

Making sense of alternative currencies

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2019

MAKING SENSE OF ALTERNATIVE CURRENCIES

*Essays on the ethics and economics of alternative monetary
proposals*

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En vue de l'obtention du grade de

Docteur en Sciences Économiques

Louvain-la-Neuve

Année Académique 2018-2019

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REMERCIEMENTS

Ce travail n'aurait pas été possible sans l'aide et le soutien constants de mes deux co-directrices de thèse, Marthe Nyssens et Danielle Zwarthoed. Je suis profondément reconnaissant à Marthe Nyssens d'avoir accepté de me suivre dans des chemins qui n'étaient pas les siens, d'avoir accompagné mon travail avec constance, et d'avoir soumis à sa relecture toujours pertinente l'ensemble de ce travail. J'aimerais remercier sincèrement Danielle d'avoir mis sa rigueur, son intelligence et sa connaissance profonde de la philosophie politique au service de mon travail, sans jamais se départir de sa bienveillance et de son exigence. Nos dialogues, ses questions et ses critiques resteront pour moi de très précieux et beaux moments de vie intellectuelle.

J'aimerais remercier Isabelle Cassiers, Marek Hudon et Martin O'Neill d'avoir accepté de faire partie de mon Jury de thèse. Leurs remarques et commentaires ont permis d'améliorer substantiellement plusieurs sections de cette thèse.

J'aimerais chaleureusement remercier l'ensemble des membres de la Chaire Hoover d'éthique économique et sociale pour leur soutien, pour leur amitié et pour l'irremplaçable bouillonnement intellectuel qu'ils et elles animent de manière toujours enthousiaste et conviviale. Reçoivent ainsi l'expression de ma reconnaissance Vincent Aubert, Jean-Michel Chaumont, Anne-France Colla, Thérèse Davio, Émeline de Bouver, Axel Gosseries, Thomas Ferretti, Katarina Pitasse Fragoso, Refia Kadayifçi, Maxime Lambrecht, Olivier Malay, Tim Meijers, Thierry Ngosso, Camille Pascal, John Pitseys, Hervé Pourtois, Manuel Valente Rosa, Pierre-Étienne Vandamme, Yannick

Vanderborght et Philippe Van Parijs, ainsi que tous les oiseaux de passages dont l'apport est si nécessaire pour nous à la Chaire : Daniel Callies, Chloé Castagnet, Julian Culp, Marcos de Armenteras, Ali Emre Benli, Judith Favereau, Andrea Felicetti, Josep Ferret Mas, Jean-Sébastien Gharbi, Mattia Gozzi, Siba Harb, Dirk Heine, Bru Lain Escandel, Andrew Lister, Adrien Lutz, Sibylla Mayer, Cédric Rio, Aldolfo Rodriguez Herrera, Danielle Schwartz, Julia Sichiéri Moura, Tinsaye Tamerat, Bruno Verbeek et Antoine Verret-Hamelin.

Durant ces quelques années, j'ai eu la chance de partir deux fois pour des séjours de recherche. La première fois en Suisse, à Lausanne, où, malgré une fin tragique, j'ai pu faire la connaissance de Sarah Koller, Sophie Swaton et John Van Thuyne, dont l'aide fut précieuse pour la réalisation de ce travail. Mon séjour à l'Université de Göteborg à la fin de ma thèse m'a permis de rencontrer et de bénéficier des commentaires éclairés d'Alexander Andersson, Richard Endörfer, Clément Fontan, Joakim Sandberg et Adrian Walsh.

Lors de colloques, de workshops, de Mich, de Vives, de Disputationes, ou de marches à pied, j'ai pu également bénéficier de remarques et de discussions avec François Claveau, Huguette Croisier, Hervé de Brouwer, Primavera de Filippi, Helder de Schutter, Muriel Dejemeppe, Eduardo Diniz, Malte Dold, Zoé Evard, Edgar Kampers, Stefan Kesting, Geneviève Guillaume, Thomas Müller, Stijn Neuteleers, John Nève, Matias Petersen, Mikael Petitjean, Nabil Sheikh Hassan, Paolo Silverstri et Gonzague Vanoorenberghe, ainsi que des commentaires des reviewers de la *Internet Policy Review* et du *Cambridge Journal of Economics*.

Enfin, cette thèse n'aurait pas été la même sans l'enrichissement et le recul que m'a apportés mon travail d'assistant à la Faculté des Sciences Économiques, Sociales, Politiques et de Communication. J'aimerais exprimer ma reconnaissance pour les excellentes relations nouées avec Gautier Attanasi, Audrey Beghon, Léo Czajka, Pierre Dehez, Michel Devroey, Catherine Dewit, Tanguy Isaac, Arastou Khatibi, Nathan Lachapelle, Joël Machado, François Maniquet,

Juliana Mesen Vargas, Erika Pini, Valérie Pottie, Sophie Poukens, Mathieu Sauvenier, Julie Sipura, Simona Suardi, Lorenzo Tondi, Bruno Vanderlinden et Christine Vandiest.

J'aimerais dédier ce travail à Anne-Marie, Lucie et Cléo Larue-Dehon, qui m'ont donné et me donnent encore tant d'ardeur et de clarté.

GENERAL INTRODUCTION

“The wide-ranging discussion of possible major monetary reforms will have little effect on the course of events if the present fiat system into which the world has drifted operates in a reasonably satisfactory manner (...). However, the possibility that it will not do so is very real (...). When and if it does, what happens will depend critically on the options that have been explored by the intellectual community and have become intellectually respectable. That - the widening of the range of options and keeping them available - is, we believe, the major contribution of the burst of scholarly interest in monetary reform.”

Friedman and Schwartz (1986, 60–61)

An impressive variety of new forms of money has aroused in recent decades from various groups of people and various kinds of institutions, as a way to challenge or to complement the official, dominant currencies. LETS, Local Currencies, Carbon Currencies or Bitcoins are all examples of this new trend. These currencies are at the heart of a larger movement that questions the present state of money (North 2007), and that discusses how new currencies might help to build resilient local economies (Lietaer et al. 2012), or might foster “good” or “warmer” social relations (Servet et al. 1999). These currencies have generally received enthusiastic support from academics (e.g. Blanc 2018a) and political activists (e.g. Derudder 2014). They seem to offer a grass-roots alternative, which does not depend on states, and which is able to contest the present monetary system (Blanc 2015). Their apparent convenience, their potential

benefits, and the possibility for individuals to build their own alternative monetary system away from the state and from banks might appeal both to citizens willing to build local tools for a more sustainable world (De Schutter 2017) and to those who see massive state-led reforms as failures or as unreachable utopias (Blanc 2018a).

The main aim of this thesis is to inquire whether alternative currencies could constitute desirable alternatives to the present monetary system. It focuses on three broad kinds of alternative proposals: radical proposals, small-scale experiments, and alternative currencies as vectors of contestation.

For some, the alternative ought to be radical. Hayek ([1976] 1990) and Lietaer (2011b), to take just two examples, argue in favour of replacing the present monetary system by a radical alternative. Their proposals differ of course. Lietaer argues for the generalization of alternative currencies (what he calls an “Ecology of money”) while Hayek proposes to abolish all financial and banking regulations and to leave people free to create and use the money of their choice. For others, alternative currencies are small-scale experiments that might nevertheless bring about significant changes for the economy, the environment, or local communities. Several authors contend that small-scale projects can have potentially significant environmental (Seyfang and Longhurst 2013), economic (C. C. Williams 1996a; Peacock 2006) and social impacts (Oliver Sanz 2016). Finally, some praise these currencies not merely for their potential impacts on the economy or the environment, but for constituting channels of contestation of the market economy and of capitalism (Blanc 2015, 2016, 2018a; North 2006, 2007). The main role of these experiments is to generate debate and critical knowledge on money, capitalism and the market economy.

Could these alternative proposals (either modest or radical) constitute desirable alternatives to the present monetary system? This thesis attempts to answer this question by dividing it into three parts.

First, what is “alternative” about alternative currencies? How do they differ from official, or conventional, currencies? Are these differences really significant? This thesis will analyse the differences

between the euro, or the dollar, and the various and numerous new currencies that are popping up around us. It will inquire about their factual differences, but also about the different values that their promoters might embody.

Second, one may ask: why do we need alternatives? This study will consider the main criticisms that the promoters of these currencies address to the current monetary system and whether these criticisms resist scrutiny. It will consider, for instance, whether the present monetary system is inherently unstable, or whether official currencies are driven by market values.

Third, one could wonder whether these currencies constitute an adequate response to these worries. That is the main aim of this thesis. First, that response should be coherent. Therefore, this thesis will study whether the arguments in favour of these currencies are empirically and conceptually solid. It will attempt to make sense of the case in favour of these currencies and to analyse its potential merits and possible drawbacks. Second, an alternative should be desirable. Accordingly, this thesis will examine several possible scenarios, from modest proposals to utopian projects, and consider whether they constitute just and workable alternatives to the present monetary system. Finally, alternative currencies should not miss their target. They should provide an effective response to the challenges that their proponents are raising against the present monetary system. This thesis will attempt to figure out whether this is the case, or not.

The motivation for studying these various proposals is threefold. The first motive derives from the enthusiasm that pertains in many studies on that subject. Despite their relatively marginal weight in the economy, they have nevertheless attracted much praise. Only a few articles (Aldridge and Patterson 2002; Dittmer 2013; Marshall and O'Neill 2018), among the already large literature on the subject, express serious doubts about the relevance of these experiments. Is this enthusiasm justified? Do these experiments deserve praise, indifference, or blame? Second, the discussion of possible alternatives to the present monetary system helps to highlight what

might be wrong with the present state of money and finance, what ought to be changed, and in what direction. As Friedman and Schwartz (1986, 60–61) argue, one of the aims of scholarly research on monetary reform should be to widen the range of respectable options that are available. Even if our ideal may be presently unreachable, it is nevertheless useful to debate about possible routes towards a better monetary system. Are alternative currencies constituting one of these routes? Are they one of the possible and desirable options towards a more just monetary system? Third, the careful examination of these proposals will also lead us into a more abstract discussion of the relationships between money, markets and the state. This thesis will, for instance, consider how one ought to manage monetary policy, whether the state has the right or the duty to intervene, and what the legitimate uses of the state's coercive powers could be.

This introduction aims at giving the reader the tools for understanding the general framework of the thesis and its general aim. The first section attempts to find an adequate definition of money. After a brief review of the literature on the subject, I will propose to define money as a medium of exchange that is widely accepted within a specific community (§1). Then the second section gives a general outlook of the relevant literature on alternative currencies and explains how this thesis relates to it and how it attempts to complement it (§2). The two last sections provide an overview of the main contributions of this work.

The first important contribution concerns the methodology that I will use in this thesis. The methodology itself is not new, but it has not been applied to this subject yet. For some part, this thesis will rely on conceptual analysis: I will propose new conceptual distinctions, analyse several important concepts (e.g. the market) and examine the logical structure of several arguments in favour of alternative currencies. However, the main methodological contribution of this thesis is to provide an ethical analysis of some well-known alternative monetary proposals. It is concerned primarily with how money ought to be designed and how monetary reforms ought to be handled. The method and the aims of political

philosophy differ in important respects from the usual method and the central aims of the alternative currency literature, which, as we shall see, is mostly concerned with empirical analysis. In particular, while empirical analysis generally involves the absence of personal judgments, this thesis explicitly aims at the elaboration of my own judgements in a rigorous way. The third section of this introduction will attempt to describe the particular tools that scholars in political philosophy have developed for the rigorous study of normative issues (§3).

The second main contribution concerns the critique of alternative currencies that I will lay out in the five following chapters. In part, that critique targets the lack of clarity and consistency of several theories and of several arguments in favour of alternative currencies. I will also argue that these currencies either fail to fulfil their objectives or that their fulfilment would entail significant conflicts with justice or economic efficiency. The fourth section of this introduction summarises the general hypotheses that this thesis tries to defend and gives a brief outline of the contributions of each chapter (§4).

1. On money

Several theories compete to explain the nature and the origin of money. This section reviews the most important schools of thought in that domain.

The classical theory of money contends that money is a commodity that serves several functions.¹ Usually, that commodity is chosen for its convenience: because it is durable, divisible, easy to carry, etc. Its main function is to serve as a universal medium of exchange, that is, a medium of exchange that is accepted widely within a given community (Tobin 2008). According to that classical account, money came into existence to fill in a lack that was impeding the natural development of exchanges.² It finds its origin, and its

¹ For exposition of that classical theory, see Mishkin (2013) Samuelson (1968), Tobin (2008). For a critical presentation, see Ingham (2004, chap. 1) and Orléan (2011).

² One of the first economist to consider that theory of the origins of money is Karl Menger (1892).

raison d'être, as a medium of exchange explicitly aimed at solving the problem of barter, or of the "coincidence of wants". In a monetary economy, a producer of apples who is willing to buy potatoes can simply exchange these apples for money, without needing to convince the producer of potatoes to take apples in exchange, which he may not need nor desire. Apart from this essential function, money is also a unit of account, that is, a means to compare different objects according to the same numerical scale; and a store of value, which may be used to transfer value across time.

Most alternative theories are built in opposition to this classical account of the nature and the origin of money (See Ingham 2004 for a review of these positions). All blame primarily the ill-conceived historical origins of money on which the classical theory relies. Most economic historians and anthropologists agree that money arose in societies where they were sometimes no wide-spread economic exchanges as we know it.³ Moreover, they stress that barter never preceded markets, and never constituted a wide-spread kind of economic organisation.⁴ In contrast, they show that barter exchanges arose when market economies collapsed and when money could no longer serve as a reliable means of exchange, because of inflation or devaluation. Another story is therefore needed.

A first possible alternative story is that money is actually a debt token (an I Owe You, or IOU). That theory was originally developed by Innes (1913, 1914). It holds that, before the advent of money, when one person wanted to buy a good to another, the former simply gave the latter a piece of paper, or of wood, or of stone, on which it was written that one owed another a certain quantity of stuff. According to this theory, money represents the debts buyers owe to sellers. It is simply a kind of IOU that is widely accepted within a given community. The main issue of that theory is then to show how wide acceptance of a single debt token might be achieved. Following Innes, several scholars claimed that the state was at the origin of the

³ See Graeber (2011), Lantz (1985), Mauss ([1914] 1969), Orléan (1991, 1992), Rospabé (1993).

⁴ See Dalton (1982), Hart (1986), Humphrey (1985), Servet (2001).

adoption of one single kind of IOU. In theory, each debtor (buyer) could issue its own kind of IOU, if creditors (sellers) accepted it. In practice, however, there is only one dominant accepted IOU which counts as money: the official currency guaranteed by the state. “Chartalist” theorists hold that there can only be one item, one kind of IOU, accepted by all: the one that people are forced to hold in order to pay their taxes (Douglas 2016; Tymoigne and Wray 2008; Wray 1993, 2012). According to them, the origins of money lie in the state’s willingness to impose one currency as a way to enforce its power of collecting taxes.⁵

A second alternative explanation of the nature and origins of money holds that money is a specific kind of institution, one that gives its structure and constitution to market economies. That last strand of literature had a powerful influence on several alternative currency theorists, especially in France (Servet 2012a, 2012a; Blanc 2000, 2007; Alary and Blanc 2013). That theory, which is sometimes called “French Monetary Institutionalism”, holds (in short) that money is the glue that unites society into a “social totality” connected by a dense network of reciprocal social and economic relationships. Without money, there could be no market society as we know it, that is, individuals could not form a coherent social unity organised around market exchanges. This account has been developed mainly by Aglietta and Orléan (1998, 2002), Orléan (2011), Servet (2012a) and Théret (2008, 2009).

Discussing the merits of each approach falls beyond the scope of this chapter. I will simply note that the three theories discussed above all recognise that, in modern societies, money is a medium of exchange that is widely accepted within a specific community. That a medium of exchange is widely accepted means that people recognise the social convention that it can be exchanged for goods and services (and vice versa). People need not accept to sell things for money in all circumstances, of course. The fact that I refuse to sell my kidney for euros does not mean that euros are not money.

⁵ For a more detailed analysis of the Chartalist theory, see my review of Douglas’ book in *Ethical Perspectives* (Larue 2017).

For euros to count as money, people should generally recognise that goods and services can and are regularly exchanged for euros.

“Money” is a quite broad term. This thesis will use the word “currency” to denote something more precise. A currency is a means of exchange that has a unique denomination. Euros and dollars are both money, but they each constitute a different currency. Of course, a given currency may take several forms as a means of payment (notes, coins, etc). What distinguishes a given currency from all others is that it has a unique denomination and that it relates to a unique standard of value. For instance, the euro, the dollar and the Bristol pound are distinct currencies: even if they may take various forms as means of payment, they have a unique denomination and the value of one unit of these currencies is the same for any unit at a given moment in time and whatever the means of payment.

I shall, therefore, define a currency as a medium of exchange that is widely accepted within a community, that has a unique denomination, that relates to a unique standard of value, but that can take several forms as a means of payment. This simple definition may not be complete, but it suffices for the task of distinguishing what money is from what it is not.

2. On alternative currencies: a state of the art

The first chapter of this thesis is entirely aimed at providing an adequate definition of alternative currencies. For now, I will consider that they include all currencies except official currencies such as the euro, the dollar, the yen, etc. This section provides a short introduction to the literature on such currencies.

The debates on alternative currencies find their place within a larger discussion on the possible and desirable reforms of the monetary system. For a century at least, scholars have been debating about such possible reforms (Ingham, Coutts, and Konzelmann 2016). Some are in favour of restricting drastically the prerogatives of banks and of financial intermediaries. Today’s fractional banking system, where private banks create money through lending (in compliance with reserve requirements and regulatory constraints)

could be replaced by a full-reserve banking system. That is the so-called Chicago Plan, first proposed in the 1930s, and which would, in fact, annihilate the power of banks to create money.⁶ Others favour the opposite reform of leaving banks basically free to do what they wish, that is, free banking.⁷ In between these two extremes, theorists have proposed to complement the current system with alternative currencies, sometimes with the aim of eventually replacing it with an entirely different system (Lietaer et al. 2012), but most of the times with the more moderate aim of achieving certain modest objectives.

The history of alternative currencies is already rather long (Blanc 2000). In the 1930s, Fisher (1933) backed Gesell's ([1911] 1948) proposal to supplement official currencies with "stamp scrips", which would have constituted a kind of state-backed currency emitted by small municipalities as a substitute to official money, in times of serious liquidity shortage. Gesell proposed that the value of such currencies would decrease in time so that people would be encouraged to spend it quickly. Around the same period, the WIR was created in Switzerland (Studer 1998): that currency, which is still in circulation nowadays, is only used by small and medium enterprises. It is a form of mutual credit system: businesses can buy each other's products, or make loans, against a promise to repay them in WIR in the future (with some restrictions). These promises become money and circulate within the community of participating SME's.

LETS (Local Exchange Trading Systems), Local Currencies and other contemporary examples of alternative currencies started to spread widely from the end of the 1980s. Blanc (2011, 7–9) ranks alternative currencies according to their order of appearance in time (See also Blanc and Fare 2016, 4–5). First came the Local Exchange Trading Systems (LETS), a kind of mutual credit systems. In LETS, the account of each member is credited each time this member

⁶ See Fisher (1935, 1936), Benes and Kumhof (2012) and Lainà (2015).

⁷ See Dowd (1992, 2015), Glasner (1989), Hayek ([1976] 1990), Selgin and White (1994), White (1984, 1989, 1990). I will come back to the free banking debate in chapter II, §4.

provides a service and is debited each time she receives a service from another member (Servet et al., 1999). Pure time exchange systems, such as Time Banks, constitute the second generation. In these schemes, the value of goods and services exchanged within a network depends on the time necessary to produce them. The third generation contains local and regional currency schemes, such as the Talent or the RegioGeld, which circulate within a confined geographic area. Complex projects, involving both civil society and governments, constitute, according to Blanc, a fourth generation. This includes the NU-project in the Netherlands or the French SOL.

These currencies have mostly been studied in Ecological economics⁸, where scholars have focused on how they may impact the environment and sustainable development, as well as in Social economics⁹, where researchers have studied how they could reinforce social cohesion. Put schematically, the current literature on alternative currencies takes the following shape.

The theoretical side of the literature is mostly concerned with the potential beneficial effects of such currencies on the economy, the environment, or the social sphere. For instance, LETS, Time banks and Local currencies are usually put forward as agents of social integration (Servet et al. 1999) and as drivers of social capital (Lietaer et al. 2012). According to their promoters, these currencies may also exhibit some economic benefits for local or regional economies, as they foster local economic exchanges and encourage the use of untouched economic potentials (Gómez 2009; Gregory 2009; Peacock 2000; C. C. Williams 1996a). Others argue that these currencies could play an important role towards a stable economy

⁸ In Ecological economics, see for instance Brooks(2015), Curtis (2003), Dittmer (2013), Douthwaite (2012), Gregory (2009), Joachain and Klopfert (2012, 2014), Marshall and O'Neill (2018), Michel and Hudon (2015), Seyfang (2009), and Seyfang and Longhurst (2012, 2013). I will discuss these works with more depth especially in chapters I and III.

⁹ In Social economics, see, among other works, Aldridge and Patterson (2002), Blanc (2000, 2006a, 2006b, 2007, 2009, 2015, 2018a), Blanc and Fare (2013, 2016), Evans (2009), Fare (2011, 2012), Gómez (2009, 2018), Kalinowski (2012, 2014), Lee (1996), Meyer and Hudon (2017, 2018), Oliver Sanz (2016), Peacock (2000, 2006, 2014), Williams (1996a, 1996b), Williams et al. (2001), Zanabria and Théret (2007). I will discuss these works especially in chapters I, III and IV.

(Curtis 2003; Douthwaite 2012; Lietaer et al. 2012) or could constitute an important factor in the transition towards a greener economy (Brooks 2015; Seyfang and Longhurst 2013).

The empirical literature, on the other hand, attempts mainly to assess whether these potential impacts are achieved in practice, and to help users and practitioners to increase the efficiency of existing schemes (Place and Bindewald 2015). Some authors focus on concrete cases, such as the WIR (Stodder 2009), some specific LETS (Servet et al. 1999) or Local currencies (Marshall and O'Neill 2018). Others attempt to provide a meta-analysis of these particular cases and to draw general empirical conclusions from them (Dittmer 2013; Michel and Hudon 2015; Seyfang and Longhurst 2013). Michel and Hudon conclude their survey of the empirical literature by stressing that these currencies have almost no effect on the economy or the environment, even if they may help fighting social exclusion and building trust within small communities (Michel and Hudon 2015, 168; See also Blanc 2016, 2018a).

Despite this lack of real significant impacts, the promoters of alternative currencies keep faith in the potential benefits that these currencies could bring about. Some insist on the (temporarily) marginal character of these initiatives, which prevent them from having any wider impact (Michel and Hudon 2015, 168; Blanc 2016). They argue that their impacts could be larger if these currencies had a greater weight in the economy, or if they were supported by governments (Lietaer et al. 2012). Others stress that the aim of their promoters is not primarily to bring about immediate and global change, but, rather, to serve as inspiring examples for possibly more ambitious reforms (Blanc 2016; Bowring 1998; North 2007). These currencies, although struggling to convince people of their usefulness, should be called upon to promote "alternative", non-market practices in which more authentic social relations could regain a predominant place. Finally, many practitioners acknowledge the limitations of the empirical literature (Place and Bindewald 2015). The marginal weight of these currencies in the economy combined with their large variety constitute serious impediments to empirical analysis (Michel and Hudon 2015, 168). Moreover, many arguments

in their favour cannot be tested empirically. Lietaer's argument for an "ecology of money", which would be constituted by a wide range of multiple alternative currencies, or Blanc and Servet's claims that these currencies are promoting some kind of alternative social relations escape any simple form of empirical testing procedure.

It is undeniable that their relatively low weight in the economy partly explains their lack of real social, environmental or social impact. It is equally undeniable that one may find arguments that do not rest on their capacity to impact the economy in a certain way. For instance, they may form alternative "niches" that put into question the desirability of the current economic and monetary systems (Blanc 2018a). This thesis attempts to go beyond their present apparent failures. It wants to take the arguments in favour of these currencies seriously and to see whether they can provide a desirable alternative to the present monetary system.

