on the workers themselves. The success of the program must be evaluated by the additional goods and services provided (Mosler, 1993 & 2010). In particular, 4.9 million Buenos Aires households (EPH, 1st semester of 2023) working 4 hours a week, will provide 19.6 million hours of weekly labor to serve the community (themselves included)

If goods and services needs are met, yet new workers continue to show up for work at PBA offices, the PBA may reduce the requirement. Conversely, if not enough labor is induced into the public sector, the requirement can be increased.

4. EXPANDING THE PBA´S USE PATACONES

This analysis has been limited to basic labor. However, it is likely that shortly after the program is initiated, many other goods and services will be offered by businesses and individuals in exchange for Patacones. This will be a function of the number of Patacones residence owners, at some rate of exchange, would rather trade something for than do the actual program´s tasks themselves. These people may be fully employed at other occupations, or simply prefer other types of work than the public service positions available or have the independent means to purchase their Patacon requirement.

At this point the PBA will have the option of purchasing these other goods and services with Patacones. As before, spending will be operationally limited only by what is offered in exchange Patacones. However, this additional Patacon spending does reduce the need of residence owners to obtain Patacones through selling basic labor. This in turn will reduce the amount of basic labor they offer to the PBA. Therefore, Patacon spending by the PBA beyond that of basic labor should be limited so as to make sure a credible number of workers must still seek program employment.

It should also be anticipated that another class of government worker will be desirable. These will be individuals who have special skills (e.g., doctors, lawyers, accountants, engineers, teachers, etc.) needed by the PBA, but who earn more than the value of one Patacon per hour in the private sector. To attract these individuals to the public sector may require that they be paid "market wages" which exceed one Patacon per hour. For the same reason as in the previous example, government spending of Pataconees on these individuals will reduce the total number of hours worked by those paid the stated rate of one Patacon per hour.

In summary, the PBA begins with the hiring of workers who will receive one Patacon per hour. As the program develops, the PBA will spend Patacones on other things, with a careful eye on the degree that such other spending is reducing the volume (in hours worked) of basic labor. If the volume of program work is considered too high, other Patacon spending can be increased and/or the residency requirement of 4 Patacones per week reduced. Conversely, if the volume of basic labor time is considered too low, other Patacon spending can be reduced or the residency requirement can be increased. At all times, however, the government is not restricted from offering employment paid in Patacon to anyone willing and able to work.

Here I will introduce a bit of arithmetic to illustrate how the PBA will get the real goods and services it needs to properly run the province. Let's assume, as we did above, that tax collection totals 23.6 million Patacones per week. The PBA can expect to be able to spend at least that amount since property owners have no other way to obtain Patacones. If the PBA offers one Patacon per hour as the minimum wage, and spends nothing else, it can be reasonably sure that at least 590,000 workers would apply for the program -assuming they work 40 hours per week-. Well, perhaps the PBA does not want 590 thousand basic workers but it does want other things that will be offered for sale by the public (as an alternative way to obtain Patacones to pay taxes). Let's say the PBA spends 23 million Patacones per week at market prices, buying the other things it really needs, including specialized labor and materials for the legal system, defense, education, health care and other public services10. The public now needs only 600 thousand more Patacones per week to pay their taxes, so a minimum of only 15 thousand basic workers -assuming they work 40 hours per week- can be relied upon to apply for the program. Of course, there will be a desire in the public for cash in circulation and other activities that cause a desire for net savings. This is generally a substantial amount. Suppose it involves a desire to obtain another million Patacones per week. This will be evidenced by another 25 thousand basic workers applying to the program, for a total of 40 thousand.

5. AUTOMATIC STABILIZATION

With large numbers of workers being paid in Patacones, private markets will develop. Patacones in private hands will be used by individuals to hire workers previously employed in the program. A drop in program´s work hours means that the PBA will then be issuing fewer Patacones. This reduces the excess Patacones in the hands of the private sector (to the point where the ratio of private sector to public sector workers stabilizes), thereby limiting private sector employment. There will always be full employment, but the mix between private sector and public sector employment will vary, as there will always be workers going from private to public employment, and vice versa. The plan provides a continuous automatic stabilizer to ensure equilibrium of demand and supply of Patacones (Mosler, 1997; Mosler & Silipo, 2017).

