Artículos / Articles

Diverse money, diverse freedoms: monetary infrastructures for solidarity and environmental sustainability

Dinero diverso, libertades diversas: infraestructuras monetarias para la solidaridad y la sostenibilidad medioambiental

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ABSTRACT

This article explores the complex relationship between money and freedom, focusing on how different types of money can promote various forms of freedom while addressing the tensions between individual autonomy and collective responsibilities. It critically examines the concept of modern money as a neutral medium, typically associated with negative freedom, in the context of global challenges. The article attributes the erosion of modern frameworks that enhance negative freedom through money to increasing interdependence and externalities and argues for the development of new types of money that can internalize global interdependencies, thereby effectively addressing contemporary challenges. The article highlights innovative monetary systems, such as Sardex and Twin Money, that support positive freedoms and promote social inclusion, environmental sustainability, and collective well-being.

Keywords: money, complementary currency, climate change, sustainability, solidarity, freedom.

RESUMEN

Este artículo explora la compleja relación entre dinero y libertad, centrándose en cómo diferentes tipos de dinero pueden promover diversas formas de libertad al tiempo que aborda las tensiones entre la autonomía individual y las responsabilidades colectivas. Examina el concepto de dinero moderno como medio neutral, típicamente asociado con la libertad negativa, en el contexto de los desafíos globales. El artículo atribuye la erosión de los marcos modernos que mejoran la libertad negativa a través del dinero al aumento de la interdependencia y las externalidades. Aboga por el desarrollo de nuevos tipos de dinero que puedan internalizar las interdependencias globales, abordando así de manera efectiva los desafíos contemporáneos. El artículo analiza sistemas monetarios innovadores como Sardex y Twin Money, que apoyan las libertades positivas y promueven la inclusión social, la sostenibilidad ambiental y el bienestar colectivo.

Palabras clave: dinero, moneda complementaria, cambio climático, sostenibilidad, solidaridad, libertad.

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INTRODUCTION

In an era characterized by unprecedented global interconnectedness and systemic challenges, the dynamics of money and its role in shaping social, economic, and political landscapes have come under intense scrutiny (Beckert, 2016; Dodd, 2015; Ingham, 2020). Traditional conceptions of money as a neutral medium of exchange whereby economic transactions are facilitated within predefined frameworks are being reevaluated considering emerging global interdependencies and societal transformations. The intricate relationship between money and freedom has long been a subject of philosophical inquiry, yet its exploration within the context of contemporary global challenges remains relatively underexplored. While classical theorists, such as Adam Smith and Karl Marx, have contemplated the implications of monetary systems on individual autonomy (Smith, 1776; Marx, 1904), the complexities of modern financial landscapes and their intersection with notions of freedom are often overlooked. For example, as global interdependences deepen, new questions arise about how monetary structures influence personal liberties and societal freedoms. Additionally, the advent of digital currencies and the globalization of financial markets present novel opportunities and challenges for understanding the dynamics of money and its implications for personal liberty.[1]

Consider, for instance, the rise of such cryptocurrencies as Bitcoin, which promise decentralized, borderless transactions outside the purview of traditional financial institutions (Nakamoto, 2008). While proponents herald these innovations as vehicles for individual freedom and financial sovereignty, skeptics caution against their potential to exacerbate inequalities and undermine regulatory frameworks (Chohan, 2021). Moreover, the relationship between money and freedom extends beyond technological innovations to encompass broader socio-economic and political dynamics. Amid widening wealth disparities and heightened social unrest, the distribution of economic resources and access to financial opportunities directly influence individuals' ability to exercise agency and pursue their aspirations (Piketty, 2014; Sen, 2017). As such, understanding how the functioning of money shapes and constrains notions of freedom is essential for addressing systemic inequalities and advancing social justice in an increasingly interconnected world.

Furthermore, the urgency of such issues as climate change is accentuating the need to reassess the relationship between money and freedom in the face of contemporary global challenges. Climate change, as one of the most pressing issues of our time, carries profound economic and social implications (Taconet et al., 2020) that intersect with monetary systems. The increasing frequency of extreme weather events, shifts in agricultural patterns, and rising sea levels not only threaten ecosystems, but also disrupt economic activities and exacerbate social inequalities (Intergovernmental Panel on Climate Change [IPCC], 2022). As societies grapple with the consequences of climate change, questions arise about how monetary policies and financial systems can either mitigate or exacerbate these challenges. Thus, understanding the interplay between money functioning, freedom, and climate change would be essential for devising effective strategies to address the multifaceted crises humanity now faces.

Money may play a role in mitigating climate change—often through specific monetary forms or mechanisms—but it has also contributed significantly to its exacerbation, particularly by enabling the fossil fuel-based economy. The reliance on fossil fuels for energy production, transportation, and industrial processes has been a cornerstone of modern economic growth and development (IPCC, 2022). However, this reliance has also led to the accumulation of greenhouse gases (GHGs), resulting in global warming

1 To guide the analysis, it is important to distinguish between monetary, financial, and economic systems. Monetary systems concern the institutions and mechanisms that define what counts as money and how it circulates. Financial systems include banks, markets, and instruments that facilitate lending, investment, and capital flows. Economic systems encompass the broader organization of production, distribution, and consumption in society. While deeply interrelated, these systems serve different functions and analytical categories—this article focuses primarily on monetary infrastructures and their relation to freedom.

and climate disruption. The extraction, production, and consumption of fossil fuels are deeply embedded in the economic structures and monetary systems of contemporary societies, reflecting broader patterns of production and consumption driven by profit and market dynamics.