On that regard, there is a large gap in the literature. The current literature puts the emphasis on describing the role, explaining the impact and studying the nature of these currencies. Comparatively, normative inquiry has not had the same weight. Recently, some authors have inquired into the moral motivations of citizens and organizations supporting such initiatives (e.g. Blanc and Fare 2016; C. Meyer and Hudon 2018). However, their aim was primarily to describe the motives underlying the choices and actions of participants in such schemes. They did not subject the arguments of their proponents to potential objections or to conceptual analysis. Both tasks are important, though. Applying the methods of political philosophy to this field of study is complementary to what sociology or social economics might tell us. The arguments in favour of alternative currencies, as well as the moral and political principles on which they rest, would benefit from conceptual analysis, clarificatory work, critical analysis of assumption, and tests for coherence, that are the trademarks of contemporary analytical philosophy (see §3).

Similarly, political philosophy could benefit from that inquiry. Current debates in financial ethics have focused on desert in financial markets (Herzog 2017b), on central banking and inequalities

(Fontan, Claveau, and Dietsch 2016; Dietsch 2017), on the lack of accountability and transparency of central banks (Buiter 2014; Best 2016; van't Klooster 2018, 2019) and the lack of epistemic virtues of bankers and financial operators (De Bruin 2017). They also concern the right to credit (Hudon 2009; Hudon and Sandberg 2013; M. Meyer 2018) or the damages of debt (Douglas 2016).¹⁰ But virtually no works of political philosophy has focused on alternative currencies. This thesis aims at fulfilling this gap (see §4).

3. Methodology

As Olsthoorn (2017, 153) writes, “analytical philosophy values above all rigour in argumentation and clarity in thinking.” Conceptual analysis seeks to achieve these aims. It attempts to “sharpen our thinking by refining and enriching our vocabulary, structuring our theories and guiding moral judgements.” In practice, it can take several forms.

First, conceptual analysis aims at elucidating complex concepts by “breaking them up into their simpler component parts” (Olsthoorn 2017, 153). In chapter IV, for instance, I will examine the concept of the market by cutting it into pieces and by delineating its core components.

Second, it also means “a detailed examination of [a concept] so as to determine its nature, its structure, or essential features.” (Olsthoorn 2017, 154) In this introduction (§1), for instance, I attempted to define the essential features of the concept of money.

Finding the essential feature of a concept can involve explaining “the meaning of each term in its definition” (Olsthoorn 2017, 163). That is what I shall attempt to do in chapter III when defining “justice” as the “fair distribution of the real opportunities to pursue one’s own reasonable life’s plans”. That inquiry can also entail what Olsthoorn (2017, 164) call “extensional analysis”. First, “specify a general class to which the thing to be defined belongs” (e.g. money)

¹⁰ For a more complete review of recent research in financial ethics, see de Bruin et al. (2018).

and then “state the specific differences that mark it off from other species of the same kind.” This exactly describes the methodology that I will use in chapter I, which aims at delineating the differences between several types of currencies. Finally, finding the defining feature of a concept can involve “disambiguation” (Olsthoorn 2017, 168). Seeking for relevant distinctions can increase clarity and can help to find adequate definitions. Some words have multiple meanings. As we shall see in chapter IV, “reciprocity” has a different meaning in philosophy, in economics or in anthropology. By distinguishing between different forms of reciprocity, this chapter will attempt to make clearer what is meant by the market, fraternity and community.

One important problem of conceptual analysis arises when the terms used to describe a concept are unclear, have more than one sense, or have changed over time (Olsthoorn 2017, 183–84). This problem will be most apparent in chapter IV. As we shall see, Blanc’s and Servet’s definitions of the concepts of community and fraternity are open to interpretation. Olsthoorn’s advice is to “check for theoretical consistency” of the concepts that one is studying (Olsthoorn 2017, 186). One should ensure that the defining features of a concept do not contradict each other. This can involve refining a concept if it is incoherent. One should also seek for “interpretative charity”, or Rawls’ view that one should attempt “to present each writer’s thought in what [one takes] to be its strongest form” (Rawls 2007, xiii).

Rigour in argumentation and clarity in thinking are very important goals. However, there are not sufficient. Clarity and rigour alone do not tell us what principles of justice we should favour, or what policy options we should choose. We need additional tools for answering these questions.

First, it is important to note that defending certain policy choices are not merely a matter of personal opinion. Throughout this thesis, I will be using the personal pronoun “I”. This does not mean that I am merely expressing my personal opinions or personal beliefs. Rather, it denotes that I am defending certain ideas, certain

principles, and certain hypotheses, after having subjected them to a certain number of tests that belong to the standard methodology of political philosophy. The use of the “I” pronoun means that I am responsible for these views and that I submit them to the larger philosophical community.

Rigorous conceptual analysis constitutes the first test. One should not disregard empirical evidence either (Blau 2017, 14). This thesis discusses several claims that have an important empirical component, such as: “local currencies can help localize the economy” (chapter III) or “markets erode community” (chapter IV). Examining whether these claims are empirically valid will constitute an important part of the work in the following chapters (even if, sometimes, the evidence will not be able to provide a definite answer to these questions).

One of the most important tools at my disposal is the method of reflective equilibrium, whose foundations were laid out by Rawls ([1971] 2005). The basic idea of reflective equilibrium is to “bring our principles and judgements into accord” (Knight 2017, 46; See also Van Parijs 1991, 24–25). Knight (2017, 46) defines principles as “relatively general rules for comprehending the area of inquiry” and judgments as “our intuitions and commitments.” The method of reflective equilibrium succeeds when we reach acceptable coherence among these principles and these judgements, either by refining the principles or revising the judgements, or both. As a result, it gives us guidance on what we ought to do, or ought to choose (Daniels 2018).

Not all judgments are worth considering, though. Generally, philosophers only regard “considered judgements” as a reliable basis for reaching reflective equilibrium. These are judgments that are “held with confidence” (Knight 2017, 47) and that “do not display errors of reasoning, such as logical inconsistencies or empirical errors” (Knight 2017, 48). Reflective equilibrium attempts to achieve coherence among our considered judgements and principles by confronting them to objections, to counter-examples, and to possibly counter-intuitive implications of each principle.

For instance, in chapter II, §4.2, I will consider Hayek's principle according to which people have a right to create and to use the currency of their choice. I will confront it to well-considered judgments regarding the consequences of applying this strict principle, such as the increasing difficulty to manage the monetary system or to design adequate redistributive policies. I will also consider possible Hayek's replies to potential objections. My conclusion will be that we should reject Hayek's principle. However, in some cases, reflective equilibrium can also involve the revision of one's own judgments. For instance, as we shall see in chapter IV, the careful examination of several arguments for or against the market will lead me to revise some of my a priori judgments about that institution.

Conceptual analysis and reflective equilibrium set very high methodological standards, which are perhaps unreachable. However, these methods will help me to increase the clarity and the consistency of my reflections, and to defend coherent and well-considered claims.

4. Outline of the chapters

Each chapter contributes to the central aim of this thesis by providing a careful examination of one or several arguments in favour of alternative currencies. Assessing these arguments and these experiments will allow determining whether alternative currencies constitute just and workable alternatives, either in the form of small-scale experiments or in the form of more radical reforms. The first chapter proposes a new way to classify currencies. The second examines the general case in favour of a "plurality of money". The third examines the claims in favour of restricting the use of money locally, within a community, or to certain goods. The fourth studies the link between money and the market. Finally, a post-scriptum focuses on Bitcoin and cryptocurrencies.

In short, this thesis highlights that these currencies are drivers of three potential conflicts. First, the decentralisation of monetary policy and of money creation conflicts with the adequate management of monetary policy (Chapter II). Second, restricting the

use of money locally, or within a community, or to certain goods, conflicts with social justice (Chapter III). And third, communitarian values, which are sometimes at the centre of some alternative currency experiments, conflict with liberal ones (Chapter IV). These conflicts are potential, for they would come into existence only if alternative currencies increased in scope. However, there is no reason to disregard potential conflicts when the case in their favour relies mostly on their potential benefits. As we shall see, while the first conflict applies to all alternative currencies, the second concerns some currencies only, and the third a smaller share of those still.

(1) The first chapter aims at providing a proper background for the discussion of the possible merits and drawbacks of different kinds of currencies. It attempts to build exhaustive and precise distinctions, which make explicit the moral values and policy proposals at stake with each of them. First, it reviews several ways of classifying currencies and studies some problems that frequently appear in this literature. It then introduces three distinctions, in an attempt to account in a satisfactory manner for the normative issues that these currencies are raising. The first separates currencies that are legal tender in a definite area (i.e. official currencies) from those which are not (i.e. alternative currencies). The second separates currencies which depend on a central authority (non-participatory currencies) from those whose management rests in the hands of users (participatory currencies). The third separates universal currencies, which, potentially, can buy anything, from bounded currencies whose uses are restrained according to geographic or communitarian criteria, or to some specific goods.

This first chapter forms the conceptual basis on which the rest of the work will rely. It contains detailed presentations of several kinds of different currencies and introduces distinctions that will be used extensively throughout this work.

(2) The second chapter builds on the first and second distinctions and studies the feasibility and desirability of having multiple currencies circulating in parallel to each other within a given monetary area. It focuses on two different but related proposals to

transform the present monetary system in a radical way. First, it analyses Lietaer's "ecology of money" (Lietaer et al. 2012). Under this scheme, the present monetary system would be complemented by a myriad of alternative currencies circulating in parallel to the main official currencies. Lietaer argues that a plurality of money would yield a more financially stable monetary system, that is, a system that is less likely to be hit by financial crises, and that can better respond to them. Second, this chapter examines Hayek's proposal to abolish all banking regulations and to leave to private companies the task of creating money (Hayek [1976] 1990). Hayek argues that governments and central banks are ill-suited for the handling of monetary policy and money creation. On the contrary, free competition in money would be a better guarantee of price stability. Moreover, he contends that imposing a legal tender or restricting access to the creation of money is illegitimate. According to Hayek, people should be free to create their own money and to use the currency that they deem acceptable.

This chapter discusses whether these arguments are valid, whether they rest on solid normative foundations, and whether they necessarily imply the free development of a plurality of money. Its main conclusion is that these arguments are insufficient to make the case for Hayek and Lietaer's proposals. However, the chapter takes advantage of the inquiry into Hayek's and Lietaer's arguments for drawing some more general conclusions on the proper way to legitimate the state's monetary policy.

(3) The third chapter relies on the third distinction and studies the rationale for the development of bounded currencies. These currencies have one common feature: in order to serve certain purposes, their possible uses are bounded by geographic or communitarian criteria. The central argument in favour of such currencies is that, because their uses are restricted to certain areas, communities or specific goods, bounded currencies can provide beneficial economic, social and environmental effects.

This chapter considers three possible scenarios: a radical scenario, in which all currencies would become bounded currencies

(Douthwaite 2012); the current scenario, in which small-scale bottom-up experiments complement the dominant monetary system; and the more moderate scenario according to which alternative currencies could constitute channels of contestation as well as tools for building critical knowledge about markets and capitalism (Blanc 2015, 2018a).

Chapter 3 reviews critically these three scenarios. Its central claim is that monetary arrangements should conform to social justice, which I shall define as the fair distribution of the real opportunities to pursue one's own reasonable life's plans. It attempts to defend this claim and discusses whether the alleged environmental, social and economic benefits of bounded currencies could not be overridden by some important drawbacks.

On the one hand, I will argue that the radical scenario would severely limit everyone's opportunities, increase the monetary system's complexity while hindering the implementation of redistributive policies. Moreover, the restrictions it imposes on people and on states are disproportionate to their aim, for there exist other policy options that better combine respect for justice and environmental protection. On the other hand, if the scale at which bounded currencies circulate remain low, both their impacts on social justice and on the economy are likely to be insignificant. Therefore, the second strategy is unlikely to bring about any significant benefits. For similar reasons, I will question the view that bounded currencies can be effective channels of contestation.

In sum, even if such currencies are not necessarily conceived to replace entirely our present monetary system, the greater their weight in the economy, the more they would conflict with justice. The general conclusion of this chapter will be that, even if there is no reason for the state to forbid the development of small-scale bottom-up experiments, there is hardly any reason to encourage them either.

(4) The fourth chapter analyses the relationship between alternative currencies and the market. For an important part of their proponents, alternative currencies are part of a larger protest against the "market system" or the "market ideology" (Blanc 2015). The

chapter first defines the market and then shows that proponents of alternative currencies are often raising at least two distinct arguments against it. The first relates to how markets erode communitarian ties, that is, the set of social obligations entailed by membership to a group. The second argument stresses how the market motive conflicts with fraternity, or the fact that I serve you because you need it, nor because I am expecting a reward.

The first aim of this chapter is to make these arguments more explicit and coherent. Second, it attempts to determine whether these arguments are valid. Finally, it inquires whether alternative currencies can really provide an alternative consistent with them. Regarding the first argument, this chapter raises serious doubts about the relevance of reducing the scope of the market in order to safeguard some place for communities. On the contrary, we should cherish the place that the market gives to freedom from personal ties. Regarding the second argument, the conclusion is that, even if one can have good reasons to oppose self-interest, these reasons are insufficient to ban self-interested motivations entirely. Finally, regarding money, the conclusion is that, first, the prevalence of universal money does not necessarily entail the prevalence of the market; and, second, that alternative currencies do not always offer a credible response to the criticisms their proponents are raising.

(5) Finally, a post-scriptum concentrates on one particular alternative currency, which has attracted much attention recently: Bitcoin. It allows to consider, with a fresh look, several issues that were raised in other chapters, especially on the possibility of decentralising the management of monetary policy. This post-scriptum discusses four arguments in favour of Bitcoin's adoption. Its promoters contend that:

- (1) Bitcoin can constitute a more stable currency than conventional state-sponsored money, by taking monetary policy out of the government's hands;
- (2) Bitcoin can provide a more secure and efficient payment system, compared to a system relying on trusted third parties.

- (3) Bitcoin can dispense with the need of coercive institutions such as states and central banks, by achieving a decentralised securing of transactions through cryptographic proof.
- (4) Bitcoin helps protect users' privacy against abuse of state power through government surveillance

The post-scriptum attempts to provide solid philosophical foundations to these arguments and to show how they relate to the principles of justice developed by libertarians and neoliberal economists. Then, it assesses whether Bitcoin can effectively fulfil these expectations. The conclusion is that it is dubious that Bitcoin, as it is now, can deliver on these promises.

CHAPTER I: A CONCEPTUAL FRAMEWORK FOR CLASSIFYING CURRENCIES

1. Introduction

Multiple new kinds of currencies have appeared in the past decades as a way to challenge or to complement the official, dominant currencies. LETS, Local Currencies, Carbon Currencies or Bitcoins are all examples of this new trend. These currencies are at the heart of a larger movement that questions the present state of money (North 2007), and that discusses how new currencies might help to build resilient local economies (Lietaer et al. 2012), or might foster “good” or “warmer” social relations (Servet et al. 1999).

One of the recurring issues in the literature on alternative currencies is to identify adequate ways to classify these currencies (Blanc 2011). Indeed, even if they all constitute a kind of money, they are so numerous and diverse that preliminary classifications appear necessary. Until now, classifications have been mostly designed to discuss the nature of such currencies (Blanc 2011) or their empirical impact (Place and Bindewald 2015). However, few works have studied the ethical issues they raise, despite their importance for understanding alternative currencies. Moreover, existing classifications are often unable to demarcate clearly how currencies differ from each other. This chapter aims at fulfilling these gaps and proposes a classification that demarcates currencies according to

how they relate to three crucial normative issues. Its aim is to show, for every type of currency, and as unambiguously as possible, to which side of these controversies it lies.

The first issue concerns the legitimate use of the state's coercive power over money. In many countries, the state compels people to accept its legal tender in payment. This could be different, though. People could use currencies, such as Bitcoin or Local currencies, which nobody is forced to accept in payment. Accordingly, this chapter draws a first distinction between currencies that are legal tender from those that are not. Then, this chapter turns to the issue of citizen's participation in monetary policy. It separates currencies whose creation and circulation are handled under the control of users (such as LETS or Local currencies) from those whose management is independent of users (e.g. the euro). Finally, the last distinction relates to the question of whether money's purchasing power should be restricted according to some specific criteria (within a local area, for instance). Accordingly, it distinguishes currencies that may serve as a universal means of payment from those whose uses are limited according to a certain domain.

Providing a precise description of how currencies differ may greatly help to structure the ethical discussions on their benefits and drawbacks. On the one hand, as Hodgson (2019) argues, finding precise demarcating criteria is necessary to ensure mutual understanding and efficient communication within a scientific community. Before studying and perhaps evaluating a group of objects, one needs to see how it differs from all other groups as precisely as possible (Hodgson 2019, 207). If one cannot determine how one type of currencies differs from another, how could one assess its impacts on justice or on the economy, or simply recognize its core traits? On the other hand, demarcating criteria cannot be arbitrary. We should seek for relevant criteria that can help scientific inquiry (Olsthoorn 2017, 153–54). Accordingly, this paper proposes criteria that demarcate currencies according to how they relate to specific normative issues. Its aim is to complement existing classifications, which are often unable to provide a suitable background for the ethical analysis of alternative currencies.

However, building relevant classifications in social sciences is a complex task. Currencies are social constructs (Ingham 2004), not natural kinds. They are not independent of social facts, from how people perceive them and judge them (Hacking 1991; Searle 2005, 2017). It may, therefore, be impossible to build purely descriptive classifications, detached from people's perceptions and judgements. Moreover, definitions often have "fuzzy boundaries" (Hodgson 2019, 209) that prevent any precise demarcation. These two problems are not overwhelming, though. Even if crystal-clear precision is out of sight, this remains a valuable ideal. That reality is fuzzy should push us towards more conceptual clarity, not less (Hodgson 2019, 209). Similarly, when facts and value judgments are intertwined, one should seek for definitions and classifications which make explicit the normative values at stake, so that these discussions can happen on fair terms (Olsthoorn 2017, 174).

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

2. Classifying currencies: a brief review

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

Some authors propose complex classifications, which rely on multiple dimensions and sub-dimensions. Lietaer and Kennedy ([2004] 2008, 217–42) introduce a multi-layered classification, which relies on five dimensions: the purpose (or the goal) each currency

pursues, the specific form that it takes (coin, note, electronic accounts, etc), the function it serves (means of payment, store of value, unit of account), the way it is created, and its cost recovery mechanism. Joachain and Klopfert (2012) Martignoni (2012) and Diniz et al. (2017) make similar attempts towards complex full-fledged classifications. Their criteria include the purpose, the basis of trust (kind of backing mechanism), the issuance mechanism, the cost recovery mechanism, etc. However, describing currencies using so many dimensions and sub-dimensions creates some problems. Most currencies pursue several purposes simultaneously, carry out several functions, take multiple forms, and recover their costs from various sources of funding. Finer-grained and simpler analysis is therefore necessary.

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

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

Most classifications, however, rely on the purposes (or objectives) at the centre of each currency. A first reason is that many advocates of such currencies often describe them as fulfilling specific goals. Lietaer and Kennedy ([2004] 2008), for instance, in their long discussion of various examples of alternative currencies, insist constantly on their aim and potential specific benefits. Similarly, Fare stresses the potentials of each kind of currency: supporting local economies or fostering energy efficiency, among other goals (Fare, 2012, p. 1). Blanc (2018a, 4) defines alternative currencies as those whose aim is to realise an ethical project and ranks them according to their intended purposes. That project can be to promote social cohesion, local exchange or emancipation from the state (Blanc 2018a, 13–28). Insistence on the goals of these currencies naturally leads to classifying these currencies according to their stated purposes. A second reason is linked to the growing importance, within the alternative currencies’ research field, of impact assessment programs (Dittmer, 2013; Michel and Hudon, 2015; Seyfang and Longhurst, 2013). Consequently, Place and Bindewald (2015, 155) have argued that “it is necessary to firstly focus on objectives and purpose before any other typological differentiation, in order to evaluate CCs against their own and diverse targets.” Several authors, therefore, propose a classification based on the purpose embedded into alternative currencies.

Lietaer and Kennedy ([2004] 2008, 217–42) separate currencies according to three different purposes: legal tender, for-profit currencies and social (not-for-profit) currencies. Tichit et al. (2016, 33) arrive at the same criterion (profit/non-profit) through a textual analysis of web data on alternative currencies. Blanc (2007) proposes a similar classification based on the “logic” or “motive” behind each currency. Currencies may be linked to a political motive, a profit motive or a civic motive (Blanc 2007, 32).¹¹ The first kind of currencies relies upon governments, municipalities or other political authorities. The classical examples of such currencies are the euro, the dollar but also local currencies created by local governments. The second kind falls within the domain of private firms. Loyalty schemes, such as Air Miles, belong to this second category. Finally, Blanc calls the currencies that have a civic motive “social currencies”. Their purpose is to localize the economy, to foster local exchanges and, simultaneously, to transform the nature of exchanges into a social relation less impregnated by market values. According to the author, a currency is a social currency if it fulfils these three aims, and most importantly the third one (Blanc 2007, 38–39).

In more recent articles, Blanc clarifies his three-fold distinction (Blanc 2013, 2018b). Following Polanyi (1957, [1944] 2001), he describes three spheres to which a currency can belong: the “redistributive” sphere (the state’s sphere, which includes “public” currencies), the sphere of “exchange” (or the market’s sphere, which includes “for-profit” or “business” currencies) and the sphere of “reciprocity”, which covers relationships within the family and the community. “Social” or “associative” currencies belong to the later sphere. Blanc (2011) distinguishes between three classes of such currencies (which he also calls “civic currencies”), according to their specific aim. “Local currencies” are linked to territorial local projects (such as fostering “local resilience”). “Community currencies” point towards community projects that foster positive social relations and social empowerment. Finally, “complementary currencies” are

¹¹ “Les monnaies à logique politique », « les monnaies à logique lucrative » and « les monnaies à logique citoyenne ». My translation.

designed for economic purposes (such as protecting the local economy). Blanc (2011, 6) makes clear that “two cases should definitely be removed from an analysis of CCs”: national currencies and for-profit currencies established by firms. He justifies this exclusion by emphasizing that “sovereignty, as well as profit motives, do not respect what can be considered a series of major distinctive features of CCs: they are designed and implemented mostly by civil society, mostly locally and grassroots, and mostly in a democratic way” (Blanc 2011, 6).

3. Classifying currencies: new foundations

The previous section reviewed several attempts to build coherent classifications. This section argues that these classifications are unable to account adequately for the ethical issues that new kinds of currencies are raising. These include the legitimate use of the state’s coercive power over money, the just balance of citizens’ involvement in the regulation of money and the possible limits to money’s purchasing power (North 2007; Lietaer et al. 2012). We need a new classification that does that job clearly and unambiguously. In this section, I will argue that a classification will satisfy these aims if it can show, for every possible type of currencies, and as unambiguously as possible, to which side of these controversies it lies.

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

or whether the creation process at the root of local currencies achieves greater citizens' involvement than Bitcoin's.

Blanc's more recent attempts do not provide a better tool either. He delineates three spheres to which a currency can belong: the public sphere, the market sphere and the civic sphere. Which sphere is more legitimate? Blanc's criteria do not allow to answer this question. A public currency might be more legitimate than a civic currency. The euro might be reformed in order to increase its legitimacy and local currencies may be managed by a few unelected bureaucrats. But the reverse might be true as well. His distinctions are also unable to delineate how currencies relate to other values. For instance, both public and civic currencies may be used to support charities, to finance investment in renewable energy, or to fund pension systems. Similarly, both public and civic currencies might be a suitable tool for corruption or tax evasion. These examples show that Blanc's categories, by themselves, are of little use for normative inquiry, as they are unable to classify currencies according to some key normative issues.