The system works as a stabilizing force: a deviation from equilibrium sets in motion forces to restore the equilibrium, not to exacerbate it. For example, a drop in private-sector output that reduces private sector employment automatically increases public-sector employment. That puts more Patacones in the hands of workers to spend in the private sector, which in turn raises private-sector employment. Everyone willing and able to work is working, either in the private sector or the public sector. There are never any unemployed workers.

6. ENFORCEMENT

The driving force behind the Patacon Plan is the requirement that residence owners submit Patacones to the PBA (if the PBA ends the Patacon tax liability, the Patacon will have no further value). This requirement is only as good as the enforcement process. If the Patacones are not paid, the PBA must have the right to sell the property and thereby attempt to collect the delinquent payments. The PBA need not even know who the owner is.

This may seem harsh, but in practice the requirement is rather modest. Remember, a job is always available, and any property owner needs only work four hours per week for the PBA to receive the needed Patacones. Anyone unwilling to do at least that much for his community should receive little sympathy.

It is also expected that the government would establish an exception policy for those unable to work. For example, there will be exemptions for people who are disabled, aged, or suffering some other hardship.

7. CONCLUSION

The (coercive11) imposition of a tax liability payable only in Patacones would generate a demand for the provincial currency and, thus, would allow private resources (labor and, in general, goods and services) to be mobilized to the public sector (provision of public goods and services).

As we saw, the program can be expanded, with the PBA purchasing other goods and services in addition to basic labor. For example, considering the limits analyzed, a social safety net could be created, with an income in Patacones for children and adolescents, and the elderly.

The Patacon Plan presented here would provide financial independence to the PBA -since it does not imply any need for financing in a currency of which it is a user, such as pesos, dollars, etc.-. The Patacon would operate continuously in a small, open economy, with multiple other currencies trading around it simultaneously -with no need for capital controls or trade restrictions-. More importantly, it would allow the PBA to act counter-cyclically, increasing the deficit when employment declines, and vice versa; that is, functioning as an automatic stabilizer, maintaining full employment and a currency of stable value.

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1 See, for example, https://www.clarin.com/politica/javier-milei-redobla-gobernadores-ley-omnibus-voy-dejar-peso_0_PWCVMZ9Bfj.html. When asked explicitly, governor Kicillof did not rule out the possibility of issuing a complementary currency, although it does not seem his first choice, at least for now (see, for example, https://www.clarin.com/politica/axel-kicillof-descarto-provincia-buenos-aires-cree-moneda-propia_0_gwkNl5JCIQ.html).

2 There is a vast literature on complementary currencies in Argentina. See, for example, Orzi (2019) and/or Gómez (2019), and the references therein contained. In fact, as can be seen in this literature, many (or even most) experiences do not involve a political authority (i.e., the state). This, however, does not refute the MMT (Modern Money Theory) claim that "taxes drive money": tax liabilities are a sufficient condition to drive a currency (not a necessary one). In a very interesting article, Théret (2018) goes through the history of provincial complementary currencies in Argentina. Surprisingly, there have been provincial monies from 1867 all the way to 2003, with the exception of the fifty-year period between 1934 and 1983. He goes on to identify four "waves" of provincial complementary currencies and hypothesize about the reasons for such a long lasting regularity. The Argentine experience is meant to serve as a lesson for improving the Euro system. However, as the author makes clear, every complementary currency was denominated in the national unit of account. This is, undoubtedly, the main difference with the proposal presented here.

3 The province of La Rioja has recently adopted a bond, similar to the 2001 Buenos Aires Patacon. In fact, Buenos Aires is the only province that can legally issue currency as per the San José de Flores Pact of 1859, allowed as part of the so-called pre-existing pacts (considering the Banco Provincia, the province´s public bank and the oldest in the country, issued currency between 1822 and 1888).

4 Sales taxes and other transactions taxes tend to discourage people from exchanging goods and services with each other, and require enormous record keeping and enforcement costs; this is a viable plan in which the new currency is supported without any additional income tax, sales tax, or any other transaction tax that could diminish the economic welfare of the community. Instead, I propose a property tax. Of course, since land is immobile, in one way or another everyone would pay a property tax, either directly by owners of landed property or in the form of higher rents (the first

condition applies to all homeowners including those of rental units). For simplicity, in this case, it can be thought of as a reform to the current real estate tax, which would now be payable in Patacones.