Therefore, comprehending the role of money functioning in exacerbating global challenges, such as climate change, entails examining not only its potential for mitigating environmental harm but also its involvement in perpetuating unsustainable economic practices across various domains. The monetary policies, financial incentives, and investment decisions that prioritize short-term gains over long-term sustainability have accelerated environmental degradation, exacerbated social inequalities, and hindered progress toward equitable development. Consequently, reassessing the relationship between money functioning, economic systems, and societal well-being would be imperative for transitioning toward more inclusive, resilient, and sustainable modes of economic organization (Bazzani, 2022a, 2022b). This necessitates adopting holistic approaches that recognize the interconnectedness between money functioning, economic activities, social dynamics, and environmental outcomes in addressing the complex issues we are currently facing.

This article delves into the intricate relationship between money functioning and negative freedom, particularly within the context of contemporary global challenges. In so doing, it offers an integrated perspective that considers the interconnections between money functioning, individual freedom, and social solidarity. Traditional conceptions of money as a neutral medium of exchange have been reassessed in response to such emerging global challenges as climate change, economic inequalities, and political instability. Complementary currencies, which operate alongside national ones, are often designed to address these challenges by fostering local economic resilience and social cohesion. These alternative monetary systems often aim to enhance community ties and promote sustainable economic practices (Degens, 2016; Place & Bindewald, 2015; Seyfang & Longhurst, 2013). By focusing on the intricate dynamics of money functioning, we highlight their influence not only on individual freedom but also on broader societal dynamics, such as social solidarity and economic equity. Through discussing two illustrative examples, Sardex and Twin Money, we shed light on alternative monetary functioning that can incorporate elements of contemporary interdependencies to foster positive freedom.

This article pursues two interrelated objectives. First, it aims to critically reassess how monetary systems structure freedom, distinguishing between negative (freedom from interference) and positive freedom (freedom to act meaningfully and collectively), especially in the face of pressing global challenges. Second, it explores how specific monetary infrastructures—namely Sardex and Twin Money—serve as conceptual examples of institutional innovations that can embed social and ecological values into monetary design. This raises the following guiding research questions: What kind of freedoms do contemporary monetary infrastructures enable or constrain? How can alternative monetary designs promote solidarity and sustainability by supporting positive freedom?

The article is structured as follows. After introducing classical and contemporary debates on money and freedom, it analyses the evolution of neutral money and its implications within neoliberal and modern state arenas. It then discusses how global interdependencies challenge traditional monetary functioning and introduces the concept of monetary infrastructures that internalize externalities. Through the examples of Sardex and Twin Money, the article identifies features of monetary design that enable alternative forms of freedom aligned with collective well-being and environmental sustainability.

THE FREEDOMS OF MODERN MONEY

Freedom stands as one of humanity's most cherished ideals, embodying autonomy, agency, and self-determination. Within political philosophy, freedom has been articulated in two distinct yet complementary forms: negative and positive. Negative freedom, defined notably by Isaiah Berlin (1958) and John Stuart Mill (1859), refers to freedom from external constraints or interference, emphasizing the individual's right to act according to their own will without coercion or limitation by others. This conception highlights the individual's autonomy, particularly in such contexts as economic exchanges, where freedom is understood as the absence of external restrictions. Negative freedom is often associated with liberal political traditions that prioritize individual rights and minimal state intervention, underpinned by the belief that individuals are best positioned to determine and pursue their interests when left free from external compulsion.

Positive freedom, conversely, as elaborated by Jean-Jacques Rousseau (1762), extends beyond mere non-interference, encompassing the capacity to fulfill one's potential, actively participate in collective decision-making, and contribute meaningfully to the common good. Unlike its negative counterpart, positive freedom requires enabling conditions (e.g., resources, social structures, institutional supports) that empower individuals and communities to act in ways aligned with collective goals and individual flourishing. This perspective is rooted in the recognition that individual autonomy and agency are deeply intertwined with social contexts and collective conditions. Positive freedom is central to communitarian and republican traditions, emphasizing the active role of individuals and groups in shaping their shared environments and destinies.

Positive freedom has gained significant attention in contemporary sociological discussions as societies face complex global challenges (Bazzani, 2023a). These challenges highlight the limitations of purely negative conceptions of freedom, demonstrating the need for social and institutional frameworks that enable collective action and mutual support. The distinction and interplay between negative and positive freedom thus provide critical theoretical lenses through which to examine modern economic practices and monetary systems, underscoring how differing conceptions of freedom inform distinct economic philosophies and institutional arrangements. This section explores how modern forms of money are closely linked to negative freedom. These forms of currency not only facilitate economic exchanges, but also contribute to the development of forms of social coordination based on this notion of negative freedom, allowing individuals to act without external interference or coercion.

Money as a neutral veil

In the context of monetary transactions, neutral money functions as a neutral veil facilitating economic exchanges. As a unit of account, it fosters comparability and exchangeability of goods, thereby empowering individuals to make choices based on their own monetary values. This characteristic of neutral money aligns with the principles of negative freedom, granting individuals autonomy to engage in transactions without external constraints. Historically, classical sociologists and economists, including Marx (1904) and Parsons (1950), portrayed money as an indifferent "neutral veil," integral to structural processes yet challenging to precisely define its contribution beyond facilitating transactions.

Marx's analysis of money transcends its conventional economic role, delving into its implications for negative freedom within capitalist systems. For Marx (1904), money embodies broader social relations and power dynamics, serving as a tool for the commodification of labor within capitalist frameworks. Individuals, compelled to sell their labor power for wages, become alienated from their labor and its products, thereby constraining their negative freedom and autonomy. While money initially appears to broaden possibilities by freeing individuals from direct land dependence, it establishes a new form of reliance on employers through the commodification of labor.