This section discusses three prerequisites that will greatly help to build such a classification. First, any classification should make explicit the moral values that underlie each currency, or the project behind each currency. The literature and the world of alternative currencies is pervaded by ethical and philosophical issues. Different conceptions of how money should be created or regulated are opposed to each other and would need to be dealt with in a clear and transparent way. Second, we need an exhaustive classification that can apply to the entire set of all possible currencies. That set constitutes what Hodgson (2019, 211) calls a "population", that is "social phenomena that exhibit some degree of communality and some degree of diversity". As we have seen in the general introduction (§1), all currencies are social constructs that count as means of exchange within a given community. They nevertheless differ in important respects, which create a need for classification. Any currency (that is, any item in the set) should be able to find a place within the classification. One cannot ignore any of them arbitrarily. Third, the classification should, as far as possible,

delineate unambiguous differences between different types of currencies. Even if finding crystal-clear delineating criteria might be impossible, clear definitions are an essential part of any scientific inquiry.

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

These tendencies have had a certain performative effect on the public debate, so that many identify alternative currencies as “good” money and official currencies as “bad” money.¹² However, despite this abundance of normative statements, most authors do not always clearly put forward the normative principles they seem to support and do not provide an argued defence of them. Most of the time, it is quite unclear what these normative values might actually be. For instance, Blanc (2007, 38–39) defines social currencies as currencies that help to localize the economy while transforming the nature of exchanges into a social relation less impregnated by market values. However, what would be the nature of “good” social relations, or of

¹² See for instance the movie “Demain” (Dion and Laurent 2015) and the findings of Blanc and Fare (2016).

“non-market” values, could be developed much further.¹³ This lack is certainly a consequence of the emphasis that the current literature puts on describing the role and the impact of these currencies (Place and Bindewald 2015). Comparatively, normative inquiry has not received the same level of attention. However, the fact that normative questions impregnate the literature creates an urgent need for clarification of the underlying moral values.

(2) Second, we need exhaustive classifications that apply to the entire set of all currencies and that show how one particular type of currency differs from all other possible types (Hodgson 2019). Unfortunately, many classifications tend to disregard some currencies that circulate alongside official currencies, without providing any explicit justification for doing so. Classifications based on generations ignore many types of currencies that do circulate alongside the official currencies (virtual currencies and commercial currencies, among others) (Blanc 2011). Similarly, Seyfang and Longhurst (2013) and Dittmer (2013) do not provide any justification about the criterion that allows keeping such currencies away from their impact evaluation studies. After all, even the euro and the bitcoin system have an environmental impact, which is what they want to measure.

Actually, the problem is twofold. First, these classifications often rely on an arbitrary selection of currencies. Their creators do not provide a reason for the exclusion of some currencies or for the inclusion of others. It is hard to see how currencies differ (and, especially, how they differ from the euro or the dollar) if some are arbitrarily excluded. Second, their lack of exhaustiveness may lead them to ignore the common characteristics and, possibly, the common drawbacks and benefits, of similar currencies. To illustrate these two points, let me take the example of local currencies and of Bitcoin, which, at first sight, may appear at odds with each other.

Bitcoin is a digital currency that is managed on a decentralised basis by (anonymous) users and protected by a set of cryptographic

¹³ See Chapter IV, §2 for an attempt in that direction.

protocols. Sometimes coined a “libertarian dream” (De Filippi 2014), it has however much in common with other kinds of alternative currencies. Both bitcoins and local currencies may escape government’s control. Both give users the possibility to intervene in the creation of money. Moreover, Bitcoin is experiencing many troubles that may well hit other kinds of currencies. It is not exempt from fraud and legal issues (Gruber 2013), which may also be acknowledged by supposedly “cleaner” currencies. As for Bitcoin, local currencies’ supporters may be tempted by tax evasion. For instance, *Minuto*, a Belgian local currency, is praised by its promoters because it is exempt from taxation (Réseau Minuto 2016). Comparing Bitcoin and Local Currencies could, therefore, reveal some relevant facts or ideas concerning those legal issues. One could lose an opportunity for new insights by ignoring their similarities. Including all kinds of currencies into one classification is therefore much useful, and avoids excluding currencies that may be of interest even for an alternative currency theorist.

(3) Third, classifications need to draw precise distinctions between currencies. Ideally, they should point at unambiguous differences between them. Unfortunately, when separating criteria are provided, they often turn out to be unable to delineate precisely what distinguishes alternative and official, national, currencies. Blanc, for instance, argues repeatedly that only “democratic” and “grassroots” currencies should count as “social” or “civic” currencies (Blanc 2007, 38–39, 2011, 6, 2013, 261–62). He stresses the importance of the role of “civil society” in the definition of such currencies. He opposes these currencies to those belonging to the state’s sphere (which he calls “public” currencies) and to those belonging to the commercial sphere (“for-profit” currencies). However, some private for-profit currencies such as the WIR have a grassroots and democratic character. What counts as “democratic” and “grassroots” is, after all, subject to various interpretations, whose Blanc’s writings do not allow to disentangle. The WIR may be seen as an example of a grassroots currency, created by small and medium enterprises. This Swiss currency works as a complement to the Swiss Franc (Stodder 2009). It allows small and medium enterprises to exchange with each

other and to get loans from the WIR Bank. Clearly, the WIR, while grassroots and local, is not “social”. Its purpose is to increase trade and investment opportunities for Swiss companies. Should it, therefore, be included or excluded from what Blanc calls “social” currencies? The “democratic” and “grassroots” character of CC’s does not provide a clear answer to this question. Similarly, some “public” currencies may be organised democratically. We could give a more participatory nature to the management of the euro (Dietsch, Claveau, and Fontan 2018). Would it then fall in the state’s sphere or in the civic sphere? Each sphere does not neatly exclude the other. We would need an additional criterion to distinguish effectively “social” currencies from other kinds of currencies.

Classifications that rely on the stated purpose of each currency provide a further example of the difficulty to disentangle criteria from each other. As we have seen, many authors separate “alternative” currencies from official currencies on the basis of the “social”, “non-profit” or “environmental” purposes the former are supposed to pursue (Blanc, 2007, 2011; Lietaer and Kennedy, 2008; Place and Bindewald, 2015; Tichit et al., 2016). It is undeniable that these various purposes constitute a large part of the attractiveness of these currencies, which may explain their central importance in the literature. As Blanc and Fare (2016, 5), for instance, argue: “specific values constitute, in fact, the *raison d’être* of local currency schemes”. Each is linked, according to Blanc (2018a, 4), to a specific ethical project. Unfortunately, though, these purposes do not draw a clear-cut distinction between currencies. First, “promoting” certain values is different from effectively realizing these values. A currency designed to promote “warmer” social relations or “greener” exchanges may fail to do so (Michel and Hudon 2015). A “stated” purpose is not a “realised” purpose. Second, most currencies have numerous stated purposes, so that they can fall in numerous different categories. Third, and most importantly, the euro and the dollar are also effective tools for improving social relations or empowering poor and marginal people. After all, transfers in euro finance our health care system, our social security system, our schools and universities. All these schemes clearly constitute important drivers of

social cohesion. Even if this is not its stated purpose, should not we consider, therefore, that the euro is a “social” currency? National currencies, too, can have social purposes. They are not univocal drivers of market values. Fourth, the creation of the euro had several purposes. According to the Delors Report for the European Council (1989), these objectives included enhancing European cohesion, improving monetary policy coordination and increasing monetary stability. The euro, in other words, is supported by an “ethical project” (whether or not this project is a success is open to doubts, of course).

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

To conclude this section, let me say that the alleged attractiveness of certain new forms of currencies should not exempt us from a rational and fair discussion of their merits, based on facts and well-defined normative arguments. We need a clear map if we want a clear debate. A classification provides such a map if it can tell, for all currencies and as clearly as possible, to which specific policy proposal each currency corresponds. The following section illustrates how some new distinctions may open the possibility for an argued discussion of some important normative issues.

4. How currencies differ: a proposal

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

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

4.1. Official versus Alternative Currencies

A first distinction can be made between currencies which are defined as a legal tender in at least one country, and those which are not. According to the Oxford English Dictionary (2018), a legal tender is defined as all means of payment “which a creditor is bound by law to accept when tendered in payment of a debt”. The US Code definition adds that these means of payments should be accepted

“for all debts, public charges, taxes, and dues”.¹⁴ This first distinction sets official currencies apart from alternative currencies.

Though it may seem overly simple, this distinction is essential to understanding alternative monetary proposals, as it emphasises a crucial difference in legal regimes for different kinds of currencies: are people forced to accept a currency in payment, or not? Within the literature on alternative currencies, most authors generally consider that the use of alternative currencies is and should remain voluntary, without threatening the dominance of official currencies (e.g. Blanc 2018a). Others are more radical and call for the abandonment of all legal tenders. Hayek ([1976] 1990), for instance, proposed to deregulate the banking and financial systems and to allow private actors to emit their own currencies. In connection with this debate, the first distinction differentiates currencies according to whether a political authority uses its coercive power to enforce the use of a currency, or not.

The euro and the dollar are obvious examples of official currencies. The euro is legal tender in the EU (see EC Treaty, art. 128) while the dollar is legal tender in the US (see US Code, 31, §5103) as well as in other countries, such as Ecuador (CIA 2018). Alternative currencies, on the other hand, include all the means of payments that are not considered as a legal tender in at least one country. This means that vendors or tax authorities are not bound to accept them in payment. In this category, I include Local Exchange Trading Systems (LETS – systems of mutual credits), Local Currencies (such as the Bristol Pound, valid only in a certain area), Carbon Currencies (aimed at reducing carbon emissions), regional Currencies (valid only in a given region), digital and cryptocurrencies (such as Bitcoin), commercial currencies (Air Miles), Meal vouchers, and the likes.

¹⁴ Some countries have limited legal tender instruments: in Britain, for instance, the 50 pence piece is legal tender only for sums of up to 10 pounds sterling. These small exemptions do not threaten the more general rule that sterling pounds are official currency in the UK.

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

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

In sum, even if alternative currencies are most of the time complementary currencies, designed to complement official currencies in a number of ways, they may also be competing

currencies. As we shall see in the next chapter, Lietaer's defence of an "ecology" of money illustrates the first possibility: he imagines a currency world made of multiple parallel currencies complementing each other harmoniously (see chapter II, §3). Hayek, on the contrary, is a fierce advocate of the free competition of currencies, which will select the best currencies and eliminate the worst (see chapter II, §4).

4.2. Participatory versus Non-Participatory Currencies

This section deals with the issue of monetary policy, which has raised intense debates in recent years, most notably after the 2007 financial crisis (Turner 2016). Who should have the power over monetary policy? Should monetary policy be independent of the political realm, or regulated through it? Finding a precise criterion that takes into account the "political" dimension of money is not an easy task. In this section, I propose to differentiate currencies according to whether users can be involved in their management. Participatory currencies give the possibility to users to take part in their management, while non-participatory currencies forbid this possibility. That involvement varies in degree. Some participatory currencies give more power to their users than others. Some currencies are strongly participatory while others exhibit a lower rate of participation. The strength of participation should be evaluated on a one-to-one basis, as it differs for every participatory currency. That task goes beyond the purpose of this chapter.¹⁵ Users' involvement may also concern different types of decision processes. Users can be involved in the decision process regarding the management of the issuance, circulation, or distribution of participatory currencies. On the contrary, non-participatory currencies keep users away from their governance: the degree of involvement is equal to zero.

Several previous classifications were meant to account for this same "political" dimension of money (Blanc 2007, 2011; Hart 2006, see section 2 above), but I showed that they were unable to take into account that important normative issue. In a similar vein, some

¹⁵ Every participatory currency is participatory in its own way. Below, I study participation in the management of LETS and Bitcoin. For a study of collective decision making in other alternative currencies, see Meyer and Hudon (2017).

authors differentiate currencies according to their mode of creation (Bjerg 2017; Diniz, Kampers, and van Heck 2017). However, for most currencies, money creation takes a complex pattern, which hinders the task of building clear-cut definitions. Take the cases of Bitcoin and the euro. New bitcoins are created each time a transaction takes place and is verified by “miners” through a complex decentralised system (De Filippi 2014). Determining who, among the miners, the traders, or the decentralised system, is at the source of money creation is not an easy task. The case of the euro faces similar issues. Several actors take part in its creation process. New euros may take the form of central bank issued money (either reserves or cash), but most of it is created when a private bank makes a loan to a private firm or to individuals (McLeay, Radia, and Thomas 2014). However, banks are subjected to complex regulations from the states and central banks. Not only are there multiple institutional creators of money (central banks and private banks), but each creator is dependent on the other. Private banks depend on central banks and on states, which set up regulatory frameworks applying to the financial sector. And central banks depend on private ones as transmission channels for monetary policy (Dietsch, Claveau, and Fontan 2018). That mutual dependence makes difficult to disentangle precisely who (Private banks? Central banks? States?) is at the source of money creation. This is a complex question, which goes beyond the scope of the chapter.¹⁶

The second distinction, therefore, takes a different route. It delineates two additional categories: Participatory and Non-Participatory currencies. The ability of users to alter the management of a currency determines the category to which this currency belongs. Non-participatory currencies do not give this possibility to their users, contrary to participatory currencies, which allow them to take a part in their management, that is, in decisions regarding issuance, interest rates, conflicts between users, and similar issues.

¹⁶ Some authors define money as a “creature of the state” (Lerner 1947), others contend that it is merely a debt token (Graeber 2011). Some even defend that it is the demand of credit, not the supply of loans, which lie at the source of its creation (Lavoie 1984). I stay agnostic on this issue.

This distinction relates to an emerging literature, which discusses participation by connecting alternative currencies with the commons (C. Meyer and Hudon 2017, 2018). Based on Fournier's framework (Fournier 2013), Meyer and Hudon show that the commons literature can enlighten our understanding of alternative currencies. First, many alternative currencies (such as Time dollars, LETS, or Trueque) are organized in common. They are "good examples of collective governance or management" (C. Meyer and Hudon 2017, 640). "Organizing in common" is exactly the distinction that demarcates participatory from non-participatory currencies. Meyer and Hudon focus on several distinct participatory currencies and show how they exhibit different levels of participation (or "commoning"). Second, they claim that these currencies are "a form of organizing of the common", which means that "a form of collective belonging and identity is created by these monetary institutions" (C. Meyer and Hudon 2017, 640). They argue that they "create new forms of monetary organization, collectively shaped and promoting both individual and collective interests" and that their objective is "to change the nature of exchange and the notion of economic community by emphasizing on cooperation and responsible user behaviour" (C. Meyer and Hudon 2017, 641). As I have showed in §2, one cannot deny that it is their purpose to strengthen communities. However, I argued that purposes cannot form a sound basis for classifications. Moreover, some authors have cast doubts on the real capacity of these currencies to foster a sense of belonging (e.g. Aldridge and Patterson 2002). I shall discuss the link between alternative currencies and community in Chapter IV, below. Finally, these authors show that these currencies do not fit well with the third dimension of the commons: organizing for the common. That dimension refers to "the collective use and consumption of shared resources" (C. Meyer and Hudon 2017, 643). They acknowledge that these currencies allow to buy private goods, and are scarcely used for the consumption of shared resources.

As I argued above, different participatory currencies often exhibit different levels of participation, which might take different forms. Let me take two examples: LETS and Bitcoin. LETS are managed by

the association of all users. Even if some LETS do possess a committee in charge of the daily management of the system, it is usually accountable to all users (Servet et al., 1999). However, most often, such authorities do not exist, and the management of participatory currencies is open to all users. Bitcoin, for instance, is a participatory currency without any central management. The system operates as a peer-to-peer network on a decentralised basis, and each user can participate in its creation and in the control of its operations (see Post-Scriptum, §2).

These examples help us to refine the definition of participatory currencies. First, users need not use the possibility that is offered to them to participate, but it must be open to them for a currency to count participatory. For instance, most Bitcoin users do not participate in its development, but they could do so if they wanted to. Moreover, users' participation may take various forms. In LETS, users take part in the training of new members or in the resolution of conflicts between members. Similarly, Bitcoin users can participate in the development of the protocol, or in the creation process (mining). Finally, the decision process is necessarily a collective process. Participatory currencies give to *all* users the possibility to participate, and this involves necessarily a form of collective decision making. Some participatory currencies have a board of directors, who take in charge their daily management (Local currencies, LETS). Others do not have any central governance process (Bitcoin, see Post-Scriptum, §4.3). However, for a currency to count as participatory, its board of directors (if it exists) must always be subordinated to the effective control of actual users, which have together the power to alter such central institutions and to take part in the management of the currency.

On the contrary, the management of non-participatory currencies does not involve users. All forms of participation are excluded. Following Hirschman's famous distinction, users can only express their discontent through "exit", not "voice" (Hirschman 1970). They can stop using these currencies, but cannot influence their governance. The euro and the dollar, for instance, are managed by a central bank (the European Central Bank and the Federal Reserve,

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

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

4.3. Universal versus Bounded Currencies

Universal and bounded currencies constitute the fifth and sixth categories. Bounded currencies are currencies whose possible uses are limited according to some geographic area (i.e., they are valid only for goods produced locally) or to communitarian criteria (i.e., they are valid only for exchanges between members of a community), or to specific goods or services (e.g. Meal vouchers and Air Miles). The relevance of this definition springs from the fact that these limitations are at the core of the arguments in favour of these currencies. These limitations are supposed to bring about certain

benefits, in line with certain purposes. For instance, because they circulate only locally, local currencies are supposed to generate a healthier economy and stronger local communities (Curtis 2003; Gregory 2009). Similarly, LETS are designed to reinforce solidarity between members (Seyfang 2002). In a different vein, the restrictive nature of Air Miles, which can only buy products of a specific airline company, is meant to retain loyal customers and constitutes one important instrument of airlines' marketing strategy.

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

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

Note, moreover, that this distinction is different from Polanyi's famous concepts of all-purpose and special-purpose money (Polanyi 1957, 264–66). Polanyi is differentiating currencies according to the

three traditional monetary uses (means of exchange, store of value, unit of account). He shows that, historically, some kinds of money – which he calls special-purpose money – have served only one of these uses. For instance, some were only used as units of account, but could not be used as means of payments. Polanyi gives the example of the Assyrian and Babylonian accounting system, which did not rely on money conceived as a means of payment, but only as an accounting mechanism (Polanyi 1957, 265). On the contrary, all-purpose money is suited to all functions.¹⁷ My distinction, however, does not consider what functions a currency may fulfil but rather whether geographic or communitarian criteria restricts its possible uses.

The obvious examples of universal currencies are the euro, the dollar, and other national currencies. LETS, Local currencies, the WIR, Meal vouchers and commercial currencies are all examples of bounded currencies. The purchasing power of local currencies is bounded according to some geographic area (the territory of a town). LETS, the WIR, and Time Banks are valid only within a specific community of users. And Air Miles and Meal Vouchers can only buy specific goods. It is important to notice that, in all cases, these limitations are justified on the basis that they could impact the economy or the environment in a beneficial way. For instance, LETS, Time banks and Local currencies are usually put forward as agents of social integration (Oliver Sanz 2016; Servet et al. 1999). According to their promoters, these currencies may also exhibit some economic benefits for local or regional economies (Gregory 2009; C. C. Williams 1996a). Others think they may play an important role in a sustainable economy (Curtis 2003; Lietaer et al. 2012).¹⁸ Some bounded currencies also play a role in the design of redistributive policies in many countries. For instance, Meal vouchers, which give access to a limited basket of goods, form an important part of poor relief policies in the US (Currie and Gahvari 2008). Finally,

¹⁷ See Blanc (2013), Kuroda (2008b) and Servet (1993, 2007), for a contemporary reconsideration of Polanyi's ideas on all-purpose and special-purpose money.

¹⁸ Even if recent empirical studies have found almost no link on that respect (Marshall and O'Neill 2018; Michel and Hudon 2015).

commercial currencies, such as Air Miles, are part of the firms' marketing strategy.

Many participatory and alternative currencies are also bounded currencies, but not all are. Local Currencies, for instance, are alternative, participatory and bounded currencies. They are valid only as a means of exchange for specific goods and services in a specific area. Bitcoin, on the contrary, is not a bounded currency, even if it constitutes an alternative and participatory currency (Kaplanov 2012, 141–43). Clearly, Bitcoin is not a legal tender and is, therefore, an alternative currency. Moreover, users can participate in its creation. It is, therefore, a participatory currency. However, Bitcoin is not a bounded currency. One could potentially buy any sorts of goods or services using Bitcoins. Bitcoin can potentially be a universal means of payment and its uses are not limited in any way. Of course, Bitcoin, in practice, cannot buy everything. Only a few companies accept it in payment for goods and services. However, this is not a consequence of Bitcoin's architecture or purpose, but a result of its lack of acceptability. Bitcoin, therefore, retains its universal character because, in theory at least, it allows people to buy anything that is for sale.

Finally, an important issue concerns the extent to which bounded currencies can be converted into universal currencies. Meal vouchers, Air Miles and most LETS and Time Banks currencies simply cannot be exchanged for universal currencies, while many local currencies can, but at some cost, which restrains their convertibility. Within the category of bounded currencies, we could, therefore, think of a continuum of currencies, where the place of each currency on the continuum would depend on its capacity to be converted into universal money.¹⁹

¹⁹ As we shall see in chapter III, §2, convertibility is at the heart of a trade-off between what these currencies can achieve and how they might conflict with justice.

4.4. Summary

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

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

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

Table 1 – A comparison of different currencies.

As I showed earlier, the authority is the ECB for the euro, the FED for the dollar, Voucher and Airlines companies for Meal vouchers and Air Miles, and State agencies in the case of carbon currencies. The euro, the dollar and Bitcoin are universal currencies, which may potentially buy everything, whereas the others are bounded according to some criteria. Meal vouchers and Air Miles are limited to particular goods provided by specific companies (Meals and Airlines tickets). Carbon currencies are limited to goods

beneficial in some degree to the environment. LETS and Local currencies are both limited to a certain area or a certain community of users. The validity of the WIR is limited to the goods and services produced by Swiss SME's which belong to the scheme, and each member (or "cooperator") is entitled to one vote in the WIR general assembly and has the right to stand for election to the board of directors (WIR Bank 2018).

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

The first distinction relates to the problem of determining the legitimate use of the state's coercive power. This is a very old question in political theory, which goes back at least to Locke ([1690] 1965) and which has recently been raised by Raz (1986), Rawls ([1993] 2005) and A. Buchanan (2002). For instance, according to Rawls' influential account of legitimacy, an authority is legitimate if its coercive political power is justified by reasons that people can reasonably accept. Regarding our present inquiry, the problem is twofold. First, it concerns the extent to which the state can legitimately compel people to accept one or several currencies in payment (i.e. legal tenders). Second, it regards the issue of whether it can forbid people from emitting their own currencies. As we shall see in chapter II, these issues are central to the literature on alternative currencies (Hayek [1976] 1990; Lietaer et al. 2012).

The second distinction relates to the issue of who, or which institution(s), should have the power over monetary policy. Should the people be involved in monetary policy decisions? Through which

participatory process? Or, on the contrary, should central banks be absolutely independent of all political interferences? Recent years have witnessed increased debates on the possibility and desirability of citizens' involvement in monetary issues (De Bruin et al. 2018; Dietsch, Claveau, and Fontan 2018; Pettifor 2017). Defining precisely the role of an agent in the creation and management of money is a difficult issue. The second distinction, presented in section 4.2, is an attempt in that direction. It differentiates currencies according to whether users can take part in their management. It aims to provide a clear guide for deciding which kind of currency to support if one cares about citizen's participation.

Finally, in relation with the third criterion developed in this chapter, one could wonder whether money's possible uses should be restricted according to some geographic or communitarian criteria, so as to bring about certain benefits. This question is crucial for currencies, such as LETS, regional or local currencies, which are only valid locally or within a specific community. For instance, local currencies are often praised for their alleged capacity to localize the economy and to strengthen communitarian ties, thanks to their uses being restricted locally (Brooks 2015; Curtis 2003). One could ask whether these claims are true, but could also investigate whether it is in line with justice. Should money's purchasing power be restricted locally, or within communitarian bonds, or to certain goods, in order to achieve certain objectives? Chapter III will come back to this question.

