# The Economic Viability of Complementary Currencies: Bound to Fail?

# Beat Weber[[1]](#footnote-1)

Bitcoin and similar cryptocurrencies are the latest embodiments of a longer history of attempts to establish something that is frequently labeled as ‘complementary currency’ (CC). Complementary currencies are issued by entitities other than national central banks and are intended to circulate alongside official currencies, as well as occasionally serving particular purposes thought to be underserved by official currencies. To some, CC projects look like attractive shortcuts to solve various problems. But almost all attempts ultimately fail to take off after initial enthusiasm. Why?

In times of economic and financial crisis, the issue of money becomes paramount. The number of people and areas where money is sparse is increasing. The institutions specialized in handling money (banks and the financial system in general) suffer from decreasing trust in the wake of banking crises and their consequences: expensive public assistance to stabilize the financial system, high debt burdens, and receding credit availability. In this context, the appropriate level and means of collective action to remedy the situation becomes an issue of debate. In many grassroots circles, currency reformers propose what seems to be a radical solution through the creation of one’s own currency. Instead of engaging in the exhausting struggle for appropriate national economic policies to remedy the situation, the creation of a complementary currency seems to allow likeminded people to go it alone. Such a currency project promises to bypass the resistance of established powers and divided public opinion, and to help its users build their own economic community.

Making the connection between political communities and currencies is not unfounded: most currency areas in the current world coincide with national borders, (the Euro being a noteable exception), so currencies reflect community building around national states. If a nation is split into divisive political camps, why not create communities around common goals and create currencies to represent these communities in the economic sphere? Indeed, grassroots complementary currency projects can initiate enthusiasm and effort that promotes ties among community members and in that way yield many social benefits.[[2]](#footnote-2) In democratic theory, legitimacy can be conceived as input and output legitimacy. Input legitimacy refers to the extent to which community members have a voice in a project. Output legitimacy refers to the ability of the project to deliver expected results. While complementary community currencies can claim input legitimacy by building on participation of community members, the question of output legitimacy is trickier. Can complementary currencies work as money?

Money is the general equivalent in capitalism – commodities do not buy each other, but all commodities can be bought with money. Based on this status, money is used for three purposes: 1. As unit of account in which prices are measured and compared in money. 2. As means of payment: goods and services are purchased and debts settled with money. 3. As the most liquid store of value. Facing an uncertain future with respect to their income and their economic needs and obligations, people hold money to insure themselves against unforeseen expenditures. In contrast to other forms of storing wealth (real estate, financial assets, and other items of value), money offers the advantage of being immediately available to buy commodities. That feature is referred to as money’s superior liquidity.[[3]](#footnote-3)

In general, the price system is based on the single unit of account. In the Eurozone, all prices are calculated and displayed in Euro. This aspect of money tends to be a monopoly within a currency area. The more goods and services are denominated in a single unit of account, the better people can compare prices among competing offers and get the best value for their money.

Under one unit of account there can be several media of payment. While the central bank is the issuer of money denominated in the unit of account of the same name, claims on banks and other issuers of media of payment circulate alongside central bank issued money. But banks as issuers must guarantee a par relationship with cash (i.e. one Euro is one Euro, irrespective of the form and issuer – cash or bank issued non-cash).

Concerning the third aspect of money (store of value), many things can be used to store value, money only being the most liquid one. Money in this case is particularly important in situations of crisis, where people may lose their faith in the value of everything except money.

In most of Europe, money consists today of notes, coins (i.e. cash) and bookkeeping entries issued by the central bank and the sovereign mint, and of bank deposits which represent a claim on the former. Most payments among people in everyday life consist of bank deposit transfers (while banks settle the resulting net balances among each other with deposits at the central bank). In addition, transactions among enterprises are sometimes based on mutual credit.

Banks as the most important issuers of media of payment in the modern economy are subject to regulation and supervision by the state and the central bank. The means of payment issued by banks and central banks can be considered part of the same currency: they share the same unit of account, banks strive to uphold their promise to exchange bank deposits into cash on demand, and the issuing behaviour of banks is subject to surveillance by authorities.

In contrast, complementary currencies could be characterized as means of payment issued by entities that are not subject to coordination with official money issuing authorities (state and central bank). Their media of payment are not necessarily denominated in the official unit of account and do not necessarily guarantee par relationship with official currency.

To answer the question whether CCs can work as money, a typology of possible meanings of complementarity is proposed as a first step and illustrated with historical examples. In a second step, I discuss determinants of succesful currencies in general.