Moreover, Marx identified money as a mechanism perpetuating capitalist exploitation, with the capitalist class exploiting labor to amass wealth and maintain control over the means of production. This exploitation, facilitated by money circulation, curtails the negative freedom of the working class, thus driving inequality and oppression. Marx extended his analysis to the role of money in shaping societal structures and power dynamics, with an emphasis on its function in preserving the ruling class's dominance over resources and wealth circulation. This centralized control sustains hierarchical social structures by impeding individuals' negative freedom to pursue their interests.

Marx's conceptualization of money sheds light on its significant implications for negative freedom within contemporary society. While money can (neutrally) facilitate transactions, Marx's analysis reveals how the capitalist class can manipulate it to perpetuate systems of inequality and oppression. His insights underscore the complex interplay between economic systems and negative autonomy, thereby enriching our understanding of the multifaceted nature of money.

Parsons (1950) conceptualized money as a general symbolic medium with a role in the functional differentiation of various social system components. Within this framework, money was depicted as a "neutral" veil, symbolizing goods' values without exerting direct influence on the economy or society. This perspective laid the groundwork for understanding money as a mediator that facilitates social interactions across temporal and spatial distances. Through this conceptualization, Parsons hinted at a realm of individual freedom within economic transactions.

Ingham's (2004) critique challenges the conventional view of money as a neutral medium by asserting its intrinsic value beyond its symbolic function. Rather than considering money solely as a passive symbol, Ingham emphasized its dynamic role as a pivotal social institution that actively shapes and is shaped by broader social relations and power dynamics. This perspective reframes the understanding of money, highlighting its active participation in shaping individual agency and societal structures. By acknowledging money's active role, the focus shifts from mere symbolism to a recognition of its influence on shaping individual freedom and societal dynamics. Ingham's critique underscores the intricate interplay between money and freedom, revealing how monetary systems can both enable and constrain individual autonomy. This recognition of money's active agency in social and economic processes opens avenues for understanding the complexities of financial systems and their implications for individual freedom within society.

Moreover, Habermas, Luhmann, and Giddens expanded upon Parsons' concept by emphasizing money's role in mediating social interactions. They portrayed money as a facilitator of social differentiation and exchange across diverse social contexts (Dodd, 2016). This perspective implies a certain degree of individual autonomy in navigating economic relationships and accessing resources beyond immediate geographical boundaries. However, it also acknowledges the influence of systemic factors, such as economic inequality and power dynamics, which can shape the contours of individual freedom within the economic sphere. In sum, while such classical theorists as Parsons viewed money as a neutral symbol, contemporary perspectives challenge this notion by highlighting its active role in shaping individual agency. Monetary systems can both enable and constrain individual freedom, underscoring the complex interplay between money and autonomy in modern society.

The neutral veil of neoliberalism

The rise of neoliberal policies, as exemplified by the electoral triumphs of Thatcher and Reagan in the UK and the US, heralded a significant reimagining of money and its implications for individual freedom. This ideological shift was echoed by deliberate adjustments in major central banks worldwide, aligning with a market-centric ethos (Connell & Dados, 2014). Neoliberalism presents money as a commodity governed by the laws of supply and demand (Blanchard, 2008), diverging sharply from the Keynesian perspective. Instead, it embraces the portrayal of money as a "neutral veil" with limited long-term economic consequences (Blanchard, 2008). From this viewpoint, economic actors operate independently of systemic influences, suggesting that investments driven by cost reductions are fleeting.

The adoption of neoliberal policies also emphasized money's role as a commodity that meets individual needs through market mechanisms. The alignment of economic theories on money as a commodity whose value is dictated by supply and demand underscores a core tenet of neoliberal economic ideology. This perspective, viewing money exclusively as a politically "unregulatable" commodity, propels the progressive liberalization of financial flows both domestically and internationally (Epstein, 2005; Palley, 2013). Furthermore, it promotes the unrestricted fluctuation of exchange rates, fostering competitive pressures on states to operate more efficiently and productively (Bhattacharya, 1982). This reimagined portrayal of money as a neutral entity, divorced from specific goals and consequences (Bazzani, 2023c), is deeply ingrained in economic thought (Blanchard, 2008). Rooted in neo-classical economics, which separates economic functions from moral considerations, this perspective legitimizes money as an infrastructure governed by its own logic, independent of political struggles. This stance persists even in the context of digital financial innovations, where such instruments as cryptocurrency and algorithmic stablecoins are frequently lauded as neutral or apolitical—despite embedding implicit assumptions about governance, technological control, and profit. Consequently, it legitimizes the liberalization of financial flows and the free fluctuation of exchange rates.

However, this perspective overlooks the broader implications of reducing money to a mere commodity. By emphasizing market mechanisms and competition, it neglects the social, political, and ecological dimensions of individual freedom within the economic sphere. This narrow focus risks perpetuating structural inequalities and exacerbating social disparities, thereby undermining long-term social and environmental sustainability (Bazzani, 2022a), along with individual autonomy. Moreover, by prioritizing short-term economic efficiency over broader societal well-being, individual autonomy and agency become compromised. Neglecting the social and ecological dimensions of economic transactions risks exacerbating environmental degradation and social exclusion. The next section introduces the socio-political prerequisites necessary for the functioning of neutral money within the context of modern nation-states.