All these questions are of utmost importance. The above three distinctions allow to frame political issues in adequate terms, as unambiguously as possible, and to discuss adequate policy proposals based on the relevant differences between currencies. In that sense, they help set the ground for further ethical debates on these issues. There is certainly room for other interesting distinctions. For instance, we could certainly gain useful insights by making clearer what monetary creation really means. This might be the subject of further research.

5. Conclusion

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

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

The subsequent chapters will tackle some of the ethical questions that these distinctions have underlined. Based on the first distinction, Chapter II discusses whether there should be one, several or no legal tenders, and what might justify the state's monopoly over money. Chapter III relies on the third distinction and studies how putting communitarian, geographic or other kinds of limits to money might conflict with justice. Chapter IV analyses how alternative currencies

relate to the market and to two important arguments against its hold. Finally, in relation to the second distinction, a post-scriptum assesses several arguments in favour of Bitcoin, which will provide an occasion to consider how money ought to be governed and regulated, and by whom.

CHAPTER II: ON THE PLURALITY OF MONEY

1. Introduction

This chapter is an investigation into monetary plurality. It aims to study the feasibility and desirability of having multiple currencies circulating in parallel to each other within a given monetary area, that is, within the territory of a state, or a group of states.²⁰ More specifically, it focuses on two different proposals and relates them to two specific political issues.

First, it discusses Lietaer's proposal of transforming the monetary system into an ecology of money, where several different local, regional and international currencies would circulate in parallel to each other (Lietaer 2011b; Lietaer et al. 2012). This proposal draws part of its inspiration from natural ecology as well as from the study of past episodes of monetary plurality, which have been the subject of an increasing amount of academic scholarship.²¹

²⁰ I do not study monetary plurality in international commercial relations, which goes beyond the scope of this chapter. It must be noted, however, that global trade currently relies on a basket of major currencies (the US dollar mainly, but also the euro, the yuan and the yen (see B. J. Cohen 2004)). I shall not discuss either what is the optimal size of monetary areas. On optimal monetary areas, see Mundell (1961), and the debates on European economic integration (Issing et al. 2001; Krugman 2013; Schelkle 2017; Viehoff 2018).

²¹ Blanc (2000) studied recent French and European experiments of monetary plurality. Gómes (2009), Théret (2018) and Zanabria and Théret (2007) focus on the Argentinian experience. Fantacci (2005, 2008), Kuroda (2008a), Gómez (2018) and Lietaer (2001)

Second, it studies Hayek's defence of free competition in money, which would involve the full deregulation of banking and the free development of private currencies (Hayek [1976] 1990). Hayek's work was pretty influential and inspired a large number of further works on the history and desirability of these ideas.²²

These proposals belong to a larger debate in economics on the desirability of monetary plurality and in political philosophy on the legitimate limits of the state's power over money. These two issues are particularly relevant in the aftermath of the 2007 financial crisis, which has exposed the deficiencies of governments and central banks' handling of monetary policy and money creation (De Bruin 2017; Pettifor 2017; Turner 2016). As we will see, some argue for looser links between states and monetary policy (e.g. Dowd 2015); others for stronger accountability mechanisms and tougher regulations (e.g. Dietsch, Claveau, and Fontan 2018).

This chapter studies the plausibility of Hayek's and Lietaer's claims in favour of monetary plurality. Their ideal scenarios diverge of course. Hayek's proposal is radically libertarian while Lietaer's ecology of money is closer to more moderate and ecology-friendly social-democrat ideals. The first praises competition between currencies while the second promotes a kind of harmonious monetary complementarity. What these authors have in common, though, is their radical critique of the unity of the monetary system, which they wish to replace by a plurality of currencies.

Lietaer argues that society should seek to achieve financial stability, which he defines as the optimal balance of resilience and efficiency. He contends that an ecology of money would guarantee financial stability because it would reduce the likelihood of financial crises and would be better equipped to respond to them. Let me call this the Financial Stability Argument for monetary plurality.

take a larger look at more ancient experiments all over the world, from China to Germany and the USA.

²² See Capie and Wood (1991); Dowd (1989, 1992); Friedman and Schwartz (1986); Glasner (1989); Selgin (1988); Selgin and White (1994); White (1984, 1989, 1990).

Hayek raises two arguments in defence of his proposal. The first relates to price stability (i.e. low inflation), which Hayek ranks as one of the most important objectives of monetary policy (e.g. Hayek [1976] 1990, 33–34). According to Hayek, competition would guarantee price stability because it would impose on every (private) money issuer a “much-needed discipline” (ibidem, 23), which would prevent any of them to issue too much money or to debase one’s currency. [Price Stability argument]

Hayek’s second argument is based on his conception of the right to contract. The latter includes, according to Hayek, the right to choose freely its means of payment. State monopoly over money creation and the imposition of a legal tender is a serious breach of that right (Hayek [1976] 1990, 36–41). Consequently, Hayek argues that respect for everyone’s right to contract requires the absence of any monopoly over the creation and regulation of money. [Right-based argument]

This chapter analyses the logical consistency of Hayek’s and Lietaer’s arguments and examines whether they rest on solid normative foundations. Its main contribution is philosophical and normative: it does not aim to evaluate the empirical validity of these proposals, which are supported by few existing or historical examples (Munn 1991; Gómez 2018). Rather, it attempts to determine whether these arguments necessarily imply the free development of a plurality of currencies. My conclusion will be negative: neither Lietaer nor Hayek are able to provide solid arguments in favour of their proposals. Through the analysis of Lietaer’s and Hayek’s arguments, this chapter also touches upon fundamental issues, such as those concerning the legitimacy of monetary policy and of the state’s monopoly over money.

The next section provides some clarifications on the meaning of these proposals. Sections 3 and 4 contain a critical review of several arguments in their favour. Section 5 concludes.

2. Preliminary clarifications

What do expressions like “plurality of currencies” or “monetary plurality” mean?

First, within each monetary area, there is the possibility of using a plurality of units of accounts. A unit of account is a tool to compare, on a common scale, the value of different goods and services. On international markets, multiple standards already prevail, as firms use and exchange multiple currencies for one another. Similarly, there would be absolutely nothing morally problematic in having a multiplicity of such scales prevailing within a given monetary area. Actually, the difficult question, which I do not discuss here, does not concern the existence of multiple units of accounts, but the possibility of comparison of different goods along the same scale. Indeed, some authors have claimed that not all things are commensurable.²³ However, provided that some given goods are commensurable, we can then compare them using whatever scale we fancy. After the introduction of the euro, in 2002, some people kept using extinct national currencies as units of account. In the short run, this is to be expected, as it might be difficult, to switch to a brand new unit overnight. And the co-existence of different ways of measuring value is certainly not morally problematic. However, even if everyone remains free to design his or her own subjective tools of comparison, one can doubt that, in the long run, a very large diversity of units of accounts could survive in parallel to each other within each monetary area, as this would necessitate constant inter-comparison of multiple standards.

A second issue concerns the possible development of different means of payments. A given currency usually has a unique

²³ This debate concerns whether the value of certain goods (usually environmental goods, or “nature”) can be expressed in market terms (prices), so that they can be compared to other economic goods on a common quantitative scale. Some contend that it is (Costanza et al. 1998; De Groot, Wilson, and Boumans 2002; Daily et al. 2000). Others that it is not (Hess 2013; Gadrey and Lalucq 2015). This debate relates to another controversy in philosophy, where some authors have discussed whether all goods and all values are commensurable (Broome 1999b, 1999a; Chang 1997; Hsieh 2016; Raz 1986, chap. 13). I shall come back to these issues in chapter IV, §5, when discussing how markets affect values and motivations.

denomination (ex: “the euro”, “bitcoin”, etc) but can possibly take multiple forms as a means of payment, such as: paper notes, metallic coins, bank deposits, central bank reserves, cheques, traveller’s cheques, and various electronic means of payments (debit and credit cards, mobile payments), etc. To what extent this diversity should be encouraged, or limited? What kinds of means of payments should we be allowed to use? At first sight, this might not appear as a big issue: what’s wrong with giving people such a large, apparently innocuous, freedom of choice (Angel and McCabe 2015)? Some means of payments might not be so innocuous, though. Cash and anonymous cryptographic means of payments have been subject to increasing blame. Both have been criticised for their role in facilitating fraud and illegal activities (Rogoff 2014, 2017; Sands 2016; for cryptocurrencies, see the Post-Scriptum). In addition, some oppose cash because it reduces room for manoeuvre in monetary policy (Buiter 2009; Goodfriend, Bryant, and Freedman 2000; Goodfriend 2016; Rogoff 2014, 2017, chap. 8). The availability of cash prevents central banks to set up a negative interest rate, as economic agents always prefer to hold cash (whose nominal yield is zero) rather than deposits when the nominal interest rate is negative. Without cash, central banks could, in periods of severe economic downturns, set up a negative interest rate on reserves to boost investments (Mankiw 2009). Phasing out cash, starting with high-denomination notes, would therefore greatly alleviate these two problems.²⁴

Despite the importance of these debates, this chapter does not consider these arguments, as they do not play a part in the debates over alternative currencies. The focus of this chapter is put on another conception of monetary plurality. It concerns the question of whether there should be one or several currencies circulating in parallel to each other within one definite monetary area. As we have seen in the general introduction (§1), a currency is a medium of exchange with a unique denomination, which relates to a unique

²⁴ Note that studying the diversity of means of payments is similar to discussing the questions that arise from the possibility of a plurality of stores of values: storing cash for illegal purposes does not raise fundamentally different issues than using it as a means of exchange for the same purposes.

standard of value, but which might take several forms as a means of payment (notes, coins, etc). For instance, the euro, the dollar and the Bristol pound are all examples of currencies: even if they may take various forms as means of payment, they have a unique denomination and the value of one unit of these currencies is the same for any unit at a given moment in time. In a sense, a currency is an abstract concept (nobody has ever seen “the euro” or “the dollar”), while specific means of payment are concrete representations of a certain amount of an abstract currency.

The central question of this chapter is, therefore, whether there should be one or several currencies circulating in parallel to each other within one definite monetary area. In doing so, it also discusses whether all of these currencies, a part of them or none, should count as legal tender. This second question is essential as it raises the issue of the legitimate use of the state’s coercive power over money. According to the Oxford English Dictionary (2018), a legal tender is defined as money “which a creditor is bound by law to accept when tendered in payment of a debt”. Can the state legitimately impose a legal tender? Can people be compelled to accept a specific currency in payment?

As we shall see, there has been some serious proposals of multiplying the number of currencies, either through competition (Hayek [1976] 1990) or through the gradual establishment of an “ecology of money” (Lietaer et al. 2012; Douthwaite 2000). Not all of these proposals entail that all currencies should be legal tenders, though. Hayek proposed to get rid of the idea of a legal tender and to replace it by a myriad of competing alternative currencies. This proposal contrasts with the current situation, which (approximately²⁵) consist of monetary systems with their own unique currency counting as legal tender. In between, Lietaer’s proposal of multiplying the number of parallel currencies accommodates itself with the persistence of a legal tender, whose weight in the economy will nevertheless tend to decrease under the pressure of the

²⁵ Some countries have several legal tenders, such as Cuba, which deals with Cuban Pesos and Convertible Cuban Pesos. This is an exception rather than the rule, though.

multiplicity of alternative currencies. Table 2 below summarises the different proposals and contrasts them with the current situation.

Current Situation	Monetary monopoly, marginal use of alternative currencies & imposition of a legal tender
Lietaer's proposal (Ecology of Money)	Monetary plurality with widespread use of complementary alternative currencies & persistence of a legal tender
Hayek's proposal (Competition in Money)	Monetary plurality with widespread use of competing alternative currencies & complete ban of the legal tender

Table 2- Different scenarios of monetary plurality

The next section focuses on Lietaer's claim that monetary plurality increases stability (§3). Then, the chapter analyses Hayek's claim that a plurality of currencies will guarantee price stability (§4.1). Finally, it scrutinises Hayek's claim that the state's monopoly over money and the imposition of a legal tender is an infringement of the right to contract (§4.2).

3. Lietaer's ecology of money

3.1. Presentation of the argument

Bernard Lietaer is one of the most fervent advocates of the implementation of what he calls an "ecology of money" (Lietaer 2001, 2011a, 2011b). His proposal benefited from his work with Sally Goerner and Robert Ulanowicz²⁶ and from the work of Richard Douthwaite (2000, 2012), and has had an important impact on proponents of alternative currencies in the non-academic world (Attout et al. 2013; Kalinowski 2011). Under this scheme, the present monetary system would be complemented by a myriad of parallel alternative currencies (Lietaer, Ulanowicz, and Goerner 2009, 10–

²⁶ See Goerner, Lietaer, and Ulanowicz (2009); Lietaer, Ulanowicz, and Goerner (2009); Lietaer et al. (2010, 2012); Ulanowicz et al. (2009).

12). These currencies would not be legal tender, and any actor would be free to create its own. These actors may include businesses, towns and local communities, but also governments. The kind of currencies considered include Local currencies, LETS, the WIR, regional currencies, commercial currencies (e.g. Air Miles), complex schemes such as NU or the SOL (Lietaer et al. 2012). Actually, anything is worth developing except bank created money.

Lietaer identifies the latter as one of the root causes of the unsustainability of the present monetary system (Lietaer et al. 2010). Nowadays, private banks create money each time they make loans, as new loans translate into new deposits. This process has several checks though (McLeay, Radia, and Thomas 2014). Prudential regulations usually restrict the kinds of loans that banks can make. Central banks can indirectly control the amount of money created by private banks through monetary policy, most notably by setting reserves requirements and the interest rate paid on these reserves. According to Lietaer, these checks are insufficient and money creation by banks in the form of loans still creates a “growth imperative”, which inherently plagues our current monetary system. Credit requires debtors to repay their debt with interest, and, therefore, according to Douthwaite (2000) and Lietaer et al. (2010), it forces people to constantly increase production in order to repay a debt that is permanently growing. Because this growth imperative is in contradiction with the finite nature of the resources of our planet, the present monetary system is, according to these authors, unsustainable (Lietaer et al. 2012).

Neither authors argue for the immediate ban of bank created money. Rather, they contend that their project of implementing an ecology of money could reach this goal gradually, by slowly reducing the need for bank money. Moreover, the latter argument does not necessarily require the implementation of monetary plurality. It could demand a less dramatic, though still radical, reform of the banking

system, one, possibly, that would forbid lending with interest. Therefore, I shall not examine that argument thoroughly.²⁷

The main argument in favour of an “ecology of money” is the following: it would make our current monetary system more stable through a right balance of efficiency and resilience (Ulanowicz et al. 2009; Lietaer et al. 2012; Goerner, Lietaer, and Ulanowicz 2009). These concepts find their origin in scientific ecology (Holling 1973; May 1972), even if they have been adapted for the purpose of Lietaer's monetary theory.²⁸ According to Lietaer et al. (2012, 78) efficiency, or throughput efficiency, “measures the ability of a system to process volumes of the relevant matter-flow, energy-flow and/or information-flow”, while resilience “measures the ability of a system to recover from a disturbance”. According to these authors, there is a trade-off between these two measures: the more a system is resilient, the less it is efficient, and vice-versa. Stability is attained when the optimal balance between the two prevails (Lietaer et al. 2012, 79). The key parameter linking the two is “diversity”. On the one hand, increased diversity enhances resilience “because there are numerous channels of interaction to fall back in times of trouble” (Lietaer et al. 2012, 78). On the other hand, efficiency tends to decrease with diversity. A more diverse system may become more complex to engineer and, therefore, less efficient. Unfortunately, Lietaer does not specify when optimality is achieved. Neither does he provide a measure or a criterion to assess how resilient, efficient or stable a given system might be.

²⁷ Some have proposed a more complex argument explaining this growth imperative (M. Binswanger 2009; H. C. Binswanger 2012). However, it relies more on the firms' profit motive than on money creation by banks. For a critical review of such arguments, see Strunz et al. (2015). The main objections against that position, apart from the fact that banks are (more or less strictly) regulated and not free to create as much money as they would wish, are that (1) bank's power to create money is restricted by competition and profitability and (2) that the creation of money and the growth of the economy also depend on the demand of money, that is, the demand for credit.

²⁸ The conceptual toolbox of ecology is much richer than what Lietaer makes of it. The definition of resilience, stability and diversity have been the subject of intense controversies and alternative concepts have been proposed (See, for instance, Holling 1973; Ives and Carpenter 2007; May 1972; Willis 1997).

Drawing on these insights from ecology, Lietaer concludes that only monetary plurality can provide the optimal balance of resilience and efficiency, even if he does not provide any information on the exact nature of this optimal balance. He argues that a larger diversity of currencies could provide a larger array of tools for effectively responding to shocks in times of crisis. An ecology of money would be better able to respond to turmoil because reliable currencies would replace defective ones in times of crisis. Moreover, such a system would be less likely to be hit by a financial crisis, because it would be less dependent on one single currency.

Lietaer's ideas are quite popular in the "alternative currency world" (See for instance Attout et al. 2013; Derudder 2014). In the following paragraphs, however, I argue that they are likely to suffer from several limitations. I first consider the logical side of the argument (§3.2): does the argument from ecological stability translate into an argument for monetary plurality? Is there a strong positive relationship between diversity, resilience, and stability both in ecological and in monetary ecosystems? I then study its normative content (§3.3): should the monetary system be stable and resilient? What does it entail for policy making?

3.2. Is Lietaer's analogical argument valid?

Lietaer's argument rests on an analogy between natural ecosystems and monetary systems. Lietaer starts from the premises that (a) natural ecosystems that are more diverse are also more resilient; and that (b) more resilient ecosystems are also more stable. By analogy, he then concludes that a more diverse monetary world will also be more resilient and more stable. Is this analogical argument valid?

Philosophers of science have sought to establish criteria to evaluate the strength of analogical arguments. I will use the framework of Hesse (1967), as presented in Bartha (2016), who emphasises three prerequisites for a good analogical argument.²⁹ First, the analogy must concern observable similarities. Second, the

²⁹ See also Woods et al. (2000) for a more general introduction to the problems of analogical arguments.

explained relation must be causal. Third, the compared elements must not have “essential” differences. What counts as “essential” is open to debates (See Bartha 2016). Here I simply assume that differences must not be too great.

(1) Lietaer's argument, as presented in the previous section, seems to respect the first condition. The diversity, resilience and stability of natural ecosystems are observable properties and there is a large literature in ecology on the subject (e.g. Zommers and Alverson 2018). Similarly, one can assess the stability of existing monetary systems and study how they react and recover from shocks (e.g. Haldane and May 2011). However, the resilience and stability of monetary systems that would respect Lietaer's proposal is harder to assess, for his ideas have not been applied on a large scale yet. In support of their ideas, Lietaer and his co-authors give the example of the WIR experience in Switzerland, which is deemed to have contributed to Swiss economic stability (Stodder 2009; Vallet 2016). Lietaer et al. (2009, 1) even claim that “formal econometric analysis has proven that the WIR acts as a significant counter-cyclical stabilizing factor that explains the proverbial long-standing stability of the Swiss economy.”

Recall that the WIR is a kind of multilateral credit system, which private firms can use to exchange goods and services. When an exchange in WIR takes place, the account of the firm that sells a good is credited of a given amount while the account of the buyer is debited of the same amount. These debts become money (labelled in WIR) and can be further used within the WIR community. Stodder (2009) and Vallet (2016) argue that the WIR has had a significant counter-cyclical effect in times of crisis, especially for small and medium enterprises. In turbulent times, members of the WIR tend to compensate for the loss in sales in CHF by a rise in sales in WIR. However, they do not go as far as claiming that the existence of the WIR explains overall Swiss stability or that it contributes significantly to the Swiss economy (See also Blanc 2018a, 99). Moreover, both acknowledge that further work needs to be done in that area.

Despite the WIR's beneficial effects, one can nevertheless have doubts that this example is really supporting Lietaer's argument. Stodder (2009) stresses the importance of the WIR's inherent traits (its solidity as a mutual trade credit scheme, mainly) but does not mention diversity or resilience as explaining factors of the WIR's long-term stability. Vallet (2016), who has conducted interviews among the WIR community, concludes that mutual trust and a spirit of cooperation among WIR participants explain the WIR's success. The WIR has certainly been beneficial to the Swiss economy, and is one of the most successful alternative commercial currencies. However, neither authors explain that success for the reasons underlying Lietaer's argument. Future research is needed to complement Vallet and Stodder's pioneering studies. In particular, more quantitative studies would be required to show how the WIR has contributed to Swiss' macroeconomic stability.

(2) The second requirement is that the analogy should concern causal relations. Lietaer claims that there is a causal link between diversity and resilience, and between resilience and stability. Increased diversity leads to increased resilience, which in turn ensures greater stability. Using an analogical argument, he contends that a monetary system consisting of a large diversity of currencies will increase resilience and converge towards something similar to a stable natural ecosystem.

In ecology, an immense literature studies the relationship between diversity and stability. In their review article, Ives and Carpenter (2007) show that most empirical studies confirm the expectation of a positive relationship between diversity and stability. However, these studies use numerous different concepts of stability, and none of these definitions refers to the optimal balance of resilience and efficiency (which is Lietaer's definition). Moreover, they show that there are numerous possible theoretical explanations of this phenomenon, which often contradict each other. Among potential theoretical explanations, some do predict that diversity leads to stability through increased resilience, but not all. The authors stress that, when species respond differently to environmental shocks, increasing diversity often makes the system more resilient and,

therefore, more stable, because a decrease in population for some species is counterbalanced by an increase in population for others. However, there are instances of unstable but resilient ecosystems. Holling, for instance, shows that insect populations in Canada, which are perfectly able to recover from climate shocks, nevertheless vary widely and are, therefore, unstable (Holling 1973). Interestingly, many theoretical explanations of the positive relationship between diversity and stability do not rest on resilience. The explaining factor can also be resistance to shocks, the effects of competition between species, or relative isolation.

In short, one can have doubts that Lietaer's interpretation of the relationship between diversity and stability in ecology is the right one. There is a relative consensus in ecology about the positive relationship between diversity and stability. However, Lietaer's concept of stability does not relate to any of those that are used in the mainstream literature in ecology. Moreover, the relationship might be explained by a causal mechanism that is different from Lietaer's, one which, crucially, does not mention the role of resilience.

(3) Does Lietaer's analogy fulfil the third requirement? How much do natural and monetary ecosystems have in common? *Prima facie*, it is hard to see what currencies and natural elements have in common. Currencies are social constructs, they depend on what people do with them and think of them. Their existence depends on their acceptance by a large number of users. Moreover, contrary to nature, these social constructs are relatively recent and have not undergone any severe natural selection process (Haldane and May 2011). Currencies are protected by governments, which can force people to use them.

One possible parallel could be that both money and nature provide services to human beings. Money has several functions. It is a means of payment, a unit of account, and a store of value. Similarly, ecosystems render multiple services to humans, from gas and climate regulation to waste treatment and food production. Costanza et al.

(1998) list 17 different kinds of (broadly defined) natural services. De Groot et al. (2002) refer to 23 different ecosystem services.

However, one can doubt that this is an adequate way to compare natural and monetary ecosystems. First, the range of services that nature provides is much broader and more diverse than the range of money's functions. Money is, basically, a means of exchange. All its functions revolve around that purpose: evaluating the value of goods and services, and facilitating trade. Ecosystem services, on the contrary, are immensely diverse: supply of food and water, regulation of gas and of pollution, regeneration of soil, pollination, notwithstanding their cultural, aesthetic and social functions. Second, and most importantly, while it is undeniable that money is used and created in order to provide certain functions, one cannot contend with the same ease that the *purpose* of nature is to render these ecosystem services. This is very welcome of course that nature provides these services to human beings, which can use them for their own purposes. However, contrary to monetary ecosystems, it is much more controversial to contend that natural ecosystems have been "designed" or "created" for these purposes.³⁰ This latter point has very important implications for assessing Lietaer's argument.