5 Note the phrase “willing and able to work”. This means there will be exceptions made for those that cannot or should not work. The requirement above caused residents to seek employment that pays them the Patacones needed to satisfy their requirement. And by offering employment to anyone seeking it, those who own residences will readily be able to sell their time and earn the Patacones necessary to preserve ownership of their property.

6 Denominations of 1, 5 and 10 hours are suggested. Additionally, Patacones could be subdivided, perhaps into 6-minute coins. Although a minimum of cash is probably necessary, the Patacon could be eminently digital (i.e., purely electronic). For example, the Cuenta DNI could add a balance in Patacones.

7 The legal framework could be that of current educational internships, without the duration limits (https://www.argentina.gob.ar/justicia/derechofacil/leysimple/pasantias-educativas). The objective is not to replace activities currently carried out by the government, but, as in any buffer stock policy, to maintain the quality of the stored item.

8 Even when an agent is not subject to the tax liability, he could accept/demand Patacones because he knows that someone else needs them. In general, the public deficit is limited by the desire of the rest of the economy to save. This includes, of course, the external sector of the PBA: the province's imports will be limited by “foreigners” savings desires in Patacones plus exports.

9 For this arbitrage process to operate there must be some degree of substitutability between those who work in exchange for Patacones in the program and those who work in exchange for pesos; the greater this degree of substitutability, the greater the capacity of the minimum wage in Patacones to function as an anchor for all wages and, therefore, for the prices of the economy.

10 Of course, this is in addition to the spending in pesos, with the funds it will continue to receive as co-participation.

11 Mainstream economists accept the classical dichotomy and contend that money is merely a numeraire. Money is a “veil” that improves transaction efficiency while leaving quantities produced and relative prices unchanged -the so-called neutrality of money- (Armstrong, 2015). However, neutrality is obviated by coercive taxation.

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IDEAS FOR DEBATE

ELEMENTARY MONETARY CONCEPTS AND IDEAS PART 3: SPEAKING MONEY IS ALLOCATING RESOURCES

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KEYWORDS

Monetary Theory, Functions of Money, Allocation, Finance, Budgeting

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In this third part on fundamental monetary concepts and ideas, I want to talk about the more relevant real functions of money. One of the most important functions is the allocation and planning function. You never heard of it? Of course not, but you did use it extensively for sure, because everybody works with this function almost every day when he or she deals with financial budgets, whether privately: how much money is available for household purchases, how much a visit to a restaurant may cost, etc. or in business, when we allocate resources for projects or entire companies with budgeting. Strangely enough, however, this is not considered a monetary function in the literature. Classical economics generally avoids linking the allocation and distribution of money and wealth to money itself. This would destroy the simple demand and supply graphs and would give rise to the suspicion that wealth and poverty might not be the result of personal hard work, but of decisions, power and politics. But why is such an important function not mentioned properly until today? It might be rather simple as the early science of money was heading after the natural sciences where the focus is on the observation of matter and material events. So, money was observed primarily as coins changing hands against some goods. From that was the "medium of exchange" idea born. Then one could hoard (gold) coins and therefore "store value". That is easy to grasp and sounds plausible, as long as money is itself a commodity. The third "function" needed a higher level of abstraction but was maybe also born out of physics: In what unit can we measure the other two functions? Oh, money is already the measure, it is somehow measuring itself, then we found maybe a third function: It must be the "standard of value".

Until today these findings prevailed and circle around us like ghosts from the past and nothing and nobody or only a few seem to want to question them (Martignoni, 2023; Scott, 2021). All functions that would have been visible in other forms of money, especially in book-money or mutual credit were not object of the observation and therefore no other functions could be found. As the ledger was classified solely as a technique of how to treat money (still thought as coins, registered in the ledger) and "doing" accounting, it was not questioned and remained covered until today. But today's money is different and as it is for the most part credit money, we should start to look closer to the real situation.