MODERN STATE ARENA FOR NEUTRAL MONEY

The arena of modern society has emerged as a critical prerequisite for the development and functioning of neutral money—a concept discussed by both classic thinkers and proponents of neoliberal policies. Classical sociologists, such as Comte and Durkheim, have extensively studied various forms of solidarity within societies, shedding light on the complex interdependencies that connect individuals. In particular, Durkheim's (1933) theory of modern solidarity provides valuable insights into the structural changes in modern societies, such as urbanization, industrialization, and technological progress, which have given rise to a new form of interdependence. For Durkheim, pre-modern solidarity was characterized by mechanical connections among homogeneous groups, rooted in a collective consciousness. However, modern solidarity is organic, relying on specialized contributions in large-scale societies as a consequence of labor division and societal complexity (Durkheim, 1933). While remnants of pre-modern solidarity persist on a smaller scale, modern society has witnessed the emergence of novel forms of solidarity, including state taxation for redistribution and mutual support among minority groups (Honneth, 1991; Putnam, 2007; Taylor, 1989).

The evolution of modern solidarity is intricately linked to state apparatuses, such as bureaucratic, military, and police structures, alongside the centralization of political power and the establishment of central banks. These state mechanisms create an arena for individual participation, ensuring certain degrees of individual freedom while fostering interdependence and solidarity among citizens. This arena accommodates diverse notions of individual participation in the collective, ranging from self-preservation to the delegation of needs satisfaction to state apparatuses (Brunkhorst, 2005).

At the heart of this discourse lies the arena provided by modern states—a vital precursor for the emergence of neutral money backed by various manifestations of solidarity, cultivated by both state apparatuses and market mechanisms. Within this arena, diverse forms of individual participation find common ground, allowing for an environment conducive to the development of both positive and negative freedom. Neutral money embodies a sense of neutrality that transcends individual values and preferences. As a medium of exchange, neutral money is vital to facilitating transactions and interactions. Its neutrality allows for seamless economic exchanges, much like the modern arena accommodates diverse forms of solidarity and conflict within society.

Examining the modern arena as a prerequisite for neutral money reveals the intricate interactions between freedom, solidarity, and the functioning of money. It underscores the indispensable role of state apparatuses in nurturing various forms of interdependence, thereby promoting societal cohesion and supporting the modern arena of individual freedom within economic functionality in tandem. While modern freedoms serve to disrupt the social ties of the premodern era, the new interdependencies and solidarity developed within the modern labor division reconnect what was separated, forging a new dynamic in the socio-economic landscape.

The instantiation of neutral money within the economic framework of the modern arena is intertwined with the notion of competition among individuals and organizations. This competitive environment is ethically and economically validated by the anticipated secondary effects resulting from the efficient operation of financial markets. The envisioned outcomes include the emergence of more productive and profitable investments, which incentivize less competitive entities to innovate and improve, ultimately benefiting both businesses and consumers (Amato & Fantacci, 2014).

However, the transition from theoretical propositions to practical applications of this monetary infrastructure reveals a gap between expected and observable effects. The expansion of competition into broader spheres of social life may exacerbate inequalities and produce social, environmental, and political externalities that challenge the notion of money's neutrality. Short-term negative externalities, such as unemployment and business closures, may emerge, highlighting the complexities inherent in implementing competitive mechanisms within monetary systems (Piketty, 2014).

Furthermore, applying the competition mechanism to the international circulation of money presents challenges in achieving equilibrium effects. Unlike other commodities, outflows of money from issuing countries do not relieve them from debt constraints, potentially exposing economically weaker nations to greater financial fragility. Empirically proving increased productivity due to competitive pressure is challenging, given the unrealistic assumptions required for such a scenario, including equal levels of information and rational behavior across citizens of different states. While neutral money has the potential to foster negative freedom, its practical application raises complex issues surrounding the interplay between competition, autonomy, and societal well-being. This balance is further complicated by the acceleration of global flows.

GLOBAL CHALLENGES AND PLANETARY INTERDEPENDENCES

In recent decades, the acceleration of global flows —ranging from people and goods to money, GHG emissions, and viruses— has ushered in new interdependencies that transcend national boundaries, challenging the traditional constructs of the modern arena. This heightened global mobility of goods and money mirrors an extension of the modern division of labor, albeit on a global scale. Conversely, the emergence of climate change (driven by GHG emissions) represents a distinctive interdependence not witnessed during the modern era. Furthermore, modern migration patterns, influenced by global labor division and associated inequalities, also respond to the impacts of climate change (Kaczan & Orgill-Meyer, 2020; Marotzke et al., 2020).

While these global interdependencies maintain the essence of the modern arena, they exhibit two notable distinctions from their modern counterparts. Firstly, the apparatuses of modern states—historically tasked with promoting solidarity and welfare for all citizens—appear increasingly inadequate for addressing the solidarity required to confront these global challenges. The interdependencies posed by these challenges undermine the capacity of modern state apparatuses to effectively tackle them, potentially fostering competitive or free-rider behaviors among countries (Falkner, 2016). The once-modern arena created by state apparatuses, fostering solidarity even among competing citizens or firms, no longer ensures a collective response. Individuals, firms, or states may opt for a free-rider approach, with no overarching authorities to delegate or enforce the necessary solidarity. The absence of an arena, such as the State, capable of autonomously managing these new interdependencies, leaves individuals or groups without a clear structure to pursue their goals. Human-induced climate change reveals nature's response through global warming, transforming the biosphere into a "critical zone" with intricate interdependencies that lack a superordinated authority (Latour, 2018). Consequently, the pursuit of solidarity becomes a collective responsibility, necessitating coordinated actions across various levels of groups, organizations, states, and supranational entities. The exclusive delegation of this responsibility to the state is no longer feasible, as no single entity possesses the capacity to ensure the required level of solidarity in managing the critical zone.