## What Does Complementarity Mean?

Today, cash consisting of notes and coins is issued exclusively by the state and its central bank in most currency areas. Banks issue checkable deposits that serve as means of payment in everyday economic transactions and are subject to state regulation and supervision.

Historically, the state was not always the sole issuer of cash. In many English speaking and a few contintental European countries, private banks issued their own notes in the 18th and 19th century, redeemable in precious metal.[[4]](#footnote-4) Costly non-par exchange among competing issuers, widespread counterfeiting and reocurring bank failures made the costs of such a system so striking that public support grew for a stronger state role.[[5]](#footnote-5)

But even after centralization, in a number of episodes in modern economic history, complementary currencies issued by entities other than the sovereign or banks have circulated. We can distinguish these episodes by the CCs respective field of application, giving specific meanings to the term *complementarity* in each.

### a) Complementarity With Respect to Specific Currency Denominations

Examples include small denomination coins privately issued by shops and bars to overcome shortage of small change in times when the availability of official coins was impaired due to war, crisis, or specific policies.

In the U.S. in the 19th century, private banknote issue was dominant. But banks were legally prevented from issuing small-denomination banknotes.[[6]](#footnote-6) Merchants, farmers and companies filled the gap by issuing paper currency notes and tokens in small denominations, denominated in dollars, or goods and services rendered. These tokens could be used to pay for products of the issuer and sometimes circulated among the general public. The same happened during the U.S. civil war, when inflation led the price of precious metals to rise above their minted value in coins, causing metallic coins to disappear from circulation. Eventually, authorities filled the temporary gap again, and the use of private substitutes receded.[[7]](#footnote-7)

Many observers see small denomination online payments as a current example where usage of official currency is impaired by high transaction fees of payment service providers, opening a window for complementary currencies. In this case, it is not the unavailability of official currency in small denominations per se but the prevailing transaction costs involved in making online payments, which may deter users from making small denomination payments in official currency. Established payment service providers (like Paypal, credit card firms, Western Union etc.) charge fees for their services which can be so high in relation to the payment sums as to deter small-sum transactions altogether. Filling that gap is one of the uses which Bitcoin and similar cryptocurrency schemes are designed for. By making the provision of payment services a byproduct of competition among Bitcoin ‘miners’ for obtaining new currency from the vault, transaction fees for users are kept very low in the introductory phase of the project. In contrast to payment service providers in official currencies, who have to recover their costs through fees, the Bitcoin network compensates their service providers with newly issued currency. Based on the expectation that limited supply will increase Bitcoin’s value in terms of official currency, the network has so far been able to attract sufficient volunteers (‘miners’) ready to engage in that gamble, in turn enabling cheap transactions among users of its payment network (that nevertheless entail considerable loss risks).[[8]](#footnote-8)

### b) Complementarity With Respect to Specific Geographical Areas

There were a number of episodes in history where regions (or private actors within regions) temporarily introduced complementary currencies because they experienced shortage of cash in the wake of interruptions of the financial infrastructure.

Mining and lumber companies of the 19th century in the U.S. and elsewhere were often active in remote locations. Setting up company towns and serving their staff through company stores, these companies often issued their own currency (redeemable against goods in the company store) to pay workers. They could thereby overcome costs and risks involved in large distance transportation of physical currency,[[9]](#footnote-9) and profit from the advantages in holding a local monopoly in offering employment and goods, pricing them and issuing the means of payment. Prisoner of war camps, military bases abroad and ships on long voyages have also set up similar schemes. With growing reach of financial infrastructure and the diffusion of electronic forms of payment, such arrangements have become more or less superfluous.

During the Great Depression of the 1930s, banks in many regions closed or restricted the amount of cash customers could withdraw after experiencing runs on their deposits. To counter the resulting liquidity shortages, many regional authorities in the U.S., Germany, Austria, and other countries resorted to issuing so called ‘scrip money’. These were means of payment denominated in the official unit of account and redeemable for either proper money at a future date, for goods (as offered either by the issuer or some other producers ready to accept scrip) or as discharge of local tax liabilities.[[10]](#footnote-10) A similar phenomenon was observed in Russia’s transition from a centrally planned economy in the 1990s.[[11]](#footnote-11) In a political crisis concerning the state budget in 2009, even the state of California resorted to issuing IOUs to meet its short-term financial obligations for a few months.[[12]](#footnote-12) In the recent crisis of 2008 –which in many ways was compared to the Great Depression – policy makers in most industrialized countries took measures to prevent deflation and breakdown of the financial infrastructure comparable to the 1930s. In some countries though, policy constraints prevented the use of such measures, leading to a renewed interest in currency related innovations.