Natural ecosystems react to shocks without any intent. The order of nature is spontaneous and not designed. On the contrary, when a shock hits a monetary system, multiple actors will coordinate to find the proper response against it: central banks and governments are not animals that act out of instinct only. They have a plan and a purpose. This state is not a product of nature. It is a product of the past: citizens and governments contributed to build it up. This also means that it can be changed. Should we get rid of this system?

If taken seriously, Lietaer's proposal appears to rely on the belief in spontaneous (monetary) order. As we shall see, this feature is also shared by Hayek's proposal (see 4.1), whose influence is acknowledged by Lietaer (e.g. Lietaer, Ulanowicz, and Goerner 2009,

³⁰ The thesis that nature has a purpose (or a design) has been forcefully contested since at least Darwin's revolutionary work (See Kitcher 2009).

13). An ecology of money would in practice involve a great number of different currencies. Each of them would be linked to a community, a private firm, a state, or an informal group of individual. Lietaer claims that the result of their interaction would be harmonious and stable. Harmonious because all currencies will “fit together” so that the monetary system will reach equilibrium without central intervention. Stable because the system will be able to react resiliently to external shocks. In times of crisis, reliable currencies will “spontaneously” replace “failed” ones.

One can have doubts that such a system would be harmonious and stable. Most economists now think that monetary systems do not come back to a state of equilibrium spontaneously, without interventions (Goodhart 1991; Kindleberger 1978). They stress that designing a self-stabilizing monetary system is simply impossible: one always needs regulations and discretionary interventions to bring the system back on track. Without regulations, monetary systems are likely to suffer from constant fluctuations and regular crises. The present consensus, therefore, is that monetary systems can and ought to be regulated, even if economists generally disagree on what can and ought to be done (For an overview see Bordo 2008). Unfortunately, it is to be expected that a system made of multiple different kinds of currencies circulating in parallel to each other will be very complex to manage, and will have great difficulties to go back to equilibrium. Lietaer's ecology of money would involve a lot of different monetary institutions, which would each deal with their own currency, or baskets of currencies (Lietaer, Ulanowicz, and Goerner 2009). Without central governance, or with a myriad of monetary institutions (one for each currency), it is very unlikely that monetary plurality will give birth to a stable monetary system. The absence of a dominant currency, far from guaranteeing stability, is likely to be a driver of instability. Of course, safeguarding a dominant currency within a given monetary area is not a guarantee of stability either. Without proper regulations and adequate monetary policy, a

single-currency regime can also experience severe downturns.³¹ However, the latter is far easier to manage and to regulate than a system relying on a plurality of parallel currencies.

To sum up, Lietaer's analogical argument is unlikely to make the case for his "ecology of money" proposal. His theory does not use the same concepts than mainstream studies in ecology while the causal mechanism underlying his claims is only one among the many possible explaining factors of ecosystems' stability. His argument also relies on the belief in spontaneous monetary order, which is a very controversial position in monetary economics. Finally, Lietaer assumes that monetary and natural ecosystems are comparable, which is hardly the case. The conclusion is that, contrary to what Lietaer argues, it is very unlikely that monetary plurality could be a driver of stability.

Before turning to the discussion of the normative side of Lietaer's theory, I would like to raise one last empirical objection. It concerns the viability of his proposal: will people accept to use several different currencies?

Currencies have a feature that natural beings do not: even if everyone is allowed to create his or her currency, it must then be accepted by a large number of people. Up to now, alternative currencies have had relatively low success in attracting users (Blanc 2016). In a sense, this is a surprising result, as there are very few legal barriers to their implementations and wider use (Attout et al. 2013). Moreover, the financial crisis could have opened a new era for these currencies, as mainstream banks and financial markets were contested and blamed for their reckless behaviour. However, no significant surge in adoption was acknowledged at the time. One explanation might be that the power of routine is so strong that it would need a real catastrophe to boost wider adoption to these

³¹ It could be argued that certain monetary areas (e.g. the Eurozone) are too big, that they include too many heterogeneous economies, and that this threatens their stability and their governability (e.g. Krugman 2013; Schelkle 2017; Viehoff 2018). Perhaps the Eurozone should be divided into smaller units. That question falls beyond the scope of this chapter, though.

proposals, as Friedman and Schwartz (1986, 60) conjectured in the case of free banking (see below p. 83). However, Lietaer and his co-authors (2012) seem confident that the time has come for such reforms, as our monetary system is doomed by instability. Alternatively, we could think that these currencies do not provide enough incentives for their adoption. Their advantages are mainly potential, and there are no signs of any real significant impacts of these currencies on the environment or the economy (Dittmer 2013; Michel and Hudon 2015; Marshall and O'Neill 2018). Finally, participating in such schemes can entail a certain number of costs (mostly in terms of free time and commitment) that might discourage many potential users (Aldridge and Patterson 2002).

The problem is that the “ecology of money” proposal cannot fulfil its objectives if it is not widely accepted and implemented. Indeed, for a currency to have any effect on the economy, a sufficiently large number of people and institutions (banks, states) should use it. Currently, however, neither the economic context nor the potential benefits of Lietaer's proposal seem sufficient to trigger the spontaneous and free adoption of Lietaer's proposal by a large variety of individuals and firms. Lietaer and his co-authors (2009) argue that states could accept alternative currencies in partial payment of taxes, so as to incentivize people to use them. However, that horizon is, for now, out of sight.

3.3. Normative limitations

The second range of problems concerns the moral side of the theory. Lietaer and his co-authors do not make sufficiently explicit the moral principles on which their account is relying. Nor do they confront their arguments to possible objections relating to what their proposal would entail.

The first problem concerns the concept of resilience. This concept has both a descriptive and a normative side. The descriptive side is straightforward: a resilient system is a system that goes back to equilibrium after a shock. However, one can wonder if any sort of resilient response to a shock is desirable. On the one hand, the shock itself might be welcome. Just think about popular revolts against

tyranny, or against plutocracy. On the other hand, all resilient responses are not desirable. For instance, can a response that causes harm count as resilient? Strictly speaking, austerity measures constitute a resilient reply to financial meltdowns: it helps to bring the system back at equilibrium. Almost everyone would agree that a financial meltdown is a detrimental shock but generally disagrees about the most effective or just response to it. The concept of resilience has an important normative side: we need to know to what shocks we ought to respond and what an adequate or just or efficient response would be. Unfortunately, Lietaer and his co-authors do not provide a clear answer to these questions.

The second issue concerns the nature of stability. Is stability inherently desirable? Are all systems worthwhile to keep stable? Lietaer's theory does not make sufficiently explicit what kinds of economic or monetary system one ought to keep stable: it points at the stability of a system, regardless of the desirability of the system. In a way, the present monetary system is rather resistant to shocks: the dollar system is still in place in the US after several important financial crisis, wars and policy changes. I doubt Lietaer would find this desirable. Similarly, let's imagine that alternative currencies would contribute to maintain an unjust economic system, would this be a desirable outcome? We would need some normative criteria to determine what we ought to keep stable, and why we ought to keep it stable. Stability is one important value: relentless shocks, booms and recessions should be avoided, as far as possible. However, this is not enough. We need other values to evaluate our economic system. One would need to know, for instance, whether this system guarantees basic human rights, whether it achieves some kind of distributive equality, or of fraternity, among other values. Unfortunately, this discussion is absent from Lietaer's account.

4. Hayek's competition of currencies

It might seem incongruous to consider Hayek's case for a competitive monetary system in a thesis that focuses on alternative currencies, which, one may think, lie at the exact opposite of Hayek's market enthusiasm. However, as we shall see in the Post-scriptum,

the theoretical basis of some of these currencies, such as Bitcoin and cryptocurrencies, have a direct filiation with Hayek (See for instance Ametrano 2016; Kaplanov 2012). Moreover, his arguments offer a convenient entry into the question of the legitimacy of the state's monopoly over money, which also concerns other kinds of alternative currencies.

The legitimacy of state interventions is at the centre of important debates in political philosophy (See Peter 2017). In this chapter, I will adopt Rawls' conception of political legitimacy, which has been widely influential in contemporary philosophy. Rawls states that state interventions are legitimate as far as they are justifiable with reasons that people can reasonably accept, that is, that they would accept if conceived as free, equal, and rational citizens (Rawls 1997, [1993] 2005, chap. 6; See also Quong 2018). In this section, I will inquire if there is any legitimate reason to impose a legal tender or to restrict people's freedom to issue their own currencies. I will consider mainly empirical reasons (e.g. the beneficial or detrimental effects of different kinds of monetary arrangements on the economy), but also moral reasons (e.g. protection of certain individual rights). I will assess the reasons that Hayek provides for justifying his proposal, but also consider reasons advanced by his critics.

Hayek's proposal has two sides. The first is a complete freeing up of the banking system from all regulations. The second consists of the free competition of currencies, namely, the abolition of exchange controls of the movements of money across borders and the freedom for private enterprises to issue their own currency. Note that the two propositions are independent. One does not need to free banking from all regulations in order to achieve the free competition of currencies. Conversely, one may have free banking without competition in money. In fact, even if many authors agree with Hayek on the virtues of free banking, most did not support his defence of competition in money.

According to White and Selgin (1994, 1718–19), free banking entails that

“there is no government control of the quantity of exchange media. There is no state-sponsored central bank. There are no legal barriers to the entry, branching, or exit of commercial banks (...). There are no restrictions on the quantities, types, or mix of debt and equity claims a bank may issue, or on the quantities, types or mix of assets it may hold. Interest rates are not controlled. There are no government deposit guarantees. In general, no restrictions are placed on the terms of contracts made between banks and their customers, beyond the requirement that they adhere to the standard legal principles governing all business contracts.”

White (1990, 193–94) lists four types of possible positions within the free banking debate, where Hayek’s proposal is just making for one. First, free banking may come with a gold standard (White 1984). Second, it may rely on fiat government money (Friedman and Schwartz 1986; Schwartz 1993). Third, some imagined that money under free banking could consist of a commodity standard (similar to a gold standard but made of a series of commodities instead of just one) (Greenfield and Yeager 1983; Yeager 1983). Finally, Hayek ([1976] 1990) defended free banking with competing currencies. This was also the position of Klein (1974, 1976).

Hayek argues that free banking should be accompanied by the free competition of currencies, whose creation should be left to any private firm and regulation left to the free market. Hayek’s defence of these proposals rests partly on a deontological defence of the right to contract freely, but mostly on their alleged beneficial economic consequences. I analyse both arguments hereafter.

4.1. Price Stability

According to Hayek, his proposal is the best means to fight inflation, as competition would “impose upon existing monetary and financial agencies a very much needed discipline by making it impossible for any of them (...) to issue a kind of money substantially less reliable (...) than the money of any other.” (Hayek [1976] 1990, 23) Competition would select the “best” currencies, which, according to Hayek, will be those whose real value is assured not to fall in time. Any private issuer of money would need to make sure it

retains its credibility by guaranteeing the constancy of the real value of the currency it issues. Over-issue may be profitable in the short run, but in the long run, it would destroy confidence in the stability of its money. Therefore, under such a competitive scheme, no economic agents, including the government, would be able to “cheat” the system by establishing price controls, or by regulating the outflow or inflow of money (Hayek [1976] 1990, 25).

Hayek's proposal has been criticised as impractical by many. First, it is pretty unsure that competition could effectively prevent people from issuing too much money, so as to avoid inflation. The historical evidence on that matter does not show that the competitive nature of money creation restricted over-issue (Bordo and Schwartz 1995, 458–68). However, no historical example of something close to the ideal of free banking or of competitive parallel currencies has ever been witnessed, so that some argued that the historical evidence is, at best, inconclusive (Bordo and Schwartz 1995; Klein 1974; Munn 1991) and, at worst, irrelevant (Rothbard 1988). Whether or not empirical evidence supports Hayek's ideas, can we conclude that they hold in theory?

In response to Hayek, one may argue that many firms might experience a short run bias: the temptation to create more money than what their credibility would allow may be too strong compared to the long run benefit, in terms of credibility, of a more conservative policy. This argument has been made in connection to the government's control over monetary policy (J. M. Buchanan and Wagner [1977] 2000; G. Brennan and Buchanan 1981). It holds that, in the short run, and especially in times of elections, governments have an incentive to create excessive amounts of money, in order to please their electorate, even if, in the long run, everyone would benefit from stricter commitment to predictable rules (Dietsch, Claveau, and Fontan 2018, 35–36). Indeed, a sudden increase in the money supply has usually a temporary positive effect on growth, even if, in the long run, that effect is cancelled out by inflation. If that argument is true in the case of governments, there is no reason to think that it does not apply to private firms. Similarly to the former, they may favour expansionist policies in the short run, even

if this is not their rational interest in the long run. For, even if it may be in the short term interest of these private firms to increase short term profits, this would come at the cost of the firm's long term credibility as an issuer of money.

Actually, firms and governments must deal with the same kind of dilemma. On the one hand, they are under pressure to deviate from their commitment to one given policy rule. Managers (or shareholders) and politicians both have an incentive to favour short-term gains, financial for the former and electoral for the latter. On the other hand, they must take into account the long term consequences of their actions, which may hurt the firm's consumers and the politician's electorate. Should we, therefore, favour government-based money creation or Hayek's proposal of private money creation?

One's position in this debate depends on one's faith in the honesty of governments and of the private sector as well as on the belief that competition can effectively prevent firms from deviating from their proclaimed non-inflationary objectives. Hayek believes that the private sector is more reliable than governments because the former is tamed by competition while the latter benefits from its unrestricted monopoly. When a firm deviates from its promise to offer non-inflationary means of payments, it takes the risks of losing its customers to another company. The government does not face that risk.

However, some contest that account on the ground that competition is often unable to curtail human greed and that competing firms can face even higher risks of "individual misbehaviours" (Benes and Kumhof 2012, 16), which lie at the root of the recent economic crisis (Cullen 2017; Reiff 2017). According to Goodhart (2011, 139), for instance, "competition within the financial system [can be] dangerous to the maintenance of stability. Such competition pares profit margins and hence the build-up of capital buffers. It encourages banks to take on more risk in pursuit of higher profits."

Assuming that both governments and private firms are equally prone to short-term biases, a possible way out of rigid ideological positions would be to determine which of those two is the easiest to regulate. Whose behaviour can we tame with greater ease?

In practice, governments have delegated the management of monetary policy to an independent agency, i.e., a central bank, which is not subject to electoral cycles. Moreover, governments have imposed strict mandates upon central bankers, whose policy options are limited by law. Even if these two procedures may not suffice to prevent central bankers to take advantage of their position or politicians to influence them (Dietsch, Claveau, and Fontan 2018, 36–37), these are first steps that limit the risk of political interferences in monetary policy. These two mechanisms are unavailable to Hayek. The core of its proposal is to get rid of all central agencies. It relies on trust in the capacity of competition to discipline private money issuers. It is, therefore, very unlikely that Hayek would advocate imposing a mandate on private firms.

A second objection to Hayek's proposal contends that his scheme would fail to achieve wide adoption. First, Hayek does not consider the costs (for ordinary people and small businesses) of handling numerous different currencies and of adapting prices to the variation of exchange rates between them. Monetary operations would become similar to complex financial operations. They would require a constant collection of information on exchange rates and inflation rates. His proposal would turn citizens into financial operators. Not only would this increase the complexity of the monetary system, but it could also exacerbate inequalities. We are not all trained and gifted financial traders: the burden of handling different kinds of currencies might not fall equivalently on everyone's shoulders.

Regardless of the desirability of turning everyone into a financial trader, these costs and the complexity of the monetary system may deter people from effectively using different currencies. This is not the main challenge to Hayek's proposal though. After all, Hayek may be right to assume that people are perfectly able to handle such costs. He could also reply that the benefits of his proposals outweigh its

costs, that the latter is the price to pay for finally achieving a non-inflationary monetary system.

More fundamentally, however, Hayek disregards the power of routine: money is a social convention, whose widespread acceptance rests in part on the habit of using it (Tobin 2008). People do not necessarily weight the advantage of using a currency over another, but often rely on custom, inherited habits and routine in their choice of currency (Aglietta and Orléan 2002). As Friedman and Schwartz (1986, 44) put it: “it takes truly major depreciation in the purchasing power of the dominant money before any substantial fraction of the community adopts alternatives” (see also *ibidem*, 60). In other words, Hayek may have excessive confidence in people’s willingness to handle several kinds of currencies. Even without state intervention, a single currency might emerge as the new conventional means of payment and stand in the way of Hayek’s competitive ideal. In other words, money is subject to network effects: people will tend to use the currency that everybody else uses. Routine and convenience may thus turn Hayek’s dream into a single currency nightmare. For, without wide adoption, a competitive scheme would fail to provide a credible (i.e. non-inflationary) alternative to the current monetary system.

These two objections weaken Hayek’s argument that competing currencies are more likely to be non-inflationary than conventional government-backed currencies. Firms may have incentives to deviate from their commitment to low inflation, and acceptance of multiple parallel currencies may remain low in the absence of a strongly established convention in its favour. These conclusions, however, depend on the effective capacity of regulations to tame the government’s possible tendency to abuse its powers and on the strength of routine and inherited habits that contribute to maintain the present monetary system.

Finally, one can raise at least one last objection to Hayek’s argument. This objection may be traced back to Fisher (1936), Keynes (1936), and, more recently, to Benes and Kumhof (2012) and Huber and Robertson (2000). It holds that free markets cannot

achieve price stability on their own. Neither can they fulfil other policy objectives, such as macroeconomic growth or full employment. These authors hold that, without state interventions, the “invisible hand” of unregulated markets has a tendency to lead the economy from “booms to busts”, from crisis to crisis. Restricting the government's capacity to intervene would require a lot of confidence in the capacity of the monetary system to recover from a crisis without external intervention, and in the ideal view that the market mechanism can efficiently coordinate money creation without state interventions.

However, Hayek would reply that designing predictable and effective discretionary monetary policies is a mirage. He famously argues that discretionary policies are ineffective and undesirable. They are ineffective because, for him, central planning is far less efficient than markets in collecting adequate information and in channelling it towards economic agents (Hayek 1945). The central collection of information about the entire economic system is so complex that it is simply impossible to predict how the system would react to monetary or economic policies. Moreover, they are undesirable because inflationary, which further undermines the capacity of the market economy to effectively process information (Hayek [1973] 2013, [1976] 1990).

Is Hayek right? All I can say is that the present consensus in monetary economics is that some kind of central management of the monetary system is necessary in order to achieve price stability (Bordo 2008; Goodhart 2011; Goodhart et al. 2014). Opinions differ on the kind of possible and desirable interventions, and on the effects of such interventions, but scholars generally agree on the necessity of some central governance. However, even without considering the desirability of state intervention in monetary policy, or the necessity to stimulate growth and employment or to fight inflation, one can conclude that Hayek's first argument does not provide a solid case in favour of a competitive monetary system. On the one hand, one might have doubts that a competitive monetary scheme could be able to guarantee price stability. On the other hand, it is unsure that it would gather wide acceptance.

Let me now turn to Hayek's second argument in favour of his proposal. This argument relates to the right people have to freely choose the terms of their contract.

4.2. Right to contract

Remember our two introductory questions. First, should there be one or several currencies circulating in parallel to each other within one definite monetary area? Second, should all of these currencies, a part of them, or none, count as legal tender? These questions relate to the legitimate use of the state coercive powers. Should the state open the door to monetary plurality? And can the state legitimately impose a single legal tender?

Hayek considers that there isn't any proper justification for the existence of a legal tender (Hayek [1976] 1990, 38). His central premise is that people have the right to use the currency of their choice for the fulfilment of a contract (Hayek [1979] 2008). He claims that "legal tender is simply a legal device to force people to accept in fulfilment of a contract something they never intended" (Hayek [1976] 1990, 39–40). It thus violates their right to set voluntarily the terms of a contract. Therefore, he argues that the state should refrain from imposing a legal tender.

For the same reason, he also rejects governments' (or central banks') monopoly over money, which, apart from its alleged disastrous consequences on inflation, also deprives individuals and private businesses from the right to issue and use the currency of their choice (Hayek [1976] 1990, 28–32). He claims that the state should open the door to monetary plurality in the form of the free competition of currencies.

This, in a nutshell, is Hayek's second argument in favour of his competitive monetary system: the right to contract freely entails leaving people free to choose the currency they want to use and to create money as they wish. In the following paragraphs, I raise three objections against Hayek's views. First, his scheme might fail to work in practice, because of the inability of competitive currencies to attract a sufficient number of users. Second, its argument is too restrictive: Hayek puts excessive weight on the right to contract

freely, which may have a series of negative consequences. Third, there exist alternative conceptions of the role of the state that justify the existence of a legal tender and of a state's monopoly over money.

(1) The first objection is that one can have doubts that opening up competition will effectively weaken the state's monopoly over money. On the one hand, as we have seen above, competitive currencies may fail to attract a sufficient number of users and, consequently, might neither be viable nor provide a credible non-inflationary alternative to state money. Existing alternative currencies, such as LETS or Bitcoin, have not, until now, attracted huge masses of people, and some strive to stay alive in the absence of wide adoption. One may also add to these empirical conjectures that the state will react against the pressure of concurrent currencies and protect its monopoly, in order to safeguard its advantages and the seigniorage revenues it gets from money creation (Friedman and Schwartz 1986, 45). It will not stay passive when faced with an attack from various competing currencies.

(2) The second objection concerns the central premise of Hayek's argument. He claims that people have the right to use the currency of their choice for the fulfilment of a contract. If that conception is right, then one cannot deny that imposing a legal tender and restricting access to money creation is an infringement of that right, for it compels people to accept one currency in payment, and prevents them from creating their own. However, one can contest that people do have such a right, at least in all instances.

First, there may be a need to limit the right of people to use the currency of their choice in order to secure the state's capacity to raise taxes. Taxation will still be possible under Hayek's scheme, but its implementation might increase in complexity, as the state will have to tax transactions taking place in possibly multiple fluctuating currencies. This might not be an issue for Hayek, whose libertarianism can certainly tolerate, or even welcome, such a problem. Indeed Hayek shares the libertarian view that only a very minimal state is required (Hayek [1944] 2007, 1960).

Second, strict respect for the right to choose one's currency freely might have several other negative consequences. People might make bad decisions: they might choose to trade in a currency whose value is very unstable and whose security is questionable. Bitcoin, which I shall study in depth in the Post-Scriptum, provides a real-world example of what trading in competitive unregulated currencies might mean. Bitcoin has two interesting features: first, its relatively great appeal to many unsatisfied users of official currencies; second, its instability and unreliability as a currency. During its golden age, in 2017, Bitcoin attracted a mass of traders who invested large sums of money in it. However, the dream of quick gains turned sour for many after its value fell sharply in the second semester of 2018. Moreover, recurrent fraud and security flaws severely weaken Bitcoin's safety as a store of value (see Post-Scriptum, sections 4.1 and 4.2). Since Bitcoin is entirely independent of governments, and because its management is wholly decentralised, no monetary policy could have attempted to stabilize its value and no government could have intervened to protect its users' assets.

Hayek might respond that it is everyone's responsibility to make the best use of available information. He could also reply that, overall, the beneficial consequences of competition are greater than its negative effects. Actually, this is one of Hayek's central thesis. For Hayek ([1973] 2013, 234), the competitive market order is "the only procedure yet discovered in which information widely dispersed (...) can be effectively utilized for the benefits of all". Hayek acknowledges that, as in every game, the market has its losers. Some people may make less successful plans or be hurt by unexpected adverse circumstances. However, he claims that such personal failures are in the nature of the market order and should not be compensated for. These "unmerited failures", he notes, are the price to pay for "a procedure that has greatly improved the chances of all to have their wants satisfied" (Hayek [1973] 2013, 234).