Secondly, unlike traditional and modern solidarity, which focuses on ensuring the welfare of the immediate community or state (the "us"), addressing global challenges often involves aiding distant entities (the "others"). Efforts to combat global inequalities and climate change frequently benefit people distant in place (Global South), time (future generations), or relation (migrants). For instance, coping with climate change requires solidaristic actions from the current populations of wealthy countries, bearing the costs of reducing GHG emissions in favor of developing countries and future generations. Similarly, strategies addressing global inequalities in the labor division of global value chains or in coping with pandemics involve prioritizing the welfare of others. This altruistic form of solidarity, distinct from its mechanic or organic varieties, highlights a need to redefine the requisite solidarity (Bazzani, 2023b, 2024). Furthermore, the modern proliferation of individual freedoms within contemporary economic frameworks is juxtaposed against a lack of solidarity from both governmental institutions and market mechanisms. This imbalance is exacerbated by the absence of robust supranational regulatory frameworks capable of ensuring equitable market access and functionality for all stakeholders amidst global competition.

Climate change emerges as a formidable disruptor, inflicting substantial economic burdens through extreme weather events, resource scarcity, and disruptions in agricultural productivity (IPCC, 2022). These environmental challenges strain economic resources and necessitate regulatory interventions and technological innovations, potentially challenging the unfettered ethos of economic freedom (Coeckelbergh, 2021). Simultaneously, entrenched poverty perpetuates socio-economic disparities, stifling opportunities for upward mobility and constraining the realization of economic freedom for vast swathes of the global populace. Addressing these challenges demands not only immediate action but also a reevaluation of the underlying principles that govern our economic systems. While modern money functioning, rooted in the concept of negative freedom, has fueled individual liberties, it has often done so at the expense of broader social cohesion and environmental sustainability. The following section explores examples of alternative money systems that prioritize positive freedom and foster inclusive prosperity and ecological resilience.

MONEY FOR INTERNALIZING INTERDEPENDENCIES

In the face of these new interdependencies posed by global challenges, modern money—as the true neutral—is insufficient for coordinating social action. This is because the interdependencies and externalities that modern money used to leave to the nation-state and nature are no longer managed solely by the former, especially in the case of such natural processes as climate change. Without a supranational authority to fulfill this role, the development of other institutions becomes necessary.

From this perspective, contemporary money could potentially internalize these interdependencies. For instance, consider the example of carbon trading as a form of money that seeks to internalize these interdependencies. Carbon trading involves the buying and selling of permits to emit carbon dioxide or other GHGs, with the overall goal of reducing carbon emissions. By assigning a monetary value to carbon emissions and allowing them to be traded, carbon trading incentivizes businesses and industries to reduce their carbon footprint and invest in cleaner technologies (Perdan & Azapagic, 2011). However, while carbon trading is an attempt to internalize the externalities of carbon emissions within the monetary system, it also faces its own set of challenges and criticisms. Critics argue that carbon trading can lead to market manipulation, loopholes, and the shifting of emissions from one location to another rather than achieving meaningful reductions in overall emissions (Sato et al., 2019). Additionally, there are concerns about the fairness and distributional effects of carbon trading (Lejano et al., 2020), as it may disproportionately impact certain communities or regions.

Despite these issues, the concept of using money to internalize interdependencies remains relevant in addressing global challenges. It highlights the potential for monetary systems to evolve beyond their traditional functions of facilitating exchange and storing value to actively incentivizing behaviors that promote environmental sustainability and social equity. As the global community continues to grapple with interconnected issues, such as climate change, the role of money in internalizing interdependencies is likely to become increasingly important in shaping collective responses and fostering global cooperation.

Recent developments in contemporary monetary markets highlight these very dilemmas. Central Bank Digital Currencies (CBDCs) and private stablecoins, for instance, have sparked intense debate over how new forms of digital money might either expand financial inclusion or amplify inequalities. CBDCs represent state-led initiatives that allow central authorities to program specific rules into currency—potentially facilitating tax collection or disincentivizing carbon-intensive purchases—so as to align monetary systems more closely with collective goals (Bank for International Settlements [BIS], 2021). Meanwhile, privately issued stablecoins promise frictionless, global transactions, but often operate outside robust regulatory frameworks, which risks exacerbating existing inequalities and environmental degradation due to volatile speculation or high energy consumption (Chohan, 2021). These new monetary arrangements reflect both the promise and pitfalls of internalizing interdependencies. On one hand, programmability could embed social and ecological values directly into currency usage (positive freedom); on the other, insufficient governance may strengthen purely individualist, profit-driven logics (negative freedom) to the detriment of collective well-being.

Another approach to addressing these new interdependencies and internalizing them within the functioning of money is through the use of complementary currencies. Over the past three decades, local-level monetary innovation and experimentation have led to the development of 4,500 complementary currencies, community credit systems, and alternative financial frameworks (Servet, 2013). These are not designed to replace conventional money; rather, they aim to fulfill needs and objectives that are typically unaddressed by traditional money. This has resulted in a diverse array of currencies, each targeting specific cultural, governmental, economic, social, and environmental goals (Place & Bindewald, 2015). Unlike traditional money, these innovative monetary experiments are purpose-driven, with many explicitly focusing on promoting solidarity and sustainability (see Degens, 2016; Place & Bindewald, 2015; Tichit et al, 2016; Seyfang & Longhurst, 2013). Complementary currencies serve various purposes, such as fostering local economic growth, supporting specific sectors or communities, and addressing economic inequality. Examples of complementary currencies include local exchange trading systems, time-based currencies, community currencies, and digital cryptocurrencies (Place & Bindewald, 2015). These often possess their own units of account, exchange rates, and circulation rules, coexisting with or complementing the official currency. Complementary currencies are often employed as a means to cope with the negative effects of global competition and the adverse impacts it creates in economically weaker contexts (Place & Bindewald, 2015).