One mayor aspect of credit money is its ability to shift values in time. If I get a credit, I could buy things now and pay later (meaning contribute something of value for others later). Maybe I would then start to save money to be able to repay my dept. Therefore, I would make a budget and would store a part of my income on a special account. I now have three types of money "created": The debt as a liability, the savings as reserved assets, and the rest of the income as liquidity to use[1]. That means I have now three types of money or three different accounts which I must manage. To do this properly, a ledger and later double bookkeeping were invented. From then on also the term "finance" [2] or "financial" was coming into use and was developing into today's sense of "monetary resources; money used or intended for a particular purpose; financing, funding" (Oxford dictionary). So, the allocation of money was shifted to «finance» and therefore obscured and neglected. But as the definition is correct it would mean that financing is a function (or ability) of money.

A financial budget or budgeting may be defined as a way to balance income, expenses and financial goals for a specific length of time. Then money can be used to "budget" specific intentions, and so one major function of money is the budgeting (and thereafter financing). The counterpart to financial budgeting is accounting, which is then the tool for tracking this "divided money" or monetary sums as purposed fractions which signify the allocation of that money. This means money is now labeled and split into different sorts which are targeted for different goals.

This is exhaustively done with most existing money, which therefore all is "special money" (Zelizer, 1989). Especially enterprises and organizations widely use budgeting as a method to allocate resources. Some scholars like J.L. Bower (2017) worked on the path to a better understanding of such resource allocation by budgeting, while he was researching companies, but was not taken seriously by the management theorists[3]. But he also did not connect his investigations to money itself.

But could we really say that budgeting is a function of money? Could budgeting not also be done without money? Of course it could (for example by time), but we must resist the temptation here to define money in terms of its functions, but rather to see that money today very much does perform this function of budgeting and allocating resources, and that it does so as a quasi-monopolistic tool throughout most societies worldwide.

What does this mean? Does it help to understand "what money really is" or what is the point of such a shift in perspective?

Firstly, from this point of view, a connection to the credit theory of money is immediately apparent. Furthermore, the connection to organization and development is also immediately established and it is understandable that "financing" is determined by the design of the therefore used money (currency). It also opens up new avenues for monetary theory. The Austrian economist Franz Hörmann, for example, has taken this approach and developed a kind of accounting theory of money and from there proposes options how to enter a "World Without Money" (Hörmann, 2011)[4]. It could even lead us to the idea that money itself is bookkeeping and further to the idea that money in a dynamic way indicates a sharing or distribution ratio within a system. That would lead back to a monetary theory that was already developed in Germany more than 100 years ago based on a first approach of Georg Friedrich Knapp (1905), by his successors Friedrich Bendixen (1912), Hans Owesny (1924), Karl Elster (1920) and others[5]. Then there would also be a bridge to the mutual credit ideas and the works of Thomas Greco Jr. (2009), E.C. Riegel (2010) and others also reaching back to German economists like Heinrich Rittershausen (1962)[6].

And that brings us not surprisingly to the economy as a whole, in which money is part of a set of rules and a kind of legal system that regulates access to resources.

In most cases of community currencies, access to and distribution of resources is also the issue that people would like to see regulated differently than in the prevailing monetary system. But this would need a proper theoretical background that includes such an option and supports these intentions. The neoclassical canon of market and "neutral money" including its exchange-myth is completely unsuitable for such a task. The continued usage of this "theories" might even be an important reason of failure for so many community or complementary currencies in the last 40 years. The dominant neoclassical theory does not only exclude different currencies. It has rather transmuted into a theology that is centered around the "god of the market", i.e. individual self-interest and enrichment, and excludes everything that does not worship this god alone. An alternative currency therefore cannot be built on this approach but must be based elsewhere.

But I did not come to this realization by chance either. I came across it through observation and participation in many valuable, albeit failed, experiments with new currencies. This supported a learning effect of deconditioning in order to get away from the widespread, far too simple and false ideas about money and the economy.

Important steps in the same direction can also be gained from ethnology and from the real practice of communal economics. Here I also refer to the groundbreaking work of Will Ruddick with commitment pooling (Ruddick, 2023).

So, there are many threads stretched out that lead to new shores. They just need to be taken up more strongly and followed more clearly and energetically in the field of community currencies as well, then the long-hoped-for positive effects of such currencies will finally be realized.