In sum, to those who point at the negative consequences of his proposal, Hayek could make two kinds of reply. First, he could respond by stressing the primacy of the right to choose freely the terms of a contract over its consequences. That deontological reply

disregards consequences and gives absolute priority to rights. However, to those who accuse him of putting excessive weight on that right, to those who oppose his deontological stance and who criticise his “right fetishism” (Van Parijs 1995, 15), Hayek could respond that giving everybody the right to choose one's currency will bring about benefits that outweigh the possible drawbacks of his proposal. Indeed, in addition to the general benefits of competition stressed above, Hayek claims that competition in money will generate a monetary system less prone to inflation. That second reply brings us back to the previous section, that is, to the consequentialist argument in favour of his proposal. However, that section concluded that it was rather unlikely that his proposal would bring about such benefits.

The debate between Hayek and his critics has, therefore, two components. One is empirical: do the benefits of its proposals really outweigh its drawbacks? In §4.1 above, I argued that the expected benefits of Hayek's proposal are unlikely to materialize while actual examples of unregulated currencies, such as Bitcoin, experience very concrete problems. This does not mean that Hayek is necessarily wrong, but that additional scientific work is required before we can confidently embrace his proposal. Second, the debate concerns the question of whether the consequences of enforcing the right to choose one's currency do really matter. Hayek is ambivalent on that regard. On the one hand, he seems to give priority to that right over its consequences. He repeatedly stresses the great value of that right, and of free contracts more generally. On the other hand, he also discusses at great length the benefits of free markets and of free competition in money. My own view is that one must balance the value of that right against its consequences. I already stressed that the sum of the benefits and the drawbacks of Hayek's proposal was likely to be negative. The third objection to Hayek's argument provides additional reasons to think so.

(3) The third objection insists on the good aspects of the current state's monopoly over money. I have already stressed that the great advantage of having a single currency that people cannot refuse to accept in payment is that it is far easier to manage. That claim

appeared first in the discussion of Lietaer's ecology of money (see above, §**Erreur ! Source du renvoi introuvable.**) and in the debate on the capacity of Hayek's proposal to achieve price stability (see above, §4.1). Each of these discussions shares the common conclusion that these authors put perhaps too much confidence in the "invisible hand" of the market and in the capacity of parallel currencies to reach equilibrium spontaneously, without any central intervention.³² These discussions also showed that their proposals would greatly hinder the government's capacity to intervene and to regulate monetary policy, as they would multiply the number of monetary institutions (private issuers of money) and of currencies within each monetary area. Together, the overconfidence in the virtues of self-regulation and the numerous hurdles for government intervention that these proposals would imply are likely to prevent them from delivering on their promises.

I would like to insist again on this objection because it targets something that Hayek and Lietaer have in common and which is very controversial in monetary economics. Actually, most economists express doubts on the capacity of financial markets to regulate themselves without any central intervention and argue for some state regulation of banks and the financial system, even if their opinions differ on the extent and strength of these regulations. Friedman and Schwartz (1986) argue that the state should provide some minimal regulations of the banking system, including "capital requirements, marking assets to market (using market rather than book values of assets), provision of information to the public, and double liability for shareholders" (Schwartz 1993, 366). Keynes argues that active counter-cyclical monetary policy may be necessary in times of economic downturns (Keynes 1936). Kindleberger (1978) makes the case for a lender of last resort, and Goodhart (1991) stresses the role of central banks to prevent runs and assure proper banking habits (See also Blinder 2010). An extreme scenario, in that direction, would follow from the 100% money proposal, which would make

³² I will also come back to this problem, but in a slightly different context, in chapter III, §2.4.

regulation even more central and more strict, by preventing banks from any money creation activities (Benes and Kumhof 2012). Without going that far, some authors have made the case to extend regulative powers to other actors, such as parliaments or civil society (Dietsch, Claveau, and Fontan 2018). Despite their divergences, all these authors would agree that some regulation is necessary. Abolishing the unity of the current monetary system and allowing people to refuse a currency in payment would severely threaten that possibility. It would either ban totally the possibility to intervene or make it extremely difficult.

5. Conclusion

This chapter focused on two proposals to transform the present monetary system in a radical way.

First, it discussed Lietaer's ecology of money. Lietaer and his co-authors argued that a monetary system constituted of a large array of alternative complementary currencies would be more resilient and less prone to crisis than the present monetary system. However, I argued that adequate empirical evidence supporting his claim was presently lacking and that his argument was suffering from important flaws. I showed that his analogy between natural and monetary ecosystems was unlikely to hold and that his argument was relying on overconfidence in the spontaneous capacity of his ecology of money to reach a stable equilibrium. Finally, I warned against the dangers of disregarding the importance of central regulation of monetary policy.

Second, I discussed Hayek's competitive monetary system. Hayek provides two reasons to forbid the state from intervening in monetary policy and from imposing a legal tender: avoiding the inflationary bias of state interventions and respecting the right to all to choose the terms of their contract. He claims that a competitive scheme would put better controls on inflation while ensuring that the right to contract is respected. I attempted to demonstrate that his scheme would most probably not achieve price stability while the strict enforcement of the right to contract freely would seriously endanger the capacity of the state to intervene in the economy. I also

argued, based on a rather consensual view in monetary economics, that imposing a legal tender and restricting people's freedom to issue their own currency was justified by the necessity for the state to intervene in monetary policy, even if the nature of its interventions are open to debates.

It is striking that both proposals are facing similar issues. First, neither of these proposals have, in practice, succeeded in attracting a significant number of proponents. People seem reluctant to use multiple currencies in parallel to each other, for a various number of possible reasons, including the long-standing habit of using legal tender money (Friedman and Schwartz 1986), the perceived cost of using various currencies (Aldridge and Patterson 2002), or their insufficient perceived benefits (Marshall and O'Neill 2018). We can, therefore, doubt that monetary plurality will be implemented in the near future. Second, both proposals rely on the confidence that monetary plurality will succeed in achieving a stable monetary system, without any significant interventions by the state. However, I stressed that that confidence may be overly exaggerated.

The doubts raised regarding Lietaer's and Hayek's proposals do not entail that we should renounce to build a just financial system. This chapter was not a defence of the status quo. Our present monetary system is far from perfect, as the recent financial and sovereign debt crises have shown (Turner 2016). However, neither Lietaer's nor Hayek's arguments could show that monetary plurality constitutes a valuable reform of the monetary system. They nevertheless encourage us to think more about the reasons that can legitimate state intervention in monetary policy and justify the imposition of a legal tender. This chapter was an attempt to contribute to this debate.

The next chapters aim to analyse other arguments in favour of alternative currencies and attempt to see whether they can provide effective reasons for their adoptions. These arguments have a more limited scope than those which were raised in this chapter. They do not apply to all alternative currencies, but to a subset of them only. Chapter III studies bounded currencies, chapter IV focuses on

certain arguments related to money and markets, and the post-scriptum focuses on Bitcoin and cryptocurrencies.

CHAPTER III: JUSTICE AND THE LIMITS OF MONEY

1. Introduction

In chapter I, §4.3, we have seen that some currencies, such as the euro or the dollar, are universal means of exchange, potentially valid for any kinds of goods or services from any origin. Others are bounded means of exchange: their purchasing power is limited to a certain geographic area, to a certain community, or to certain goods. Examples of the latter include LETS, Local Currencies, Air Miles and Meal vouchers. LETS are systems of exchange of goods and services between members of a specific group or community. Local currencies circulate within a confined geographic area and can only be used for the purchase of goods produced locally. Air Miles and Meal vouchers can be used to buy specific goods (airline tickets and specific food products, respectively).

The literature on these currencies usually focuses on evaluating their empirical impacts on society and the environment (e.g. Marshall and O'Neill 2018; Michel and Hudon 2015; Place and Bindewald 2015). Recently, some worked attempted to describe the moral motivations of citizens and organizations supporting such initiatives (e.g. Blanc and Fare 2016; C. Meyer and Hudon 2018). The aim and method of this chapter are different. It uses the methods of political philosophy in order to discuss one specific ethical issue that lies at the heart of bounded currencies: to what extent money's purchasing power ought to be limited according to geographic, communitarian

or other specific criteria? In practice, this question translates into three possible scenarios.

First, one could replace the current monetary system by another, radically different, that would rest entirely on multiple bounded currencies, each operating at a different geographic level, in parallel to one another. That “strong policy” would impose that all currencies become bounded currencies. This scenario might seem unrealistic or excessively coercive. However, studying it closely will help to understand more clearly what could happen if money’s purchasing power was strictly limited. Actually, no author goes as far as proposing that radical and coercive policy, but some argue for restricting money’s purchasing power significantly and for increasing substantially the weight of bounded currencies in the economy (Arnsperger 2017; Douthwaite 2012).³³ These authors contend that such restrictions are crucial to safeguard a sustainable economic system, as it would allow to keep the economy within the ecological and resource limits of the planet.

This first coercive scenario does not correspond to what most proponents of alternative currencies would advocate for. More modestly, they encourage the bottom-up development of voluntary bounded currency initiatives, as a complement to the dominant monetary system (Attout et al. 2013; Derudder 2014; Kalinowski 2012). They contend that small scale projects can have potentially significant environmental (Seyfang and Longhurst 2013), economic (C. C. Williams 1996a; Peacock 2006) and social impacts (Oliver Sanz 2016), even if these initiatives do not challenge the current monetary system.

Finally, some authors argue that bounded currencies (or a part of them) should rather be conceived as a way to express people’s discontent against the present monetary system. They contend that their main purpose and their main impact is to generate debate and

³³ Their proposals resemble Lietaer’s ecology of money. However, as we have seen in chapter II, §3, Lietaer’s scenario does not restrict itself to bounded currencies, but includes all kinds of alternative currencies.

critical knowledge on money, capitalism and the market economy (Blanc 2015, 2016, 2018a; North 2006, 2007).

This chapter reviews critically these three scenarios. Its central claim is that monetary arrangements should conform to social justice, which I shall define as the fair distribution of the real opportunities to pursue one's own reasonable life's plans. This chapter attempts to defend this conception of justice and raises some doubts on the relevance of limiting money's purchasing power according to geographical or communitarian criteria.

Section 2 shows that the first scenario would severely limit everyone's opportunities, increase the monetary system's complexity while hindering the implementation of redistributive policies. It also contends that the restrictions it imposes on people and on states are disproportionate to their aim, for there exist other policy options that better combine respect for justice and environmental protection. Finally, it emphasises the trade-off between what geographic or communitarian limitations can achieve and how they impact justice. Increasing the scope and the strength of these restrictions would probably greatly increase their impact on the economy, or the environment, but at the expense of justice. As section 3 will show, however, if the scale at which bounded currencies circulate remain low, both their impacts on social justice and on the economy are likely to be insignificant. Therefore, the second strategy is unlikely to bring about any significant benefits. Finally, section 4 questions the view that bounded currencies can be effective channels of contestation.

The general conclusion of this chapter will be that, even if general limitations on money's purchasing power are undesirable, there is no reason for the state to forbid the developments of small-scale bottom-up experiments. However, there is hardly any reason to encourage them either.

2. The strong policy

2.1. The argument

As we have seen in chapter I, §4.3, universal currencies are acceptable in payment for virtually all goods and services available on any market, without intentional limitations or predefined purposes. Bounded currencies, on the contrary, are currencies whose possible uses are limited according to some geographic area (i.e., they are valid only for goods produced locally) or to communitarian criteria (i.e., they are valid only for exchanges between members), or to specific goods or services (e.g. Meal vouchers and Air Miles).

Some authors contend that imposing such restrictions on money's purchasing power is crucial to safeguard a sustainable economic system (Douthwaite 2012; Arnsperger 2017). How exactly should money's purchasing power be restricted? Arnsperger and Douthwaite are not always clear on the exact nature of their proposal.³⁴ Sometimes, Douthwaite argues for a monetary system entirely constituted of bounded currencies, each restricted to a town or region, and convertible into each other (e.g. Douthwaite 2012). That is what I call the "strong policy", as it involves coercion: people would have no choice but to use bounded currencies. Arnsperger is less radical and leaves some space for official currencies (e.g. Arnsperger 2011). However, both also advocate the creation of a single "energy-backed" currency, whose creation would be limited according to the availability of "energy" (e.g. Arnsperger 2017; Douthwaite 2000). The latter proposal entails that, similarly to a gold standard, the amount of money created is directly linked to the availability of a given resource (here "energy", not gold).

I will not study the latter proposal in detail here (For a deeper look at this proposal, see Collins, Schuster, and Greenham 2013). Indeed,

³⁴ Arnsperger, in particular, has made several, and sometimes contradictory, proposals. He is an advocate of Lietaer's ecology of money (see chapter II), of energy-backed currencies and also of a significant generalization of bounded currencies. It is not clear, though, that these proposals are mutually compatible. For instance, leaving each region or local community create its own money may conflict with the global limitation imposed on money creation by the "energy-standard".

the “energy-backed currency” proposal seems very unlikely to achieve sustainability. After all, for more than a century, the gold standard severely restricted money creation while allowing capitalism to flourish in a way that was very detrimental to nature.³⁵ Why would an “energy-standard” fare better? I will, therefore, focus on a “strong”, coercive, policy that would transform the present monetary system into a monetary system relying exclusively on multiple bounded currencies, each operating at a different geographic level, in parallel to one another. This policy proposal would imply banning universal currencies and coercing people into accepting and using bounded currencies instead. I do not exclude that the strong policy might perhaps be more radical than what Arnsperger and Douthwaite have in mind. However, the strong policy should be seen as illustrating an extreme scenario that will help to make clear the potential implications of strictly restricting money’s purchasing power. Examining what a hypothetical generalization of bounded currencies entails will allow to determine whether we can have reasons to encourage their growth.

Why impose strict restrictions on money’s purchasing power? Arnsperger’s and Douthwaite’s argument starts from the empirical premise that our current economic system exploits natural resources and ecosystems beyond what the planet can sustainably endure. This premise is largely supported by empirical evidence. For instance, Rockström et al. (2009) and Steffen et al. (2015) identify nine planetary boundaries that “define the safe operating space for humanity with respect to the Earth system” (Rockström et al. 2009, 472).³⁶ They show that “if these thresholds are crossed, then

³⁵ On the Gold Standard, see Polanyi ([1944] 2001, 21–32). On the effect of 19th century capitalism on nature, see Foster (2000, 2011). Note that anchoring monetary creation to a commodity or energy standard differs completely from putting limits to production by setting maximum pollution targets or CO₂ quotas. The former restricts monetary creation but leaves people free to use money for whatever purposes (including polluting ones) while the latter restricts pollution more directly. An energy-standard would lead to restricting credit, and therefore economic activities, but it would not put any absolute barrier to pollution or energy consumption.

³⁶ These boundaries refer to the nitrogen cycle, climate change, biodiversity loss, atmospheric aerosol loading, chemical pollution, ocean acidification, stratospheric ozone depletion, the phosphorus cycle, global freshwater use and change in land use.

important subsystems, such as a monsoon system, could shift into a new state, often with deleterious or potentially even disastrous consequences” (Rockström et al. 2009, 472). These authors show that three of these boundaries have already been overstepped (climate change, biodiversity loss, and nitrogen cycle).

The argument goes on with the claims that we ought to keep our economic system within sustainable boundaries and that reforming the monetary system is one essential means to do so. By strictly restricting the use of money locally, or within the bounds of a community, or to certain products, one could reduce the world’s exploitation of resources and achieve sustainability.

In this section, I assume that the empirical evidence on sustainability is indeed overwhelming and that one ought to keep the economic system within sustainable boundaries. I shall only discuss the claim that restricting money’s purchasing power is the only (or the most desirable) means to achieve this aim. Beforehand, let me specify more clearly what this first scenario would imply.

An important aspect of this scenario concerns the extent to which bounded currencies can be converted into universal currencies and into each other. Arnsperger and Douthwaite take for granted that, in their ideal scenario, all currencies would be convertible into each other (Douthwaite 2012, 191–92; Arnsperger 2011, 10). However, this would contradict their purpose of restricting the use of money locally, or within a community. Making bounded currencies fully convertible into each other, or into universal currencies, would seriously weaken their ability to constrain economic exchanges. If anyone can exchange one’s local currency for another, then everyone will be able to avoid all restrictions on the use of money. Therefore, if it is to be consistent, the strong policy must require that none of these currencies should be convertible into each other.

The remaining of this section is a critique of the strong case in favour of limiting money’s purchasing power locally, or within a community, or to some specific goods. It starts by explaining why money matters for justice (§2.2) and by delineating the principles of

justice underlying my critique (§2.3). Then it stresses two reasons for which the first scenario conflicts with justice (§2.4).

2.2. Why money matters for justice

I shall take as a starting point Rawls' concept of social justice. Rawls ([1971] 2005, 4) writes that “[the principles of social justice] provide a way of assigning rights and duties in the basic institutions of society and they define the appropriate distribution of the benefits and burdens of social cooperation”. In this thesis, I will also follow Rawls's view that justice is primarily concerned with the just arrangement of the main social and economic institutions (what Rawls calls the “basic structure”) and with the way these institutions affect the distribution of rights, powers and opportunities (Rawls [1971] 2005, 7).³⁷ These institutions include the political constitution and the legal system, among others. They are of special importance to justice because they distribute the main benefits and burdens of social life. This section argues that money is one of these social institutions and that it is thus part of the basic structure.

First, as we have seen in chapter II, §4.2, regulating money creation and designing monetary policies entail coercion, that is, the use of force or threat of force. For instance, the existence of a legal tender supposes that people can be coerced into accepting one currency in payment. Similarly, banking regulations also presuppose the possibility to force banks to abide by such rules. Clearly, the management of money creation and the regulation of monetary policy interfere with people's freedom. This gives a first reason to treat money as a part of the basic structure.³⁸

A second reason comes from the fact that the distribution of monetary incomes and wealth has a crucial influence on people's opportunities and powers. Money is a means that is determinant to

³⁷ This position is not uncontroversial. For a critique, see Cohen (2000, 2008).

³⁸ There is an important debate on what makes an institution part of the basic structure (See G. A. Cohen 2000, 136–42; A. Williams 1998). That debate is beyond the scope of this chapter, though. In this chapter, I assume that an institution is a part of the basic structure if one of these two conditions holds: either it is a coercive institution, or it is an institution that participate in the distribution of powers and opportunities.

social and economic opportunities, to what people can do throughout their entire life. Clearly, it is one of the main means for people to lead the life they wish to live and for the state to affect people's opportunities (through taxation and redistribution). The distribution of money (of incomes and wealth) also has an important impact on the distribution of powers. The unequal distribution of money gives to richer members of society the possibility to take advantage of others. Lack of money may force people to accept unfair deals or repugnant jobs, which they would refuse to hold were they not suffering from a lack of income. Money may also buy votes, power and political privileges (Okun 1975, 23–28; Walzer 1983, 22) so that the rich may control both the economic and the political sphere.

However, access to opportunities and to political powers through money depends on several factors, including how market dependent society has become. The distribution of money will matter less in a society in which it gives access to very few goods than in a society that relies heavily on market relations. Crucially, access to opportunities and powers also depends on money's polyvalence as a means of exchange. Universal currencies (which can potentially buy anything available on any market) give access to more opportunities and more powers than bounded currencies (whose purchasing power is limited).

This is why the way money is conceived matters for justice. Universality (or lack of universality) is the crucial factor here. Indeed, the way in which the distribution of money affects the distribution of powers and opportunities depends on money's polyvalence. That point is at the centre of the two next sections.

2.3. Social Justice

Money, therefore, matters for justice and monetary arrangements should conform to justice. But what does justice require? This section contends that justice entails the fair distribution of the real opportunities to pursue one's own reasonable life's plans.

First, what is a fair distribution? Some philosophers argue that justice consists in making sure that everyone has enough

(sufficientarianism)³⁹, others argue that justice entails the absence of exploitation⁴⁰, still others that it is the maximization of overall welfare (utilitarianism)⁴¹. My view belongs to a fourth conception of justice: egalitarianism, or the view that justice requires that “something” (which I will discuss below) be distributed equally. Among egalitarians, there is a recurrent debate on the right extent of equality and on the right pattern of distribution. Some are in favour of radical distributive equality (e.g. G. A. Cohen 2008) while others leave room for possible acceptable inequalities (e.g. Rawls [1971] 2005).⁴² I shall not propose a new theory of distributive equality. I simply assume that market societies generate substantial inequalities of power and of opportunity, of the form discussed in the previous subsection (§2.2), and that the existence of such inequalities makes some redistribution necessary.

Second, egalitarians also disagree about what exactly should be distributed. For instance, Rawls defends the view that a complex index of primary goods is the proper distribuendum (1982, [1971] 2005, 90–95). According to Rawls, these are the goods that free citizens need for the pursuit of a wide array of different conceptions of the good life. The list of primary goods include the basic rights and liberties, powers and prerogatives, income and wealth, and the social bases of self-respect. Dworkin (2000), on the other hand, concentrates on resources while Sen (1985, 1992) insists on capabilities, that is, on “people’s real opportunities to do and be what they have reason to value” (Robeyns 2016).⁴³

Even if these authors do not share a common conception of what ought to be distributed, they all stress that one of the main purposes of justice is to endow all individuals with the real opportunity to pursue their own reasonable life’s plan. I take this objective to be

³⁹ On sufficientarianism, see Frankfurt (2015), Shields (2016), and Gosseries (2011).

⁴⁰ On exploitation, see Vrousalis (2017).

⁴¹ On utilitarianism, see Sen and Williams (1982), Hare (1982) and Harsanyi (1976).

⁴² On the variety of egalitarian thought, see Arneson (2013), O’Neill (2008b), Roemer (2017) and Scanlon (2017).

⁴³ There exist many other egalitarian accounts of the adequate currency of justice, which I do not discuss here. See, among others, Arneson’s (1989), Cohen’s (2011) and Van Parijs’ (1995) accounts.

common to Rawls ([1971] 2005), Dworkin (1985, 2000, 65–119), Sen (1992) and Van Parijs (1995), among others. Dworkin (1985, 192) claims that resources should be “devoted to satisfying the ambitions” of each individual. Sen (1992, 36) emphasises the importance of providing people with the adequate “means to freedom”, which echoes Rawls’ claim that political liberalism should guarantee “sufficient all-purpose means for citizens to make intelligent and effective use of their freedoms” (Rawls [1993] 2005, xxxix. See also p. 187ff). In a similar vein, Van Parijs (1995, 25) claims that a just society is one in which “each person has the greatest possible opportunity to do whatever she might want to do.”

Therefore, I shall stick to the quite broad claim that society should distribute to all, in a fair way, the means that confer to each individual the real opportunity to pursue his or her reasonable life’s plans. An opportunity is real if it entails both the formal freedom (i.e. absence of legal constraints) and the concrete possibility to perform some action or to have access to some good. One may have the concrete possibility, that is, the adequate means, to perform an act without having the formal freedom to perform it (e.g. theft). One may also have the formal freedom without the concrete possibility (e.g. buy a house). So both conditions are necessary and sufficient to define a real opportunity.⁴⁴

Finally, note that, in the quotes above, Rawls insists on the “intelligent” use of freedom and that Sen attaches great importance to people’s opportunities to do “what they have reasons to value”. That is, life’s plans should be in some sense reasonable, which means that people should have reasons to embrace them, that they should be capable of reflecting upon their conception of the good life. It also means that these life’s plans may be revised if it happens that they harm others in an unjustified way or if they do not comply with the demands of a just society. The latter point entails that justice does allow for some limitations of people’s opportunities in some specific cases. A paradigmatic case, which I shall discuss later in this chapter,

⁴⁴ On this distinction between formal freedom and real freedom, see Van Parijs (1995, 23–24) and Cohen (2011, 173–78).

is the case of environmental harm, which provides very good reasons to limit some people's opportunity to pollute in order to protect others' (including future generations).

2.4. Critique

Let's come back to the initial question of this chapter. To what extent should money's purchasing power be limited according to geographic, communitarian criteria, or to specific goods? Recall that this chapter will consider three proposals related to this question: a radical proposal to generalise the use of bounded currencies; a modest proposal to complement the current monetary system by small-scale experiments; and an even more modest proposal to promote bounded currencies as tools for the collective construction of critical knowledge about markets and capitalism. This section examines the first scenario, which bans universal currencies and imposes that all currencies are bounded currencies, so that money's purchasing power is restricted as much as possible. Recall that the main argument in its favour is its expected capacity to prevent the world's economy to overstep the earth's ecological limits.