Operationalizing positive freedom in monetary design involves embedding social and ecological values into the mechanisms through which currencies circulate and transactions occur. For instance, integrating conditionality and programmability into monetary instruments (e.g., CBDCs) can explicitly direct economic activities toward collective goals, such as reducing carbon emissions or enhancing social equity (BIS, 2021). However, operationalizing these mechanisms also entails navigating significant challenges, the most pressing of which are scalability and governance: programmable money requires sophisticated infrastructure and regulatory oversight, demanding extensive institutional capacity. Moreover, integrating social and environmental values into monetary systems inevitably involves trade-offs between economic efficiency, individual autonomy, and collective well-being. Stakeholders invested in existing monetary arrangements—in particular, financial institutions or powerful market actors benefiting from current structures—may resist reforms that could undermine their established privileges or introduce new regulatory complexities (Larue et al., 2022). Thus, effectively operationalizing positive freedom requires not only technical innovation but also political negotiation, stakeholder alignment, and robust governance frameworks that balance these competing interests.

In the next section, we use two illustrative examples to examine how complementary currencies (Sardex) and innovative proposals (Twin Money) are being implemented to address contemporary challenges and promote more inclusive and sustainable economic systems. We chose these examples as they offer promising avenues for internalizing social values and promoting positive freedom within local and global contexts. Sardex is an apt example of incentivizing cooperative economic exchanges aimed at meeting local development needs within monetary functioning. Meanwhile, Twin Money is a promising concept designed to internalize the value of non-market activities, such as caregiving and community service, within monetary systems. The discussion of Sardex references previously published data regarding the consequences and functioning of several years of currency operations.[2] In contrast, the discussion of Twin Money focuses on the design characteristics of the currency, as conceptualized by Massó (2023), which enable it to internalize certain dimensions of contemporary interdependencies that can promote positive freedom. Both discussions aim to highlight features of monetary functioning that can incorporate elements of contemporary interdependencies to foster positive freedom.

2 The article draws from existing empirical studies (e.g., Bazzani, 2020a, 2020b, 2021; Dini & Kioupkiolis, 2019; Iosifidis et al., 2018) to describe its operation and cooperative dynamics. While the Sardex model is undergoing transformation—including recent expansion to other Italian regions and organizational restructuring—no empirical research has (to date) been published on these latest developments. Future research is needed to assess the implications of Sardex's ongoing evolution for monetary governance and local development.

Sardex

Numerous scholars have highlighted the potential advantages of complementary currency schemes for enhancing social cohesion (Guéorguieva-Bringuier & Ottaviani, 2018; Oliver Sanz, 2016; Servet et al., 1999). In terms of growth capacity and impact on cooperation, Sardex can be considered one of the most successful cases (Bazzani, 2020a, 2021; Dini & Kioupkiolis, 2019; Iosifidis et al., 2018; Motta et al., 2017). Sardex, established in Sardinia in 2009, is managed by Sardex Ltd. Founded by a group of Sardinian friends, the company has attracted new investment over the years. Sardex Ltd. functions as a clearing house, tracking exchanges between members through an online platform that facilitates a multilateral exchange system among businesses. Within this system, credit is primarily lent to companies, which they then use to purchase products from other network members. No interest is charged on debts or credits within the Sardex system. Moreover, while Sardex credits are nominally equivalent to euros, they cannot be converted into them. This non-convertibility confines Sardex use to a specific group of participants. Recently, the currency has begun to circulate in other Italian regions, marking a new phase that warrants further analysis. As Sardex cannot be hoarded, this system encourages the circulation of goods and stimulates purchases. Sardex Ltd. also acts as a business advisor, encouraging new companies to join the network and helping members maximize their benefits from the system. A broker service aids in matching supply and demand within the circuit. Transactions are fully transparent, with all activities traced and state VAT in euros applied to transactions.

The Sardex initiative has demonstrated its ability to foster cooperation and solidarity among network members, primarily through encouraging economic transactions among Sardinian companies. The volume of transactions performed is a key criterion for evaluating its functionality, influencing members' decisions to remain within the network (Bazzani, 2020a). Contrary to the neutral veil perspective of money, where preferences are considered exogenous and culturally contextual, Sardex money is expected to have no impact on exchanges (Bazzani, 2022c). According to this view, if money serves as a means to realize predefined ends, the possibility of exchanging goods and services in Sardex or euros should not affect the transactional volume. The observed increase in economic exchanges aligns with entrepreneurs' perceptions of improved business performance after joining the Sardex circuit. The Sardex Ltd. broker area actively promotes new companies to interested firms, facilitating an influx of job requests for small artisan enterprises. This heightened economic activity is attributed to the circuit's high cooperation capacity, the low cost of Sardex money, and the intentional, broker-provided support to facilitate transactions within the network. Cooperation within Sardex is facilitated by effective monitoring and sanctioning mechanisms, fostering an environment of trust and cooperation among members (Granovetter, 1973).

The network's monitoring and sanctioning mechanisms also contribute to the perception of its ethical code of conduct. This code, ensuring fair economic transactions, is considered a guarantee of the quality of exchanged goods and adherence to expected payment agreements. The reliability established within the Sardex network allows entrepreneurs to accept payment terms deemed too risky in the euro market, leading to forms of cooperation that are often considered unrealistic in traditional markets. The ability to cooperate—seen as an attitude of mutual aid—is further enhanced by the perception of Sardex as a solidarity-based choice that supports regional businesses and limits the market influence of larger, internationally based companies (Bazzani, 2020b).