An often-cited modern case in this respect is Argentina. When Argentina was hit by a financial crisis in 2001, access to bank accounts was severely impaired, leading to a surge in surrogate means of payment. Regional authorities issued scrip money and individuals joined barter clubs, where club means of payment were issued to facilitate trade of goods and services among members. After a few months, instances of fraud and mismanagement within these arrangements and an improvement of overall financial stability led to the decline of private complementary currency use.[[13]](#footnote-13)

Some regional complementary projects aim at reducing leakage of purchasing power and reorienting economic circulation towards the regional level. As envisaged by currency reformer Silvio Gesell in the 1920s, some of these projects involve demurrage. These currencies deliberately lose value over time, thereby encouraging their fast circulation and discouraging hoarding. Sometimes such currencies are taken up and seem partly succesful, to some extent because their novelty factor makes them popular with tourists and currency collectors. But in general they fail to cover much ground because they entail structural problems. Offers, which prove uncompetitive on the market, cannot be rendered competitive by offering potential customers a different currency unless it gives access to a hidden form of price reduction, i.e. when local currencies are de facto vouchers granting their users discounts off list prices at local merchants. Typical regional currencies offer less choice than official currency. At best they are accepted by local merchants, and if they entail demurrage, they favor fast consumption spending which might not be in line with consumers preferences. Their use does not provide access to any goods that are unavailable in official currency. So the network is smaller compared to official currency, offering a smaller choice of uses. Those uses (i.e. the goods and services accessible via the currency) are non-distinct from the potential uses of official currency, and – in the case of demurrage-based operation – the issuer deliberately impairs the currency’s full functioning as money by making it useless for storing wealth.

Making use of the currency mainly promises to contribute to the collective good of regional prosperity, although that depends on whether and how any additional incomes created by regional currency circulation are distributed within the region. But if people before the introduction of regional currency were not willing to ‘buy local’ with official currency and instead preferred greater choice, why should they give up official currency in favor of a complementary currency which offers less choice? The discrepancy between people’s individual consumer preferences and their wish for regional prosperity reflects a tension between individual and collective rationality.

Introducing a regional currency does not eliminate this dilemma but simply shifts it from the stage where consumption decisions are made towards the stage where the means of payment are chosen. It is only under specific circumstances that such a shift might indeed make a difference. If the choice of the means of payment is exposed to greater transparency and closer community surveillance, peer pressure could be more effective than in the application on dispersed individual shopping behavior. Regional currencies can also have a marketing effect that raises awareness among potential users. But as long as the economy is based on markets where individual choices of producers and consumers determine outcomes, instead of collective decision making with binding consequences for individuals, individual preferences are likely to prevail whenever there is a dilemma between individual and collective rationality.

Complementary currency projects with demurrage features assume that money can be reduced to serve as means of payment in a process of mutual exchange. Uncertainties deriving from the current reality of a non-transparent economy, the decentralized decision making of private property owners, and the implications for investors dependent on expectation-based production efforts, are ignored. But in the modern economy, money fulfills an essential function beyond being a means of payment. Money is a unit of account, which is decisive for the formation of comparable prices, and it is the most liquid store of value. Liquidity offers a hedge against uncertainty intrinsic to a capitalist market economy. Many reformers want to do away with this function because if uncertainty increases and people make increased use of money as store of value instead of investing it, money is hoarded and its circulation slows. The consequence can be a fall in consumption and investment and rising unemployment. Thus individually rational behavior yields dysfunctional collective results.

In order to succesfully reduce uncertainty economic prospects must be improved by economic policy. Depriving people of a store of value and trying to force them to spend is not a means to protect against uncertainty. Making money dysfunctional as store of value does not encourage people to stop hoarding; they simply start searching for different modes to preserve value or for a different kind of money.

### c) Complementarity With Respect to Specific Contracts

Suppliers can decide to make specific goods, services, and transaction types more or less exlusively available through certain CCs. Examples include currencies issued by computer game producers that give access to virtual goods in online games, and private cryptocurrencies that enable illegal transactions and tax evasion.

In virtual online games like World of Warcraft or Second Life, the designers have introduced virtual currencies. In Second Life, users can enter into transactions with each other using Linden Dollar. The currency can be purchased from the game owner or from third party exchanges and used to purchase virtual goods and services (as offered by the game owner or other game users) within the game. The game owner tries to keep a stable exchange rate with the US dollar by creating new Linden Dollars as demand increases. In World of Warcraft, users can buy equipment with digital ‘gold coins’ in order to help them advance in the game. Digital coins are given away by the game owners as rewards for succesful players. They can also be obtained by selling virtual commodities produced or found by users. In addition, they can be obtained on exchanges, where ‘gold farmers’ sell the products of their in-game labour against official currency. In this way, players short on time can outsource the time-intensive advancement in the game for their online character by paying official currency. The work is typically done by young gamers rich in time but poor in money from countries like China and elsewhere. The game owners try to discourage and prevent the latter kind of transactions.