Even if imposing limits on the purchasing power of money might actually achieve this goal, we must balance it against its potential threats to social justice. I will show that there are several tensions between the possible environmental achievements of this proposal and its harmful consequences on justice. As we shall see, the strength of these tensions is partly an empirical matter (are these achievements real and effective?), partly an issue of values (do environmental benefits outweigh the harms done to justice?).

First, I argue that this proposal would restrict people's opportunities in a way that cannot be justified by the necessity to achieve a more sustainable economy. In fact, other policies could achieve the same goal with a lesser impact on opportunities. Second, I show that it would make redistributive policies either impossible or so complex that restricting money's purchasing power would lose any relevance.

Why do I focus on the environmental objective of the strong policy and not on other potential benefits? First, that objective is at

the heart of Arnsperger's and Douthwaite's defence of their proposal. Since my purpose is to examine their arguments, I shall stick to the environmental benefits of these currencies. It is true that, when they are considered as small-scale initiatives, bounded currencies are also praised for their potential effects on social cohesion. However, I have never encountered any defence of the strong policy based on those potential benefits. Finally, Chapter IV will study how bounded currencies relate with the value of community and fraternity. This chapter, therefore, focuses on the environmental case for the strong policy.

2.4.1. Opportunities

First, limiting the purchasing power of money to a specific area or community would restrict what a person's income and wealth can buy, that is, his or her opportunities. Clearly, when you receive a 100€ bill, your possibilities are much larger than when you receive a voucher only valid locally or within a specific community. The strong policy, which makes the entire monetary system subject to such restrictions, would sharply reduce people's opportunities. However, even weaker policies would lead to similar harms. Indeed, the more the purchasing power of a currency is constrained (that is, the more one approaches the strong policy) the more it restrains what people can do with their money.

The proponents of the strong policy would reply that the entire point of their proposal is to restrict people's opportunities, so as to keep the economy within the ecological limits of the planet. However, one could wonder if that environmental goal really requires such restrictions. A theory of justice that calls for the fair distribution of real opportunities among all citizens would certainly advocate some regulations to avoid such environmental harms. It need not require the abandonment of the universality of money, though. Actually, there exist other policy options, such as environmental taxation, that can achieve the same aim with fewer restrictions.

Let me summarise my argument as follows. I shall argue that taxation is a better option than the strong policy for at least two

reasons: first, it better safeguards people's formal freedom and, second, it makes people pay for the cost that their actions entail for others. A third reason might be that taxation achieves better results than bounded currencies. However, we lack empirical evidence on the efficiency of these proposals. Therefore, I will assume, for the sake of the argument, that taxation and bounded currencies can both achieve sustainability with the same effectiveness. While these two policies might have a similar impact on the environment, taxation restricts people's freedom less than the strong policy while making people pay for the costs that their actions entail for others. This shows that one need not renounce to money's universality in order to achieve sustainability and that the strong policy is both unjustly and unnecessarily restrictive.

I acknowledge that assuming that taxation and the strong policy have similar effects on the environment is not uncontroversial. Many would argue that environmental taxation is not enough to achieve overall sustainability. For instance, Gadrey and Laluck (2015) claim that environmental taxation, though necessary, makes only for a small part of the necessary reforms towards a sustainable economy. They defend other measures such as the promotion of individual frugality, investments in renewable energy, divestment from fossil fuels, etc. Note, first, that taxation is perfectly compatible with the latter options. More importantly, an all-bounded-currency world has not proven its efficacy either. So far, existing experiments of bounded currencies have not impacted the economy in a significant way (e.g. Michel and Hudon 2015). Moreover, as I argued at length in chapter II, one can have doubts that a monetary system consisting of multiple bounded currencies circulating in parallel to each other would be easy to handle. Should each currency require its own central bank and supervisory institutions, or should one central authority take care of the management of the entire system, these tasks would demand an immense and complex administrative machinery that could significantly reduce the efficiency of the strong policy.

For the sake of the argument, I shall stay agnostic and assume that taxation and the strong policy are equally able to achieve the same objective. Neither options have been applied on a wide scale so that

it is impossible to know with certitude how effective each option can be. Given this assumption, which option should one favour? Note that each policy involves a different distribution of the burdens of reducing environmental harm. Taxation increases the opportunity cost of consumption and/or production for those who cause harm while the strong policy bans entirely certain forms of trade. One can, therefore, phrase the issue as finding the distribution of burdens that is the more just, keeping aside the issue of efficiency.

My argument starts from the premise that justice demands the fair distribution of real opportunities. That premise does not tell us whether everyone should have a maximum amount of real opportunities, or a sufficient amount, or an equal amount, or whether some individuals (the least advantaged, for instance) should be given priority. I will, therefore, complement my conception of justice with two additional principles.

Recall that I defined a real opportunity as requiring both the formal freedom and the concrete possibility to perform an act (See §2.3 above). The problem is that different environmental policies affect different people's concrete possibilities differently (their income, their wealth, or their knowledge, for instance). Moreover, different persons usually have different plans of life, and so wish to perform very different acts, in very different ways. However, in a society of equals, the way a given policy affects different individuals' formal freedom does not vary across persons (or not much). The law applies to everyone equally. So one can compare how different policies affect people's formal freedom.

The first additional premise builds on the latter point. It states that, among policies that have the same impact on the environment, one should favour the policy that restricts the least people's formal freedom to perform an action. This is not a libertarian claim: there are very good reasons to restrict people's formal freedom. Protecting the environment from pollution is one of these. However, provided that there exist different policies with the same impact on the environment, we should choose the one that restricts people's formal freedom the less. That premise is not very demanding, for it rests on

the condition that the compared policies have a similar impact on the environment. Since I assume that this condition is met here, I will not have to examine the impacts that these policies may have on different other variables and the complex trade-offs that this might entail.

This premise might suffice to make a comparison between different environmental policies. I would like to go a little further, though. As I said, different policies affect people's concrete possibilities differently. For instance, for a given target of pollution reduction, some policies will put the burden entailed by that reduction more on some people than on others (for instance, more on multinationals, or more on consumers). Some people's concrete possibilities (their income, for instance) will thus be reduced while others' capacities will be enhanced. Since it may be impossible to compare how different people value their life's plans and their opportunities, it might also be impossible to determine which policy safeguards the greatest overall amount of concrete possibilities for its members (or which policy reduces them the most). However, one could compare different policies with regard to how they distribute these possibilities. How should they be distributed? How should the burdens of reducing environmental harm be distributed?

I will make use of a constrained version of the "polluter pays" principle. My second additional premise states that, if everything else is given, one should favour the policy that treats people according to how their actions impact others.⁴⁵ Those whose actions entail important costs for others (e.g. pollution) should pay for it. Again, that premise is conditional on the fact that the considered policies have the same effects on everything but on real opportunities.

Why choose these two premises? First, they express rather weak requirements, in so far as they are conditional on a "ceteris paribus"

⁴⁵ Dworkin also defends a version of that principle, which he calls the principle of special responsibility (Dworkin 2000, 5–6). This principle is one of the core treat of his theory of justice. My premise is far less demanding. First, it applies only to policy choice, not to the entire realm of justice. Second, it is conditional on a policy having a given impact on everything else but opportunities. On responsibility, see also Fleurbaey and Maniquet (2011) and Roemer (1998).

clause. Second, they prevent me from choosing a stronger, and perhaps more controversial, distributive pattern (strict equality, sufficiency, etc). Third, these two premises are in line with very basic and widely shared principles. The first relies on a general presumption in favour of liberty. It only implies that, among similar alternatives, we must choose the one that constrains people's formal freedom the less. The second premise is a weak version of the principle according to which people should be held responsible for the cost that their choices entail for others. That principle implies that if I decide to consume a good that pollutes more, I should be held responsible for it. In this chapter, though, it is restricted to policy choice conditional to the fact that policy alternatives are similar in all respects except one (i.e. the distribution of opportunities). These two premises are not primary requirements of justice in all circumstances, but only criteria to be applied when choosing among different *similar* alternatives. Their use is only comparative.

Are these two premises compatible? One could perhaps find a policy that would involve a low level of coercion but a very unjust distribution of burdens. Environmental taxation, however, fulfils both requirements. It might restrict people formal freedom but less than the strong policy. And it makes those who cause harm pay for it. In some cases, the social or environmental cost of producing, transporting or consuming a given product may be so high that it would require punishing rates of taxation or the complete ban of the product. In general, however, taxation maintains the formal freedom to do whatever one wants to do (including the consumption of polluting goods) while making the concrete possibility to consume or produce a function of its cost for others. The greater that cost, the greater the tax, and the lower the concrete possibility to consume or produce a given product.

On the contrary, the strong policy would severely restrict the formal freedom of consuming goods produced outside the local or the community level, whatever the cost that the enjoyment of such opportunities would imply for others or the environment. Actually, it would put the burden of reducing one's consumption on the

benevolent and the polluter indistinctively. In fact, it is interesting to note that, currently, bounded currencies put the burden of reducing the environmental harms of consumption on the benevolent, not on the polluter. As their use is generally purely voluntary, only those who wish to pay the cost of consuming local products and renouncing to global ones will effectively pay it. That generous attitude might be praiseworthy but should not become a generalised rule for monetary policy. It would be unjust to make the benevolent pay for the harmful consequences of an act that he or she may not be responsible for. That is, however, what the strong policy would entail. It would impose the same restrictions on every economic agent, indistinctively, whatever one's consumer behaviour.

In sum, if we assume that both policies have the same likelihood to fulfil their environmental objective, taxing people for the harmful impact of their behaviour on the environment might yield a better combination of freedom and responsibility than the introduction of bounded currencies. It better respects people's formal freedom while making people pay for the cost that their consumption or production entails for others. In short, the universality of money and environmental sustainability are not necessarily incompatible. They might be no need to renounce to money's universality in order to achieve sustainability.

In response to my argument, one could argue that the burden of tax might fall disproportionately on the poor. For instance, a flat tax on motor fuels may hit the poor more than the rich because it reduces the disposable income of the former proportionally more than the latter. However, the distributional consequences of environmental taxation could be addressed by income redistribution (Boyce 2018). Environmental policies and distributive policies need not conflict with each other. Actually, a mix of environmental taxation and redistributive policies will respect freedom, responsibility *and fairness* much more than the strong policy. For the latter might make the poor much worse off than they are now, by strictly restricting their real opportunities. However, as we shall see in the next paragraphs, the possibility to compensate for such losses through income redistribution would be considerably threatened by

the strong policy. Contrary to environmental taxation, the strong policy cannot (or with great difficulties) appeal to income redistribution to compensate for its potential detrimental effects on the most disadvantaged members of society.

2.4.2. Redistribution

Restricting the purchasing power of money according to geographic or communitarian criteria would harm justice for a second reason. As we have seen, market societies generate substantial unjust inequalities of power and of opportunity. Justice demands to reduce these inequalities, in part through taxation and redistribution of incomes and wealth.⁴⁶ The strong policy would greatly undermine the mere possibility to implement redistributive policies or make redistribution so complex that restricting money's purchasing power would lose any relevance.

Redistributive policies rest on the capacity of the state to tax some people's incomes in order to redistribute them to other people. Taxation requires that all incomes are commensurable to each other: each person's income needs to be measured in a common unit so that all incomes are comparable, whatever the currency in which they are paid. Redistribution requires that currencies are convertible into each other: otherwise, incomes taxed in area A in the form of currency A could not be transferred to area B under another monetary form. Redistribution must take the form of money payments labelled in the currency effectively used by the receiver: unconvertible currencies are worthless outside of their town or community of origin.

⁴⁶ Justice could also demand more radical reforms of the economic system. Inequalities can be dealt with *ex ante* rather than *ex post*, with predistribution rather than redistribution. Distributing powers and prerogatives before the economic game has started (for instance, through the creation of worker-owned cooperatives and the promotion of economic democracy) could significantly reduce inequalities of power and of opportunity while making *ex-post* redistribution less necessary (See O'Neill 2008a; O'Neill and Williamson 2012; Vrousalis 2019). It does not rule out completely the need for redistributive policies, however, as inequalities can still arise despite such arrangements.

Bounded currencies can have an effective impact on the economy or the environment only if they restrain economic activities locally, or within a given community, or to certain goods. This implies that their convertibility must be limited, for otherwise one could easily avoid local restrictions by exchanging local money for universal money. Therefore, the strong policy would seriously impede redistributive policies. Consider an economy in which each town or region has its own currency only valid locally and in which, therefore, all exchanges take place locally. In this scenario, redistribution also takes place locally: each town's rich citizens pay taxes and each town's poor citizens receive transfers funded by those local taxes. Redistribution beyond the local level is impossible, for local currencies have no value outside a given geographic area.⁴⁷ Whether the right scope of redistribution is national or whether it transcends national borders, the strong policy would hinder redistributive policies in both cases.⁴⁸

One could reply that I am misinterpreting the strong policy. The proposal could retain some scope for universal currencies (enough for tax payments), provided that they keep a limited weight within the economy. Nowadays, after all, exchanges and incomes labelled in bounded currencies are taxed according to the law prevailing in the country where they take place. For instance, in Belgium, exchanges in local currencies are subject to a VAT tax and incomes received in such currencies to an income tax (Attout et al. 2013, 67–91). However, the law currently does not allow taxes to be paid in these currencies, so firms must carry out a sufficient part of their sales in euros.⁴⁹

⁴⁷ Discussing the proper geographic extent of redistribution is beyond the scope of this chapter. Some argue that redistribution should take place globally (e.g. Pogge 2002), others that it should remain within national borders (e.g. Nagel 2005). For a review of these positions, see Culp (2014).

⁴⁸ Of course, the possibility to tax and transfer does not necessarily translate into effective redistribution. Currently, rich countries do not transfer as much wealth to poor regions as they possibly could. The strong policy, however, would impede the mere possibility of redistributing wealth within a wider political entity, whatever the desired level of redistribution.

⁴⁹ Note that there are many possible tax exemptions, mostly in cases where these exchanges take place “informally” (Attout et al. 2013, 71). Time Banks and most LETS

The problem is that this slight change in the design of the strong policy would seriously undermine its capacity to effectively achieve its purpose. As I have argued above, the capacity of the strong policy to effectively achieve sustainability depends on the ability of bounded currencies to restrict exchanges locally. The less the restrictions apply, the less they will hinder distributive policies. That is, the more bounded currencies are convertible into other currencies, or the greater the space left to universal currencies, the lower their impact on justice. However, looser restrictions also mean that the strong policy will be less likely to achieve its goal: allowing people to exchange or pay taxes in universal currencies will weaken the strong policy's ability to effectively restrict exchanges locally or within a community.

In short, there is a trade-off between the possible achievements of the strong policy and the requirements of just redistributive policies. The implementation of redistributive policies, on the one hand, calls for limiting the weight of bounded currencies in the economy. The environmental goal of the strong policy, on the other hand, appears to require a wider expansion of these currencies. What side of the dilemma should we choose? Actually, there is no need to sacrifice income distribution for environmental objectives. That dilemma is at the heart of the strong policy, but not necessarily inherent to other environmental policies. Environmental taxation, for instance, can go along with income redistribution and aim at sustainability at the same time (e.g. Boyce 2018). To the extent that we can implement policies that do not as much impede redistributive policies and that serve the same purpose, such as environmental taxes, we must call for restricting the scope of bounded currencies.

In response, one could argue that the strong policy need not be incompatible with income redistribution. One could achieve commensurability and convertibility through a complex system of

escape taxation (Bowring 1998, 109; Cahn 2001, 3), and Meal vouchers usually benefit from advantageous tax treatment as well. Finally, when currencies are not convertible, there is no standard defining how to value them, and therefore, no way to know how to tax exchanges labelled in such currencies (Attout et al. 2013, 75). It means that, in practice, many exchanges taking place within these schemes are exempt from taxation.

multiple exchange rates (one for each currency compared to the central unit of value), which would need to take into account each currency's purchasing power. A central agency could be in charge of computing and publishing these exchange rates. There could also be an exchange market for bounded currencies, only available to state authorities. The state could then tax incomes labelled in numerous kinds of different currencies, compute their relative value, exchange them on the market, and then redistribute them throughout the country.

One can expect that this complex scheme will raise many practical difficulties and give rise to a huge bureaucratic machinery. It might also weaken the possibility to restrict a currency's purchasing power, as exchange markets will enable people to bypass such restrictions. In sum, it is hard to imagine how the strong policy could be made compatible with justice in a way that is neither too complex nor a threat to its core objective. Building a more environmentally friendly economy is certainly a desirable goal, but achieving such a goal through restricting the purchasing power of money might be both undesirable and unnecessary compared to other alternative policies.

3. The bottom-up strategy

The previous section argued against the generalization of bounded currencies. The greater the weight of these currencies in the economy, the more they will conflict with the fair distribution of real opportunities. Moreover, generalizing their use is unnecessary for achieving its environmental objectives, as there exists at least one alternative (environmental taxation) that better combines social justice and environmental achievements.

However, most proponents of bounded currencies do not support the strong policy (e.g. Attout et al. 2013; Derudder 2014; Kalinowski 2012). Rather than imposing the use of bounded currencies "from above", they generally defend a more moderate strategy, which relies on voluntary bottom-up and small-scale experiments, at the margin of the dominant capitalist economy. Though there is no reason to oppose such experiments, I shall argue that there is no reason to encourage them either.

There is no reason to ban bounded currencies altogether. On the one hand, if the size of such experiments stays small, they will not have any serious impact on justice. On the other hand, liberal democracies guarantee the right of free association. This right includes the freedom to join and create small-scale local experiments, such as local currency schemes or LETS. I do not intend to ban gifts or informal exchanges. I do not want to blame employers who offer small in-kind benefits to their employees, or people who exchange gifts with their neighbours and relatives. Similarly, I admit that many employees, merchants and consumers may well freely agree to accept such currencies in payment or find value in their voluntary involvement in small-scale alternative currency schemes.

What reasons can we find to encourage such experiments? Their proponents claim that, because they restrict exchanges locally, or within a community, or to certain goods, bounded currencies can best serve certain social, environmental or economic purposes, even at a relatively small scale. For instance, LETS and Local currencies are usually put forward as means of social integration, which foster informal exchanges and mutual assistance, thanks to the fact that they circulate only within a given community of users (Servet et al. 1999). Local currencies may also exhibit some economic benefits for local and regional economies, by helping local producers and fostering local exchanges (Gómez 2009; Gregory 2009; Studer 1998; C. C. Williams 1996a). These currencies also provide benefits for private actors. Meal vouchers, for instance, enable to raise employee benefits, but at a low cost for firms. Air Miles, on the other hand, give frequent customers an incentive to keep flying with the same company and form an important part of the firms' marketing strategy.

Note that the economic, social and environmental benefits of these currencies are conditional on the fact that they effectively restrict the purchasing power of money to the local economy or to specific goods. If local currencies could buy any good produced worldwide, their impact on the local economy would disappear. Similarly, Air Miles would miss their target if they could buy tickets of any company. In sum, the less they are convertible, the greater

their potential impact. As we have seen in chapter I, §4.3, there is a wide variety of cases in this regard. Most LETS, Meal vouchers and Air Miles simply cannot be exchanged for universal currencies, whereas many local currencies can, but at some cost. While the possibility to convert one's money might reassure potential users, it also undermines the capacity of these currencies to effectively impact the economy or the environment, as people can escape local restrictions by buying back dollars or euros.

In short, the case in favour of small-case experiments is a direct rebuttal of the claim that bounded currencies reduce people's opportunities. Contrary to what I argued above (§2.4.1), such experiments can provide additional opportunities to the poor, to workers, or to firms, alongside those which the mainstream economic system offers to them. For instance, they might give access to (valuable) social relations and thereby enlarge the set of opportunities available to people (Servet et al. 1999). They may allow people at the margin of society, who do not take part in common social and economic activities, to engage in local exchanges, to meet people there and, consequently, to build a new social network (Bowring 1998, 101; Seyfang 2002).

Unfortunately, the impacts of bounded currencies are, for now, only potential. Recent empirical findings have cast doubts on the alleged environmental and economic benefits of bounded currencies (Blanc 2018a, 96–101; Dittmer 2013; Marshall and O'Neill 2018; Michel and Hudon 2015). With a few exceptions (e.g. the WIR), these currencies have had a relatively low impact on the economy or the environment. Regarding the social impacts of bounded currencies, some authors did find some positive correlation (Michel and Hudon 2015; Oliver Sanz 2016). Michel and Hudon (2015, 168), for instance, writes that they contribute to “building communities of trust, support and stronger relationships [while] fostering social inclusion of excluded groups”. However, several authors have also raised doubts on the real impact of bounded currencies on social integration. Peacock (2000, 55) notes that “the empirical evidence shows a strong bias towards those people in gainful employment and those who are well-educated and well-off”, a conclusion which is

shared by Bowring (1998, 93). Aldridge and Patterson (2002), who conducted a study of a Local exchange system in an underprivileged neighbourhood in London, conclude that such local exchange systems would work best in communities that experience an already high level of social integration. Their study suggests that social integration increases the chances of success of bounded currencies. According to these authors, the reverse might not be true. It is unclear whether such currencies might help decrease the deficient access of people with low incomes to economic and social networks.

Some authors argued that this lack of impact comes from the marginal use of these currencies (e.g. Blanc 2016). However, as I have argued above, wider use would also mean increased negative impacts on real opportunities and on the possibility to redistribute income and wealth efficiently. Even if increased scope would lead to increased impact, this is nevertheless not the right solution, for this would come at an excessive cost for justice.

In sum, if one cares for justice, one must conclude that these currencies should remain marginal and that their impact should remain small. It is unlikely, however, that anything close to the strong policy will happen any time soon. Proponents of bounded currencies should then be drawn to the conclusion that small-scale experiments will probably never impact the economy or the environment in a significant way, beyond their possible beneficial effects on social cohesion. It is up to everyone, then, to judge whether these benefits are sufficient to justify one's involvement in such experiments.

4. Contestation of markets and capitalism

Some authors have argued that Local currencies, LETS, and Time Banks should be conceived as vectors of contestation. North (2006, 2007) describes them as part of a social movement that contests globalization, capitalism and impersonal market exchanges. Blanc (2015, 2018a) acknowledges that these currencies have failed to affect the economy or the environment, but contends that it is often not their purpose (Blanc 2018a, 71–72). He argues that their main aim is to transform the nature of exchanges, to question the current state of money and to express one's discontent about the prevalence of

market values. He supports the willingness of practitioners to build bottom-up alternatives to capitalism, whatever their impact, and even if the scope of such experiments is limited.

Chapter IV will study at length the relationship between alternative currencies and the market. It will try to make explicit the claims that Blanc, North and others are raising against the market. It will examine whether these claims are justified and whether their arguments are valid.

Leaving these theoretical considerations aside, one can still wonder whether, in practice, local currencies, LETS and other similar currencies can provide effective channels of contestation. Their ability to convey opposition to market values depends on their capacity to attract a sufficiently large number of members and to persuade them of the worth of contesting markets and capitalism. They need to appeal to people that are not already convinced by the necessity to reform the monetary system or to create an alternative to the market. These are real challenges. Williams et al. (2001) have shown that the British LETS mostly attracted poor workers or unemployed people that used them mainly as a survival strategy. Similarly, according to Gómes (2009), gaining additional revenues was the main motive of participation in Argentinian Trueques. Inclusion in a community can also constitute an important motive (Blanc 2018a, 61–62). However, even if some studies have shown that political contestation constituted part of the appeal of some French LETS (Servet et al. 1999), that motivation is not central to most alternative currency schemes (Blanc 2018a, 61–62).

5. Conclusion

Currently, bounded currencies are far from providing an effective response to the ecological, economic and social challenges that, according to their advocates, threaten our society and our economy. This chapter argued that their proponents are stuck in a dilemma. On the one hand, turning these currencies into effective channels of change might hurt justice, in a way that is perhaps not even necessary for achieving their objectives. On the other hand, small-scale experiments are currently unable to achieve any significant outcome.