However, the network's limitations, including its exclusive circulation within Sardinia, contribute to the perception of Sardex as less abstract and more embedded in the social context than the euro. For many entrepreneurs, access to ordinary money is either expensive or impossible, making Sardex money an inexpensive alternative. Moreover, Sardex Ltd. offers free marketing opportunities, further encouraging entrepreneurs to associate the currency's use with collective purposes for Sardinia's socio-economic development. The sense of community and cooperation within Sardex surpasses that of the euro market, leading to a unique trust and cooperation dynamic.

Entrepreneurs using Sardex often perceive it as more than a mere transactional tool; they see it as a means of contributing to the community while simultaneously advancing their businesses. This collective perspective links their economic activities to positive outcomes Sardinia's people, promoting advocacy for Sardex membership within their social circles, even when immediate economic transactions are not feasible. This preference for the community over individual gain aligns Sardex with a more value-oriented approach rather than the traditional instrumental action associated with economic activities. Consequently, the Sardex case presents a unique fusion of economic functionality and social cooperation, challenging the conventional notion of money as a neutral medium in economic transactions.

The unique way in which entrepreneurs interact within the Sardex network reduces social distances, transforming economic relations into a robust form of social bonding not typically observed in traditional economic transactions. This distinctive aspect qualifies Sardex money as a form of "community money" (Bazzani, 2021; Degens, 2016; Michel & Hudon, 2015; Seyfang & Longhurst, 2013). However, this community-oriented money is not solely based on pre-existing social ties, as certain features of the community bond emerge during social interactions between Sardex members rather than in the context of euro use. This finding aligns with previous research indicating a positive correlation between the use of complementary currencies and social cohesion (Fare & Ould Ahmed, 2017; Michel & Hudon, 2015; Nakazato & Hiramoto, 2012).

The Sardex case reveals alternative perspectives on money beyond its role as a universal equivalent, highlighting how it can promote situational collective aims within specific contexts. Operating as a "closed" form of money with limited circulation and non-convertibility, the Sardex network does not primarily facilitate external exchanges. However, this closed nature does not hinder interactions with the outside world, as members remain active in the euro market for most business activities. Rather than restricting formal freedom, Sardex incentivizes local economic growth without impeding transactions with external economic actors, aligning with certain green money proposals and marketing-oriented complementary currencies (Seyfang, 2009; Larue et al., 2022).

The Sardex case underscores money infrastructure's potential to shape social interactions and collective aims, presenting a nuanced perspective that challenges the notion of money as a neutral medium in economic transactions. The Sardex case exemplifies complementary currencies as niche innovations (Geels, 2004) that provide alternatives to neutral, indifferent money. These experimental monetary functioning offer a medium-term, smaller-scale perspective on economic development, focusing on enhancing positive freedom by gradually strengthening local businesses' cooperative capacities. Sardex pursues solidaristic aims through economic cooperation and changes in preferences.

Twin Money

"Twin Money" refers to a concept in economics where two parallel systems of currency circulate within an economy (Massó, 2023). One system, governed by the government or central bank, constitutes the official or legal currency. The second, often termed "complementary" or "parallel" currency, operates alongside the first and is managed by non-governmental entities, such as local communities or private organizations. Twin Money systems aim to enhance economic activity by introducing additional liquidity, particularly in regions where the official currency may be scarce or volatile.[3]

3 It is important to clarify that Twin Money is currently a theoretical and institutional design, not yet implemented in practice. While it builds upon empirical insights from local currency experiments and systems of mutual credit, there are no full-scale, real-world

In the contemporary monetary landscape, traditional notions of money rooted in commodity value interact dynamically with emerging perspectives that emphasize their social construction and institutional role. Within this context, Massó's (2023) proposition of Twin Money suggests a shift in currency conceptualization and use. It challenges the conventional view of money as a static medium of exchange backed by intrinsic value, advocating for a system where currency embodies both economic utility and direct social benefit unmediated by the traditional competition mechanism. At its core, Twin Money distinguishes itself with its non-transferable nature, unlike traditional currency, which can be freely exchanged among economic actors. This unique feature aims to encourage the localized circulation of currency, thereby curbing wealth accumulation and promoting economic equity within communities.

Individuals receive Twin Money in the form of digital deposits, serving as both an asset for citizens and a liability for the state. This currency can only be spent by the individual, ensuring that the value generated from their labor remains within the community. Moreover, the state assumes a crucial role in overseeing and regulating its circulation. Through its administrative bodies, the state certifies contributions to the common good, facilitating effective circulation to promote social welfare and economic stability. Businesses accepting Twin Money record such transactions as assets against a liability owed to the state. They are required to fulfill their tax obligations in the official currency, thereby guaranteeing financial accountability and compliance with regulatory frameworks. This approach creates a monetary circuit that enhances economic dynamism and social cohesion within communities. By encouraging currency circulation at the local level and fostering reciprocal commitments between individuals, society, and the state, Twin Money aims to enhance overall economic well-being and resilience (Massó, 2023).

Twin Money offers a compelling framework for compensating non-market values and work, aiming to recognize and incentivize contributions to the public interest often undervalued in traditional economic systems. It can be utilized to remunerate various forms of non-market labor, particularly those activities contributing to social benefit and well-being but overlooked or marginalized in market-based economies. One highlighted aspect is the compensation for unpaid work, such as caregiving and community service. Twin Money provides a means to establish the value of such labor based on citizens' contributions to the public interest, addressing the inherent undervaluation of unpaid work in conventional economic systems. Furthermore, Twin Money can be leveraged to compensate individuals for skills and competencies contributing to social profit, promoting investments in human capital beyond traditional market mechanisms. It also has the potential to support initiatives for environmental conservation, sustainable development, and community resilience, aligning economic incentives with broader societal goals.