Game owners issue these currencies in order to financially motivate players, provide an incentive for customers to return once they have accumulated certain wealth (‘lock-in’), and generate additional revenue for themselves.[[14]](#footnote-14) The basis of game currency success is that their issuers control access to goods in demand, which creates demand for the currency among game users.

In some respects, anonymous cryptocurrencies like Bitcoin and many of its variants are further examples due to their offering anonymity in making payments. Bitcoins do not have a central issuer but are issued by a community of users from a stock according to predetermined rules encoded in an open source software platform. The project does not offer any goods for sale that are exclusively available through Bitcoin. While Bitcoin and similar projects are intended by their inventors to rival existing currencies in all kinds of transactions, their main advantage as means of payment lies in transactions where there are reasons for transaction partners to avoid official currency (apart from the small denomination payments referred to above). In particular, money laundering and transactions in illegal goods can benefit from the anonymity offered by making payments in Bitcoin. (For regular consumer and business transactions, a currency like Bitcoin will not be widely used. When a currency is designed to increase in value over time, it is better to hoard it, and pay current expenditure with a currency that is more stable. Without an issuer guaranteeing a certain stability, Bitcoin is underqualified to serve as unit of account.)

In projects like the Japanese Fureai kippu and other time bank projects around the world, services like care work are evaluated based on labor time spent and rewarded with a credit for the supplier which can be spent at a future date on consumption of care benefits provided by other network members. Many members seem to perceive care work contributed under this system as being of superior quality, providing an incentive to join. In contrast to industrial labor, general care work is not subject to productivity differentials, making labor time spent a useful unit of account comparable among persons and over time: spending one hour with a person five years ago can be equalized with spending one hour with another person in five years. In contrast, one hour of industrial labor, for instance, in the garment industry may have resulted in one T-shirt five years ago, but may result in five T-shirts in five years, due to the continual technical advancement of machinery. As a consequence, time bank arrangements can be suitable in settings where one type of homogenous service of roughly constant quality is exchanged among people who deliver their contribution at different points in time. Their main challenge relates to uncertainty about whether one’s own contributions can be exchanged at a future date for some reciprocal service – depending on the attractiveness of the network over time. When such arrangements attempt to include a broader range of goods and services, they run into the problem that their unit of account (units of labor time) does not make it profitable for all kinds of service suppliers to exchange their services according to such evaluation criterion. Would an experienced, productive craftsman be prepared to exchange one hour of her labor for an hour of labor by an apprentice? Would a doctor, who invested years of study, be prepared to exchange one hour of her labor for an hour of labor by an unprofessional care worker? Such issues typically trigger disputes over the appropriate value standard and lead to the exit of suppliers that can get a better deal in markets based on official currency.[[15]](#footnote-15)

### d) Complementarity With Respect to Specific Groups

In many grassroots campaigns, complementary currencies are envisaged as a way to promote economic exchange among participants lacking jobs and income in official currency. In local exchange trading systems (LETS), complementary currencies are introduced to overcome market exclusion of certain segments of the population or regional economic decline. While sharing some features with regional currency projects referred to above, their design does aim to a lesser extent at replacing official currency in existing trading relationships within a whole region than in creating new trading relationships among members of groups that may or may not be located within a specific region. In this context, ‘a complementary currency […] is an agreement to use something else than legal tender (i.e. national money) as a medium of exchange, with the purpose to link unmet needs with otherwise unused resources.’[[16]](#footnote-16)

Since the 1980s, there has been growing interest in such initiatives. But while a number of grassroots projects have created early local enthusiasm for such projects, none of them has flourished for long or managed to reach a critical mass. Most falter after initial support energies fade.[[17]](#footnote-17)

LETS networks use interest-free local credit, so direct bilateral barter-like swaps do not need to be made. No physical money is issued, but rather transactions are recorded in a central location open to all members. As credit is issued by the network members, for the benefit of the members themselves, LETS are considered mutual credit systems.[[18]](#footnote-18)