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ENDNOTES

[1]This would be a strong extension of the idea of special monies by Zelizer (1989)

[2]Finance: late Middle English: from Old French, from finer ‘make an end, settle a debt’, from fin ‘end’. The original sense was ‘payment of a debt, compensation, or ransom’; later ‘taxation, revenue’. Current senses date from the 18th century, and reflect sense development in French.

[3]«The problem of resource allocation is central to economics. It is also central to the strategic management of companies. Despite considerable research by management scholars describing the process in firms first carried out in the 1960s and continuing since then, management theory of the process remains wedded to a financial model of capital budgeting that poorly fits the problem facing companies.» (Bower, 2017)

[4]Unfortunately, most of his books have been published only in German.

[5]Many of these old texts are available via https://onlinebooks.library.upenn.edu/ (mostly accessable in US only due to copyright laws).

[6]More information and a very valuable collection of sources and text including translations can be found in the library section of Tom Grecos website https://reinventingmoney.com/library/

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BOOK REVIEW

VALUE BEYOND MONEY. AN EXPLORATION OF THE BRISTOL POUND AND THE BUILDING BLOCKS FOR AN ALTERNATIVE ECONOMIC SYSTEM BY DIANA FINCH

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The Bristol Pound has played a significant role in awareness raising and debates about alternative currency systems and the drive towards local economic practices. The development of a city wide approached was one of several ambitions which underpinned the endeavour. Within her new book exploring the history of the currency and its broader ambitions, Finch has provided an honest account and insight behind the curtain of public perception to show some of the inner workings of the scheme. For academics, practitioners and the interested general public, the book offers a lot of provoking insights and honest commentary about the challenges faced in developing the Bristol Pound. However, there are some silences within the text, which for the academic audience, will leave some questions unanswered.

The easy read, conversational tone of the text is a refreshing form of expression which engages the reader quickly and continuously throughout the book. This approach resonates well with the more personal touches within the text about key players and relationships involved in the Bristol Pound initiative. Interestingly, and perhaps with the audience in mind, the first part of the book orientates the reader well to the idea of alternative currency and quickly links this into the account of the Bristol Pound. Resultingly we are exposed to the practice insights first. There are some interesting lessons for the wider community currency community in these pages. Such as

- The engagement of like-minded members of the community rather than mass participation.
- Significant amounts of enthusiasm, good will as well as political support locally can drive a currency system forward in the early stages of development. But this can place a great demand for time and energy on a small number of people.
- Wider social/economic developments in the "free market" may outpace community currency innovation – the rapid development of electronic payments as an example, especially post-covid.