Overall, Twin Money offers a promising avenue for recognizing and rewarding non-market values and work, addressing the limitations and inequalities of traditional economic systems. By expanding the scope of economic exchange to include a broader range of social contributions, Twin Money can promote greater social inclusion, environmental sustainability, and overall well-being in society. Yet, implementing such a system faces practical challenges. Operational scalability requires comprehensive digital infrastructure and broad social acceptance, which could impact initial adoption. Furthermore, governance concerns emerge regarding oversight, transparency, and ensuring that twin money transactions genuinely serve the public interest rather than narrow political or economic agendas. Overcoming resistance from established monetary institutions and stakeholders accustomed to conventional monetary arrangements will require carefully designed transition policies, transparent communication strategies, and participatory governance models (Massó, 2023).

applications of Twin Money. Nonetheless, analyzing its structure can highlight how such a system could internalize non-market contributions and enhance positive freedom through monetary infrastructure.

To illustrate the potential functioning of Twin Money, let us consider a local initiative in which the state certifies unpaid care work (e.g., elderly care, youth mentoring, or neighborhood clean-up) and issues Twin Money credits to participating individuals as digital non-transferable deposits. These credits can be redeemed locally for public services (e.g., transport, cultural access) or exchanged for local goods with participating businesses. A bakery, for example, might accept Twin Money as partial payment, receiving a tax credit in euros from the state in return. This creates a circuit in which social value is monetarily recognized without being fully subjected to market logic. While purely illustrative, this scenario helps ground the normative potential of Twin Money in recognizable institutional forms already discussed in policy debates around basic income, time-banking, and participatory budgeting.

CONCLUSION: RETHINKING MONEY FOR POSITIVE FREEDOM

In light of the interconnectedness of global issues and the imperative to avoid causing harm to (spatially, temporally, and relationally) distant people, there arises a pressing need to reconsider the very nature of money itself. Traditional monetary systems (i.e., neutral money) have largely operated within the framework of national economies and have struggled to internalize the externalities associated with global challenges, such as climate change, inequality, and social injustice. To address these, there is a growing call for monetary systems that not only facilitate economic exchange, but also internalize the broader social and environmental costs of economic activities.

Such a reimagining of money requires a shift toward positive freedom—that is, a freedom that allows individuals to pursue their interests while ensuring that their actions do not infringe upon the freedoms and well-being of others, whether near or far (O'Hagan, 2015). Central to this rethinking is the idea of incorporating mechanisms within the monetary system that internalize global interdependencies. This involves accounting for the social and environmental costs of economic activities, including those that affect people and ecosystems beyond national borders. By internalizing these costs, monetary systems can incentivize behaviors that promote sustainability, equity, and social justice, thereby fostering positive freedom on a global scale.

One approach to achieving this is through the development of innovative monetary instruments that assign a monetary value to environmental externalities. For instance, internalizing the costs of carbon emissions could financially incentivize businesses and individuals to transition towards cleaner and more sustainable practices, thus mitigating the negative impacts of climate change on both present and future generations. Moreover, complementary currencies, such as Sardex and Twin Money, offer promising avenues for internalizing social values and promoting positive freedom within local and global contexts. By incentivizing cooperative economic exchanges and recognizing the value of non-market activities, such as caregiving and community service, these alternative systems could help create more inclusive and sustainable societies.

However, the transition toward monetary systems capable of internalizing global issues and promoting positive freedom is not without its challenges. It requires concerted efforts from governments, international organizations, civil society, and the private sector to design and implement policies and mechanisms that incentivize responsible economic behavior and foster global cooperation. Furthermore, there is a need for greater public awareness and participation in shaping the future of money. Initiatives that empower communities to design and implement their own monetary systems, tailored to their specific needs and values, can contribute to the democratization of finance and the advancement of positive freedom for all (Barinaga, 2020; Diniz et al., 2024).

These two examples—Sardex and Twin Money—offer distinct yet complementary insights into how monetary systems can promote positive freedom. As a successfully implemented complementary currency operating within a defined regional network, Sardex demonstrates how a multilateral credit system can strengthen economic cooperation, foster social trust, and support local development goals through embedded governance and active brokerage mechanisms. Its design helps realize positive freedom by reducing financial exclusion and enabling economic participation that serves collective ends. In contrast, Twin Money remains a conceptual framework inspired by existing experiences in community currencies and public credit systems. It extends the potential of complementary money by proposing a non-transferable, state-recognized currency explicitly aimed at remunerating non-market contributions, such as caregiving, voluntary work, or ecological restoration. While it has yet to be implemented, its design points to a more radical internalization of social and ecological values in monetary functioning. As such, it reflects the frontier of institutional innovation in the realm of money for public good.

In light of the above, future research could focus on both evaluating the long-term impacts of such established systems as Sardex and exploring experimental pathways to institutionalize models like Twin Money. Policy frameworks supporting legal recognition, public–private collaboration, and digital infrastructures for complementary currencies would be essential for their wider adoption. Governments and central banks could pilot hybrid models—such as programmable public money for social benefit—drawing on lessons from both empirical practice and institutional design. In conclusion, rethinking money as a tool for promoting positive freedom and internalizing global issues is essential for addressing the interconnected challenges facing humanity in the 21st century. By embracing innovative approaches to monetary design and governance—as conceptualized in this paper—we can create monetary systems that not only facilitate economic exchange, but also foster social justice, environmental sustainability, and collective well-being on a global scale. In so doing, we can pave the way toward a more equitable, resilient, and inclusive future for all.

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