The main challenge is to attract a significant number of reciprocal trade opportunities. Participants lacking alternative income sources will be easy to attract. Their motive is to get access to goods and services in high demand, but suppliers of the latter tend to have alternative sources of income and tend to be deterred by the perceived risk to lose out in LETS trades: the unemployed carpet cleaner and the piano teacher might join in the hope of offering their services for something they need, like food and clothing. But supermarkets offering food and clothing will tend to prefer official currency in payment and won’t be attracted by a network offering piano lessons, carpet cleaning and related services in exchange for their products. As the Wikipedia entry on LETS puts it, ‘Conventional national currency is generally hard to earn, but easy to spend. To date LETSystems are comparatively easy to earn, but harder to spend’.[[19]](#footnote-19)

## Why Currencies Are Accepted

Having reviewed experience and prospects of various approaches towards complementary currencies, we can step towards some general observations drawing on economic theory. As the economist Hyman Minsky once quipped, ‘Everyone can create his own currency, the problem is to have it accepted’. If that is so, what determines the acceptance of a currency by users?

In many accounts critical of existing monetary arrangements, it is assumed that official money is forced on users, based on ‘legal tender’ status.[[20]](#footnote-20) But there is less behind this status than commonly believed. If you use the official currency in payment you will be protected by law against your transaction partner sueing you for non-payment (unless the underlying contract specifies otherwise). And if you print your own banknotes, you will be prosecuted for counterfeiting. But you are free to agree on another means of payment than the official currency with your transaction partner in a private transaction. As long as you pay all applicable taxes in the official currency, you can, for instance sell your car in exchange for socks, Bitcoins, or something else. The episodes mentioned above meant to illustrate our typology, show that time and again in modern economic history privately issued currencies were able to gain foothold in the economy. So the legal status of official currency does not necessarily imply a full currency monopoly. In a world of multiple currencies there are always alternatives available to some extent. The extent of their use depends on the availability and advantages various currencies offer in comparison to available alternatives. Whenever there is more than one currency available, currencies must offer advantages to users in order to gain und uphold their acceptance.

Among the four types of complementarity reviewed above, I identified examples for successes and failures for all types except those based on complementarity with respect to specific groups, where no successful example was found. From the succesful examples, I can infer that CCs can gain traction in two cases. The first case is where they fill a gap left by official currency – when there are hurdles to accessing or using official currency despite the presence of potential transactions among solvent transaction partners. In such cases, even currencies inferior to the official currency can gain acceptance due to lack of alternatives (e.g. private currencies issued by employers in remote locations lacking access to official currency). The second case is where CCs can claim exclusivity over specific trades due to various reasons. The currency issuer is a sought after contracting party, accepting only her own currency in payment for goods and services she offers (for example, in-game currencies sold to users by producers of popular computer games); advantages of cost and/or convenience over official currency in certain transactions (for example use of Bitcoin for small denomination online payments and purchase of illicit goods). So CCs seem (at least temporarily) successful in episodes where the official currency is suddenly unavailable in cash, where it is not applicable at all towards the trades concerned or its use is entangled with disadvantages in the transactions concerned. But as the modest success of LETS shows, they fare far less well when exposed to competition with official money.

Why is that? Returning to the functions of money introduced above, we can expect a good currency to exhibit the following features: a unit of account that covers the broadest possible range of commodities and contracts, thereby enabling consumers to compare prices to get the best deal. That is a central reasoning behind the introduction of the Euro as common currency for the European Community’s common market; prices in Spain and Finland can now be compared without having to confront conversion rates, conversion costs and fluctuating exchange rates.

Concerning the means of payment and store of value function, we can expect users to choose a currency which is as widely accepted as possible, and which can best be expected to keep its value over time, making it also the most liquid store of value (at least for short periods of time).

The features described above imply that, if several currencies offer the same access to goods and services, it would be inefficient for users to use all or many of them in parallel unless they can be considered perfect equivalents (sharing the same unit of account and credibly keeping par relationship among each other). If different currency issuers offer different units of account, currency competition will ensue. If faced with a choice among competing currencies, a currency user has to form expectations about the behavior of two (groups of) actors, the issuer and other users. Currencies can be conceived as networks comparable to telephone networks–the benefits of using a specific currency for each individual grows with the service quality of the network and the number of participants. If one among several competing networks of comparable quality succeeds in reaching a critical mass of initial users, they will soon achieve a position that is very hard to contest by competitors. If there are competing value standards, we can expect people to prefer the standard which holds its value over at least shorter periods of time and which covers the most (and the most attractive) goods and services. The possibility and credibility of the issuer to assure the quality of a currency, and the likelihood of other users adopting it are therefore decisive features in currency network competition.[[21]](#footnote-21)

### The Role of the Issuer

The issuer can promote the acceptance of its currency by offering contracts (concerning goods, services or liabilities) in high demand among potential users against payment of its own currency, and by credibly promising to stabilize the purchasing power of the currency over time.

