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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

## 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<sup>1</sup>, 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.

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<sup>1</sup> 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 CCs 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 Orzzi, 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	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	
<b>Organizational Characteristics</b>												
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			
<b>Objectives</b>												
Economic							x	x	x			
Social							x	x	x			
Environmental		x						x	x			