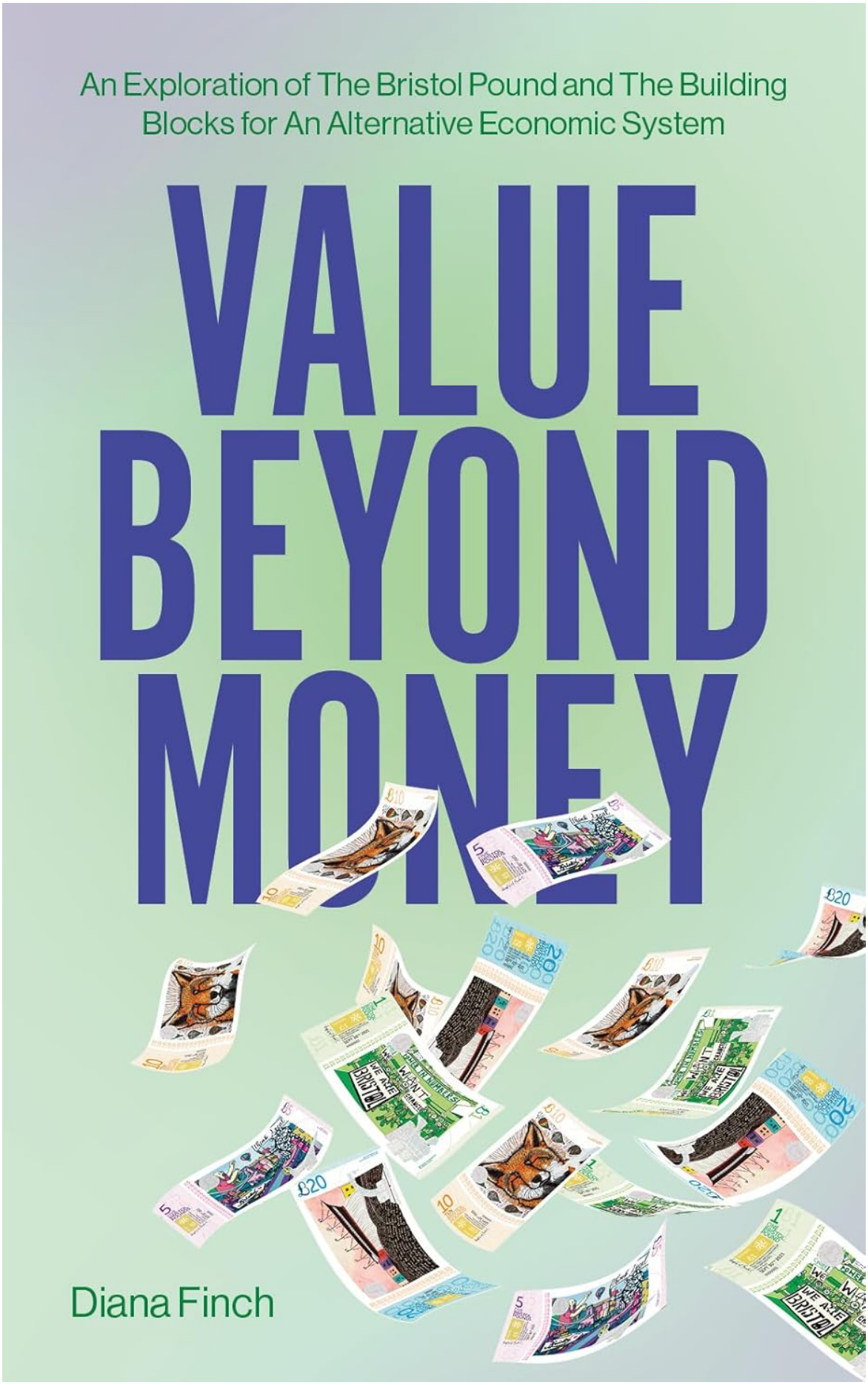
Although now concluded, the Bristol Pound therefore offers several insights which will resonate with those who have experimented with and/or researched alternative currency systems. Perhaps the ongoing challenge for the wider currency literature here is how to respond to these lessons. Developing a currency system which challenges the broader economic system remains elusive, and some reflection on what could be taken from these insights into future experimentation would have been a great addition from an author who has been at the heart of practice and a significant learning journey.

However, it is the final chapters and discussion that some of this articulation of what next, comes to the forefront. Rather than start with the broader economic debates and promotion of values for an "alternative" economy, Finch has drawn these out towards the end of the text.

Finch introduces a few new "capitals" which can inform our thinking about alternative economic systems: environmental, social and manufactured. Whilst these are useful ways of encouraging a rethinking of our economic relationships, the second of these, social capitals, is an already theoretically loaded term in social sciences and would need some distinction that is not offered in this text. Partly because in Finch's use, social capital includes what social scientists would refer to as social capital, human capital as well as a broader notion of health/wellbeing. This is not to diminish the contribution of the types of capital Finch suggests as part of our economic challenge. Rather that for the academic audience some re-thinking of the labels may be necessary.

Perhaps it is within these final pages that the introduction of a "thuropia" is useful for community currency researchers. This refers to the process of trying to create a better system. Through the innovation, experimentation and action research of those involved in a variety of community currency systems, steps can be taken to try new approaches and ideas. Develop new insights and learning which can contribute to the wider whole.

Finch's text offers one such contribution. Reflections on the Bristol Pound initiative and draw outs lessons for the wider community currency community. But from these reflections there seems to remain unanswered challenge which Finch highlights in her comments about the early days of the Bristol Pound: How do we stop these alternative currency systems from simply being a niche of like-minded people into a broader economic resource for the majority? Some of the discussions and suggestions towards the end of the book, a range of innovative token ideas, would potentially face the same challenge.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