How is the stability of money’s purchasing power assured? Money issuers have used different mechanisms to signal a commitment towards future stability. The choice depends on the available options and various political economy considerations. Historically, in uncertain times characterized by war, shifting political authorities and general mistrust, precious metal has been used as monetary base. In the 20th century, after the consolidation of national states and currencies, and the democratization of states, it has been possible to decouple the issuance of money from metal backing. Checks and balances against irresponsible monetary practice now seem in many cases to be sufficient to stabilize expectations that ensure trust in unbacked currencies. That was considered a welcome development, because stabilization of purchasing power in a dynamic economy characterized by permanent change requires permanent adjustment by the issuer. Under such circumstances, tying currency issuance to some scarce metal has inconveniences. It takes away the flexibility to adjust the means of payment to the needs of a growing economy. Without that restriction, stability with respect towards metallic reserves in the vault of monetary authorities makes way for the more useful notion of stability with respect to the evolving development of the economy, i.e. stability in terms of purchasing power. Such stability can be expected over the short term only, though. Over the longer term, rarely any currency in the 20th century has kept constant purchasing power. This is not a defect, because a functioning economy is not well served by too much encouragement for storing wealth in cash over longer periods. Instead, it requires people to invest their savings either directly in business enterprises or indirectly via financial intermediaries in order to stimulate economic activity. So over the long term, inflation must be low enough to prevent users from searching out alternative currencies, and high enough in order to encourage the accumulation of wealth by investing instead of hoarding cash.

In industrialized countries, central banks steer the provision of cash and its electronic substitutes by the financial system according to public mandates. The ability to stabilize complementary currencies depends on their issuing principles. In regional currency arrangements, issuing 1:1 against official currency is common. In mutual credit clearing arrangements, credit is issued in the process of exchange against supply of goods and services. Other concepts envisage backing by natural resources. In order to assist in stabilizing their currency’s value, many complementary currency issuers try to restrict the formation of a private market where units of complementary currencies could be sold at a discount against official currency. The disadvantage of such a restriction is that the lack of ability to get out of the currency can deter potential users to get in in the first place. The concept of Bitcoin is different. Based on a unit of account without any stable reference towards another currency or some sort of backing, its supply is subject to an arbitrary upper limit to be reached over time. When the number of users grows, its value in terms of other currencies can be expected to grow – that’s the signal Bitcoin wants to send to potential users in order to attract them. The currency’s purchasing power is completely determined by supply and demand in private currency markets. The resulting volatility of its exchange rate with other currencies makes for an interesting speculative object, but is detrimental for being used as unit of account and means of payment, two of the central functions of money.

Many CCs offer design features that depart from those of established currencies, and which would become operational once CCs are in circulation. The problem is that many such features (e.g. automatic loss of value over time, limited acceptability etc.) prevent such CCs to become accepted by users in the first place. While Bitcoin is quite unique among CCs in having strong features to attract users (i.e. the promise of value appreciation), its design is oblivious to the fact that precisely these features make its use as money unattractive.

Sharing the same unit of account with the official currency can increase chances of a CC’s acceptance (because it then benefits from the price system established under the main currency). Convertibility with the official currency also does (because having the exit option reduces the odds of entry for users), but limits autonomy in issuance because the latter has to operate under the constraint of keeping par relationship with official currency. The issuer must be able to always redeem the CC in official money 1:1. Still, issuers of payment media in the official unit of account must offer some adavantage to users in order to actually get acceptance. For instance, paying by bank deposit transfer instead of cash offers advantages in large value payments (because the alternative – carrying around a suitcase full of cash – is inconvenient and risky) and in transactions where buyer and seller do not physically meet.

Having a different unit of account than the official currency (like Bitcoin does) creates barriers between currencies, as their exchange rate can be subject to significant fluctuations. The risks associated with the latter feature is a user deterrent unless the CC’s unit of account can lay exclusive claim on sought after commodities.

### What Currency Users Expect

Apart from the issuer, the behavior of other users is decisive for individual decision making about whether to accept a certain currency. Will I be able to spend the money received for something I want to buy at a later date? Only if an individual user can expect that a significant number of her potential transaction partners will accept that currency for payment of goods, services and liabilities, she will be prepared to accept that currency herself.

Among users, some are more important than others. Users offering contracts in high demand by other users make a more significant contribution to the attractiveness of the network than others when switching to the network’s unit of account. If one groceries shopkeeper accepts a certain currency in payment, that is a higher contribution to the attractiveness of the currency in question than the willingness to accept of ten of my neighbors who have no specific supplies to offer. In other words, a network’s attractiveness consists in the kind and range of goods, services and debt contracts it allows access to, and the conditions under which a currency offers this access (i.e. evolution of purchasing power, and transaction costs related to making payments in that currency).

The modern state is in most cases succesful in issuing its own currency and having it accepted, not due to its monopoly of force, but because it is usually the single biggest economic entity in the economy and it collects taxes on economic activity to finance public services. By accepting exclusively the sovereign currency in tax payments, states create a substantial demand for their own money. If a shop owner has to pay her taxes in Euro, she will likely want to be paid by her customers in Euro. And by being a significant player in the national market (by employing people in public administration and contracting public works), the state creates a lot of income within the population paid in official currency. These factors are likely to create a critical mass of currency users, which is decisive for the development of network effects. Even for people that are initially free from tax obligations, the establishment of an initial network of taxpaying state currency users can make joining the network attractive. Because taxes are usually paid on economic activity, the tax-initiated network is at the same time a network consisting of attractive suppliers of goods and services: you can only tax when there is production and trade going on among citizens.

### Elements of Monetary Networks

By relying on network effects, the state establishes its unit of account as the standard measure of value in the economy. All the prices for goods, services and debt contracts will be denominated in the official currency. It also issues coins and notes (usually via the central bank and mint) that function as means of payment in economic transactions and discharge of debt obligations.

With respect to means of payment, the central bank and mint are not the exclusive issuers. Balances in bank accounts are claims on money, which can be used instead of cash in payments among citizens. The balances resulting from the transfer of credit among banks on behalf of their customers are settled in central bank money. As long as people’s cash needs stay within usual limits, banks can operate payments, grant credit and incur liabilities in the form of checking and saving accounts while holding only a fraction of their balance sheet in cash. In order for this system to be stable, banks have to make sure that the public’s trust in their ability to convert balances in deposit accounts into cash, i.e. to fulfill claims on money held by the public, is upheld.

In a way, the use of bank deposits as means of payment could be considered a complementary currency. But its relationship to central bank money entails a peculiar hierarchical feature. By being a claim on money, bank account balances are denominated in the official unit of account and must be managed by banks with a view to keep par relationship with central bank money. Banks usually offer depositors interest rates as compensation for the risk involved in parting with cash, the most liquid form of value. Deposit insurance and eventual crisis back-up by state institutions assist in maintaining the promise of par relationship. In turn, banks submit to regulation, supervision and are subject to monetary policy operated by central banks. When trust in banks evaporates, customers may start to doubt whether their deposits are still of equivalent value to money, and reject banks’ means of payment. A run on the bank’s cash reserves can ensue – customers try to exercise their deposit claims on cash in huge numbers, eventually surpassing the cash reserves of the bank concerned and bringing it down.

The ability for credit to act as money substitute is not restricted to credit issued by banks. For instance, inter-company loans such as trade credit granted among firms represents a significant part of the liabilities of the industrial sector.[[22]](#footnote-22) When firms issuing liabilities have good reputation, their debt might even circulate as means of payment among other firms.

But among credit forms, bank credit is the most developed one. Banks specialize in collecting and assessing information about creditworthiness of all kinds of borrowers. By pooling the resulting promises to pay and being subject to regulation and supervision, bank liabilities usually enjoy the highest degree of trustworthiness among credit forms, ranking highest among other money substitutes in the hierarchy established by the prevailing unit of account. The issuers of credit claims promise full payment of the nominal amount in official currency, and try to establish a reputation by repeatedly making good on that promise.

Deep political and economic crises often entail monetary crisis. In such a case, the arrangements in place for keeping the promise of value stability are shattered. If instability surpasses a certain threshold (e.g. in episodes of hyperinflation), users can be induced to look for alternatives. In many economically weak countries in economic history, currency substitution has taken place. Would such a deteriorating performance pose a chance for rivaling CCs based on private initiative? The answer tends to be no. Usually, substitutes are almost exclusively chosen from among the rank of other state supported currencies.[[23]](#footnote-23) Private CCs are inevitably positioned at the bottom of the hierarchy of credit claims. In a situation of eroding trust in the national currency at the top of the domestic credit hierarchy, users usually try to exchange national currency for a currency further up the international hierarchy, not a private one of lower hierarchical status. It is bigger existing networks and a more credible stability track record that typically attract users. Therefore, we can observe ‘Dollarization’, ‘Euroization’, etc. in small countries suffering from lack of public trust in their official currency, instead of a spread of private start-up currencies.

## Conclusion

The criteria of capitalism and the criteria of democratic civil society often clash. There are segments in the economy, which are not appraised by the market despite being considered a useful contribution to public welfare by many members – care work and art are just two. Some regions experience economic distress that triggers social crisis. Time and again, the whole economy experiences crisis, which leads to hardship among the population. Poor groups are permanently disadvantaged by the inequality resulting from the normal operation of markets. The traditional solution for such tensions is taxing market income and wealth or incurring government debt, and using the proceeds to finance government transfers to correct market outcomes considered incompatible with democratic will. The distributional issues involved in such measures can lead to a thorny political process hindered by tax resistance, divided opinion about what is to be considered of public value etc. Could a complementary currency provide a short-cut towards an alternative solution, offering a route for a minority to express value appraisals differing from those of the rest of society?

Complementary currencies can work if they are able to provide exclusive access to certain transactions (or exclusive benefits in relation to such transactions like discounts or anonymity) with respect to their content, their location, their size or the transaction partners, provided there is sufficient solvent demand for such transactions.

Absent such attractions, keeping a CC in use requires measures to decouple community members from the rest of the economy, which goes beyond the mere introduction of a currency. But even in that case, alternative economic circuits revolving around CCs will need official currency to pay for taxes and at least some imported commodities from the outside world. This requirement entails difficult choices involving the means of acquiring outside currency and managing the implications this has for the loyalty of CC community members and the management of exchange rates with the official currency. Because decentral entities issuing complementary currencies usually lack powerful instruments like capital controls, legal tender laws or taxing authority, they must either attract voluntary users with economic features that prevail in competition with official currency, or they must induce people to substitute individual economic motives by collective values enforced by peer pressure or non-economic benefits.

Of course, community members can choose to adopt complementary currencies despite they would fail to prevail in competition against competing currency networks according to purely economic criteria. Whether such non-economic motives can prevail over economic advantages of joining official currency networks is an empirical question that cannot be settled once and for all. But it has to be kept in mind that enforcement mechanisms to foster community participation can gain a repressive character beyond a certain limit. And while social and community building effects may be considered successful features of complementary currency projects which go beyond economic aspects,[[24]](#footnote-24) possible disputes among network members over valuation standards, distribution of benefits and governance issues are also part of the reality of CCs which have to be included in any assessment.

Transregional monetary networks are an expression of advanced societal division of labor in capitalism, governed by profit expectations. They can bring advantages in terms of profit making, specialization, efficiency and quality improvements. But they also entail transregional dependency of people across the globe from each other, which is especially felt in crisis. The autonomy of any economic project that does not completely decouple from this global division of labor can only be relative.

If currency areas are not congruent with the division of labor, local currency users who want to benefit from the translocal system are faced with costs (for exchanging the currency, coping with exchange rate risk, etc.). The smaller these currency areas, the more pronounced these costs. All people hoping to benefit from the wider system will try to avoid that cost.

If a currency circulates within a stable network of users, monetary policy is possible by the issuer, which has a bearing on economic activity. But issuing a complementary currency is not an instrument able to force the economy to work according to different rules. The capitalist economy works based on competition among unequal private property owners, resulting in production, transactions and wealth accumulation accounted for and paid in money. The supply of money can have effects on these processes, but on its own it is not a means to alter their logic.

Some CC projects are based on the hope that a different currency can stop the growth of inequality, thought as being triggered by the accumulation of money and the alleged tendency of money to grow through the compound interest mechanism.[[25]](#footnote-25) But such an approach rests on the conflation of money and wealth. Wealthy people do not hoard cash or bank accounts to a large extent.[[26]](#footnote-26) The primary form of wealth in capitalism is business ownership and income derived from owning or managing firms, as well as housing property and various financial assets. None of these are touched upon by reforming money. Inequality is not the result of monetary distortions of the market but of its normal functioning, assisted by a very benign tax treatment of wealth and its private transfer among generations. This wealth is the result of profit-oriented production based on private property and free labor, organized by competition on markets. Money symbolizes, measures, stores, and transfers wealth. Manupulating or reforming money does not yield an economy based on different principles. The expectation that through reformed money, the market would turn into a neutral forum of exchange among independent, small and equal individual producers is subject to disappointments.

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1. The views expressed in this text do not necessarily coincide with those of my employer. I am grateful to Stefan Schmitz for comments on an earlier draft of this paper. [↑](#footnote-ref-1)
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