The chapter focused first on a policy proposal aiming at generalizing the use of such currencies. Some authors argue that only strict restrictions on money's purchasing power could achieve sustainability (Arnsperger 2017; Douthwaite 2012). According to them, restricting the purchasing power of money to a region, a town, a community, or to certain goods, could maintain the economy within the ecological limits of the planet. However, I argued that such restrictions would lead to two kinds of injustices. The tighter these restrictions, the more they will reduce people's real opportunities to pursue one reasonable life's plan and the more they will hinder redistributive policies. I showed that these restrictions are disproportionate to their aim. Their detrimental consequences on justice can hardly be justified by the pursuit of environmental sustainability, for there exist other reforms, such as environmental taxation, that might achieve similar environmental objectives but that would curtail less the pursuit of social justice.

Faced with the current inability of bounded currencies to fully fulfil their promises, some authors (e.g. Blanc 2018a) argue that the main goal of these small-scale experiments is not to achieve some quantitative objectives, but to express discontent about the present state of monetary policy and the market society as a whole. Do these expressions of discontent justify the use of alternative currencies? Answering that question is the task of the next chapter, which will study some of the ways in which these currencies might oppose the values of market society.

CHAPTER IV: ALTERNATIVE CURRENCIES AND MARKET VALUES

1. Introduction

Apart from their alleged capacity to provide certain economic, environmental and social benefits, alternative currencies are conceived by some of their proponents as part of a larger protest against the “market system” or the “market ideology”. If social relationships should include more than “cold” and self-interested private contracts, a possible pathway towards less impersonal and more fraternal relationships might be to expand the use of certain alternative currencies, which, according to many of their supporters, are able to contain the “market logic” and to provide an alternative to its grip (Attout et al. 2013; Cahn 2001; Blanc 2007, 2016).

As we have seen in chapter I, alternative currencies include all currencies that are not legal tender in at least one country. This comprises Bitcoin, LETS, Local currencies, commercial currencies (e.g. Air Miles), Meal vouchers, etc. Obviously, many of these currencies can hardly count as expressing opposition to the market system. Bitcoin and commercial currencies, but also some local currencies (Blanc 2007, 39, note 18) do not find their impetus in the critique of market values. Actually, it is difficult to separate “pro-market currencies” from “anti-market” ones. As argued in chapter I, §2, classifying currencies according to their purposes is misleading:

one currency might have several purposes, and be sometimes “on the side of the market”, sometimes not. However, many believe that some of them can potentially counter-act the market logic. These “anti-market” currencies include LETS, many local currencies, and complex schemes such as the SOL in France (Blanc 2007; Fare 2011; North 2007). As we have seen in Chapter 3, §4, Blanc (2018a) and North (2007) argue that these currencies can help to transform the nature of exchanges and to express one’s discontent about the prevalence of market values. Are these claims valid? Can these currencies transform the current economic system into a more humane and communal society?

This chapter isolates two distinct arguments against the market that some proponents of alternative currencies are raising: the first argument relates to how the market erodes communitarian ties, and the second stresses how market motives conflict with more humane motivations. In short, the first argument concerns the choice of the adequate institution for the regulation of human interactions (markets or community?), while the second focuses on motivations (market values or fraternity?).

Naturally, these are not the unique criticisms of the market that have been raised. There are two broad categories of arguments against the market. We may oppose the market because some underlying conditions, necessary for the market to be just, are not met. These conditions include the fair distribution of talents and resources, and the absence of market failures and irrational behaviour. Injustice, for that first class of criticisms, arises from the failure to meet these conditions. Blanc’s and Servet’s criticisms belong to a second class of arguments, according to which there is something inherently wrong with market relations. This class includes claims against the alleged “corrupting” nature of the market (Anderson 1993; Radin 1996; Sandel 2012) as well as claims against

the kinds of motivations that are present in a market transaction (G. A. Cohen 2009).⁵⁰

This chapter focuses on the criticisms that have a link with alternative currencies. It considers only Blanc's and Servet's arguments and examines the concepts at their heart. The market and community are not the only ways to coordinate human interactions. Self-interest and fraternity are not the only existing human motivations. However, these concepts are crucial for the understanding of these arguments, and deserve a special place in this chapter. Even if all advocates of alternative currencies might not be putting forward these arguments and these concepts, and even if a share of them may even favour the market (Blanc 2013, 262–63), these criticisms are nevertheless widespread and deserve to be discussed.

The first step of this inquiry is to define precisely what is the market (§2). In line with the writings of several important authors of the field, I will define the market as a system of coordination of actions (through the price system) and as a peculiar form of social relations. In a market relation, social obligations towards others are limited to those agreed on consent, all goods are purely alienable and transferable, and the reasons for exchange are primarily self-interested.

The second step is a thorough examination of each argument. This chapter first studies the claim that the market erodes community, that is, the set of social obligations entailed by membership to a group (§3). Then, it examines the claim that market values conflict with the value of fraternity, or the fact that I serve you because you need it, nor because I expect a reward (§4). Regarding the first claim, this chapter raises serious doubts about the relevance of reducing the scope of the market in order to safeguard some place for communities. On the contrary, we should cherish the place that the market gives to freedom from personal ties. Regarding the second

⁵⁰ For a more complete review of the moral limits of the market, see my paper in *l'Encyclopédie Philosophique* (2019).

claim, the conclusion is that, even if one can have good reason to oppose self-interest, these reasons are insufficient to ban self-interested motivations entirely.

Beyond the critical discussion of these arguments, this chapter also discusses additional reasons to limit the scope of the market and to find the right balance between different kinds of human motivations (§5). It argues in favour of sustaining a plurality of ways of valuing goods and persons and it praises the value of political commitment.

Finally, this chapter discusses whether alternative currencies really provide an alternative consistent with the claims that their proponents are raising against the market (§6). Its conclusion will be that, first, the prevalence of universal money does not necessarily entail the prevalence of the market; and, second, that alternative currencies do not always offer a credible response to these claims. Not only their objectives may not be desirable, but they may not provide a reliable means to fulfil them.

2. What is the market?

2.1. Preliminary notes on methodology

The purpose of this section is to find a definition of the market that is both precise and faithful to the arguments that I shall study in the following parts of the chapter. That purpose faces two challenges. First, the quest for conceptual precision should not depart too much from reality.⁵¹ Second, that quest should not deviate from what proponents of alternative currencies have expressed regarding the market, community or fraternity.

First, in order to plainly understand these arguments, one needs to delineate precisely the meaning of the market, of community, of self-interest, and of reciprocity. The social world, however, is constituted by a mixture of values and motivations that is not easy to sort out. The state regulates markets, non-market social norms

⁵¹ That is a classical problem for social sciences, which I shall not attempt to solve nor to discuss comprehensively. See, for instance, Daston and Galison (2007), Kitcher (1993) and Mäki (1998, 2002).

influence market values and social conventions help the market and the state coordinating the economy (Esping-Andersen 1990; Eymard-Duvernay 2006a). However, distinguishing precisely each concept from each other and isolating them from their broader social context constitute a valuable exercise that, despite its lack of realism, will help us clarifying what intrinsically constitutes the market, community and fraternity.⁵² Increasing conceptual clarity and coherence will also allow to see more precisely what might be wrong, or right, with the market, community or fraternity.

Second, the interpretation of these concepts should not differ excessively from the original intention of proponents of alternative currencies. This is a real challenge. The authors who studied these critiques, such as Blanc (2018a) or Servet (2017), aimed primarily at describing the moral claims of actual users of alternative currencies. Even if they share their worries (at least most of the time), they do not attempt to make sense of them as political philosophers would want to do. That is, they do not seek to unveil their moral or empirical premises, nor to test their internal consistency. Moreover, these critiques are often expressed by political activists, whose aim is not primarily to achieve conceptual clarity. This chapter seeks to increase the conceptual clarity of these criticisms, to uncover their moral and empirical premises, and to test their consistency, while always keeping track of the basic intuitions of those who first expressed them.

2.2. The market: a brief literature review

What is the market, then? Markets took different forms throughout history and in different locations (Braudel [1988] 2014; McMillan 2003). However, the purpose of this section is not to review all possible kinds of existing markets, but to isolate a theoretical definition of the concept, conceived as an ideal-type. I shall define the market, or the market system, both as a system of

⁵² Recall that in chapter I, §1, I argued that the fact that social categories have “fuzzy” boundaries in the real world is not an insurmountable obstacle to scientific inquiry. On the contrary, this should push us towards more conceptual clarity, not less. See also Hodgson (2019).

coordination of human actions and as a type of social relation.⁵³ As we shall see, that definition fits the intentions of proponents of alternative currencies.

Most definitions usually stress only one side of the definition. For instance, Hayek (1945, 526, [1973] 2013, 269–71) defines the market as a spontaneous coordination mechanism that allows, through the price system, to convey adequate information to every economic agent in a most efficient way. Le Grand and Estrin argue that “the market mechanism is the most efficient way of coordinating decentralised economic decision-making” (Le Grand and Estrin 1989, 1). Similarly, Okun (1975, 50) stresses that “a competitive market transmits signals to producers that reflect the values of consumers”.

Market coordination has two sides. First, it provides information to economic agents on consumer demand and the costs of production. Compared to a planned economy, market coordination takes place on a decentralised basis (See Friedman [1962] 2002, 12–13). No central agency is in charge of computing prices or of determining the relative value of different goods. Second, the market gives incentives to people to act in a certain way (Miller 1989, 30; G. A. Cohen 2009, 61). Prices, in a market system, tell people what they should do if they want to use a resource most efficiently, or if they want to direct their effort towards the most profitable trade or productive activity (Hayek [1973] 2013, chap. 10).

These definitions delineate some crucial elements of the market but nevertheless ignore the special kind of social relation that the market also conveys, as well as the particular way in which goods are valued under such a system (Phillips 2008).

The commodification literature, on the contrary, does put forward the way in which markets shape our social relations. According to Margaret Radin (1996, xi), “the word ‘commodification’ denotes a

⁵³ For a more complete discussion of the defining features of the market, and their philosophical underpinnings, see my papers published in *l’Encyclopédie Philosophique* (Larue 2019) and in *Projections* (Larue 2015).

particular social construction of things people value, their social construction as commodities.” For Elisabeth Anderson, the market conveys a particular way to value commodities, which she calls “an impersonal mode of valuation” (Anderson 1990, 181) and which boils down to purely contractual social relations.

Most proponents of alternative currencies also describe the market as a social relation, most of them in negative terms. In particular, they stress the impersonal and egoistic character of market transactions. According to Blanc, the discourses of activists, and of those who use or study these currencies, clearly oppose the “asocial and egotistical calculations” inherent to the “western market ideal” (Blanc 2007, 38, my translation).⁵⁴ Moreover, he argues that market relations guarantee everyone’s freedom not to participate (or to “exit”, as Hirschman (1970) would put it). This entails, according to him, that market exchanges have only an “occasional nature” and are, therefore, unable to create long-term relationships between traders. He regrets “the individualism that results from the ability of the money bearer to free himself from any relationship other than punctual market exchanges” (Blanc 2007, 40, my translation).⁵⁵ Similar claims pertain in a number of other studies. Bowring (1998, 101) opposes “the competitiveness and suspicion that often accompanies impersonal transactions between strangers”. Bernard Lietaer and his co-authors (2012) argue that “conventional money (...) erodes social capital” (Lietaer et al. 2012, 109), and that it “encourages competition” at the expense of “social cooperation” (110-11).

Blanc, Servet and their co-authors also refer systematically to Polanyi’s work on the market and reciprocity.⁵⁶ Among the

⁵⁴ The exact sentence in French is “L’imaginaire occidental du marché [...] en fait un espace de calculs individuels, égocentrés et par principe asociaux” (Blanc 2007, 38). The word « western » (or « occidental ») is perhaps not well chosen. Similarly, Blanc confuses “individualism” with “egoism”.

⁵⁵ In French, he writes : “l’individualisme calculeur qui résulte de la capacité du porteur de monnaie à s’affranchir de toute relation autre que celle, ponctuelle, établie pour ce qui est considéré comme l’échange marchand ou l’échange sur le marché

⁵⁶ See, for instance, Blanc (2013, 2018a, 2018b), Servet (1993, 2007, 2012a, 2012b, 2013a), Servet et al. (1998).

numerous authors who studied the market society, Karl Polanyi is one of the first who stressed that the market is both a system of coordination of human actions and a specific kind of social relation. He defines the market economy as “an economic system controlled, regulated and directed by market prices.” (Polanyi [1944] 2001, 71). On that regard, his definition does not differ much from Hayek’s. However, Polanyi also warns that, if the market economy spreads into every aspect of life, society will be transformed into a “market society”. The latter is, according to Polanyi, a specific social system that destroys the bonds of solidarity and that subordinates social life to market values, namely: “Fear of starvation for the worker” and “lure of profit for the employer” (Polanyi 1947, 111).

2.3. Defining the market

What can we keep from this short review of the literature? Because of its importance in the alternative currency literature, I shall start from Polanyi’s definition and try to enrich it with the help of more recent trends of literature in economics and philosophy.

Polanyi ([1944] 2001) distinguishes between the market economy, the market society, and market values. The market economy (which I shall also simply call “the market”) is a system of coordination of actions that relies on prices and that implies a certain form of social relations. The market society is a society in which the market regulates all (or almost all) aspects of life. Finally, market values are the motivations of agents within a market system. As we shall see these motivations are primarily a matter of self-interest.

The previous section also stressed another useful distinction. Polanyi (and most of the authors studied in §2.2) describes the market as a system of coordination. In a market economy, neither legal norms enforced by the state nor implicit social norms enforced by tradition but prices regulate conduct. Along with several other authors, he also stresses that the market is a special kind of social relation. As we have seen, many regret its “impersonal” nature, the “egoism” or “individualism” of the traders, the lack of “long-term relationships”. I will attempt to make sense of these words by stressing that social interactions on a market have at least three

components. Market exchanges (i) involve acts of consent; (ii) rely on the pure transferability of ownership; (iii) and take place for reasons of self-interest. Let me address each of these components in turn.

(i) Consent means that each individual can freely choose not to trade with another individual. It entails, first, that it is up to everyone to decide whether to trade or not (Friedman [1962] 2002, 15). Second, it implies that, in a market relation, as Elizabeth Anderson puts it, “nothing ties the parties together over time” beyond contractual obligations (Anderson 1990, 180). The market guarantees “a sphere of freedom from personal ties and obligations” (Anderson 1990, 180). As we shall see, some regret that feature of the market. Aglietta and Orléan (2002, 49–51) and Blanc (2007, 38–40), for instance, argue that markets separate people from each other and lead to loneliness and social distress. Others praise the liberating potentials of impersonal market transactions (e.g. Hayek [1973] 2013, 272). I shall discuss this aspect of market social relations in §3 below.

(ii) Following Alan Gibbard (1985, 22), pure transferability of ownership means that, in a market system, “the rights of ownership, whatever they may be, are transferable by contractual exchanges, subject only to those restrictions that the parties involved have accepted.” Pure transferability requires, first, that rights of ownership should be well-defined, and protected from expropriation. It also demands that objects do not retain any link with their former owner or producer, that is, that they remain perfectly detached from them. The new owner has no obligation towards the seller, once the latter has received a payment. One may freely use a commodity, irrespective of who created it, or sold it, and in what context. At the opposite, one may not be as free to use one’s gifts. For, if objects remain attached to their previous owner by sentimental or affective links, they cannot be sold or used as freely as if they had lost all ties with all human beings. As Marx perfectly describes it, in the world of commodities, “objects in themselves are external to man, and

consequently alienable by him” (Marx [1867] 1887 vol. 1, Part 1, Ch. 2).⁵⁷

(iii) Finally, the market relation relies primarily (but not necessarily entirely) on self-interest (or egoism, as Blanc or Servet would put it). In short, it means that in a market exchange, one does something for someone else only if she gets a reward for doing it (Anderson 1990; G. A. Cohen 2009; Herzog 2017a), that is, out of self-interest. Self-interest is inherent to the market. On the one hand, the market enables the free development of self-interest, by freeing individuals from implicit social norms (see paragraph (i) above). On the other hand, without self-interest, there can be no markets.

This last point is of crucial importance. Self-interest is part of the rules of the game of the market. It is the central motive, or the central value, that defines market transactions.

On the one hand, markets rely on mutual advantage: each party to a market transaction should make sure that what one has to offer triggers the interest of others. In other words, it is in the interest of every party to consider the interests of others, for otherwise no beneficial transactions would take place. The market cannot exist without minimal regard on the part of each participant for the interest of other potential traders. The market, therefore, is incompatible with pure selfishness, or the exclusive regard for one's own advantage, without any consideration for others (Walsh and Lynch 2008, 78–82). A person that would be entirely unable to consider the good of others would also be unable to trade with others.

On the other hand, the market is incompatible with disinterestedness. Following Elster's definition, one is disinterested when one's motivations for action are detached from one's self-

⁵⁷ Mauss' description of the economy of the peoples of Melanesia illustrates how, by contrast, in these economies, “the objects are never completely separated from the men who exchange them; the communion and alliance they establish are well-nigh indissoluble” (Mauss [1923–1924] 1966, 31). See also below, §3.2.

interest (Elster 2009, chap. 3).⁵⁸ If everyone started to behave without regard for his or her interest, but only in the interest of others, the game of the market would collapse. If people stopped to compete for the pursuit of their self-interest, human interactions could no longer be market interactions. Chess stops to be chess if the purpose of the game is no longer to win but to contribute to the victory of the other chess player. Similarly, if all of a sudden workers and capitalists cared only or primarily about the good of the other class, I doubt that anyone would define their deliberation as a market transaction.⁵⁹ It would probably look more like a discussion between friends than like a competitive negotiation.

The market, therefore, is incompatible with disinterestedness and with selfishness alike. Without minimal readiness to consider the other's interest, or without minimal regard for one's own interest, the market would simply not exist.

3. The market and community

The first dimension of the market relation – consent – comes in stark contrast with a conception of community that stresses the importance of stronger communitarian ties. In the literature on alternative currencies, or in the anthropological literature to which the former generally refers, there is no consensus on the exact term to be used in reference to this idea. One may encounter the idea under different names, such as social community, social totality or

⁵⁸ Elster (2009) elaborates a complex classification of human motivations. At the lower end of the spectrum lies selfishness: a selfish person does not even consider the interest of others. Then comes self-interest, which involves a low level of consideration for others (the required level to have beneficial interactions with others). Then comes altruism. Contrary to the self-interested person, an altruist's utility function comprises the utility of other people, but with a lower weight than her own. Finally, Elster considers several instances of disinterestedness, among which "Folk Kantianism" and utilitarianism. A Kantian, in this sense, is a person who always chooses the option that, if chosen by everybody else, would yield the best outcome for society. A utilitarian is a person who always chooses the action that maximises the sum of all individual welfares (including hers).

⁵⁹ Carens (1981) imagined such a possibility. His ideal society would be one in which people are motivated by self-interest during the day, so as to maximise output, and then become fraternal at night, so as to share the output equally. As Cohen (2009) argues, that ideal society would lie at the opposite of market society.

reciprocity. I use the word “community” for three reasons. First, “social totality” has an implicit holist character that does not necessarily fit with the philosophical background of all the authors that I shall study. Second, the meaning of the word “reciprocity” differs in philosophy (Barry 1991), in economics (Kolm 2008), in sociology (Gouldner 1960) and in anthropology (Polanyi [1944] 2001, 1957). Finally, most (if not all) human interactions (including market transactions) could perhaps be described as reciprocal interactions. For instance, Sahlins (1972) classifies all human interactions (from free gifts to market exchanges and finally theft) according to their degree of reciprocity. Therefore, I prefer to use the term “community” to avoid confusions.

Section 3.1 will study the concept of community at the centre of the works of Blanc and Servet. I argue that the core treat of their conception of community is that it is a set of social obligations implied by membership. Section 3.2 discusses the main characteristics of this conception. Finally, section 3.3 examines the criticisms that Servet and Blanc are raising against the market on the basis of their conception of community.

3.1. Blanc and Servet on community

What is the defining feature of a community as understood by Blanc and Servet? Both emphasise that communities are united around shared values (Servet et al. 1999, 172; Blanc 2018a, 47). This definition is in line with a large strand of philosophical literature, which refers to community as a group of people who are united around the common commitment to a particular conception of the good. For instance, Rawls (2001, para. 7.3) defines a community as an association whose “members are united in pursuing certain shared values and aims”, that is, a certain “conception of the good”.⁶⁰

⁶⁰ In the same passage, Rawls explicitly excludes the idea of building a just society on the basis of a particular conception of the good and, consequently, rejects the idea of designing the just society as a community. This stance distinguishes Rawls from communitarians (e.g. Sandel 1982, 1984) who stress the importance of community for the construction of our personality and for the design of a just society (See also Gutmann 1985; Kymlicka 1989a; Walzer 1983).

However, their conception of community has another important defining characteristic. For them, the concept of community refers to a set of unconsented social obligations implied by membership. In a community, one's obligation derives from the fact that one happens to be a member of that community, where membership to that community may or may not be an object of choice. Certain social obligations are "strong" obligations (explicit rules and prohibitions). Others include "softer" kinds of implicit expectations, such as the expectation that people will behave in a certain way in certain contexts. Let me review Blanc's and Servet's writings to make this point more precise.

In the previous section, we have seen that, according to Blanc, market exchanges have only an "occasional nature" and are unable to create long-term relationships between people (Blanc 2007, 38–40). Blanc regrets the "impersonal" character of market exchanges, which do not create any obligations beyond those agreed on by contract. On the contrary, alternative currencies are supposed to favour long-term economic relationships as well as richer social interactions. Blanc relates these currencies to Polanyi's concept of reciprocity. According to Polanyi (1957, 250), reciprocity "denotes movements between correlative points of symmetrical groupings", such as kinships or clans. For Polanyi, reciprocal relationships characterise the non-contractual, long-term and symmetrical relationships between members of a group (a family, a clan, etc), where membership to that group can be chosen or not.⁶¹

Unfortunately, Polanyi does not define precisely what "symmetrical relationships" really imply. Does this simply mean mutual care? Or should we give it a "stronger" sense? Similarly, Blanc is slightly ambiguous on the meaning of community. Sometimes, he stresses that it simply means the quest for convivial and fraternal relationships (e.g. Blanc 2018a, 69). That conception refers to what I will call "fraternity" (see §4 below). However, he also insists that

⁶¹ Polanyi's original formulation of the concept of reciprocity is open to interpretation. See the attempts of Sahlins (1972), Servet (2007, 2013a), Defourny and Nyssens (2017, 188–90), and Blanc (2018b), among others.

community has to be understood as the enactment of Mauss' threefold obligations: giving, receiving and reciprocating (Blanc 2018a, 37–38).

Mauss ([1923–1924] 1966) described societies in which there is “an obligation to give and an obligation to receive” (Mauss [1923–1924] 1966, 10–11). However, no explicit rule forces individual members of the tribe to give and take, and the process of giving and receiving has no formal end (Mauss [1923–1924] 1966, 31). According to Mauss, Melanesian societies hold together thanks to these strong (but implicit) social obligations. In the same line, but with a less sympathetic tone, Titmuss (1970, 239) highlights how traditional gift-exchanges rely on bonds of custom, on “domination, constraint or compulsion”, or, even, on a “sense of shame or guilt” (See also Godbout 1992, 77–78).

Perhaps, Blanc does not fully embrace Mauss' conception of strong community as a desirable political ideal. Jean-Michel Servet and his co-authors (who include Blanc) (Servet et al. 1999) express more explicitly their attachment to strong communitarian ties, though. According to these authors, LETS rely on a network of “gifts and informal debts” that connect and unite the entire community. They are an instrument of “social inclusion into a social community” (Servet et al. 1999, 172–74), a “source of belonging and security” (ibid., 109), opposed to the “material exclusion” of the market [my translation]. According to Servet et al. (1999), LETS create a sense of community because they rely on a web of interrelated debts between members. Relationships within a LETS exhibit the exact properties of a traditional gift-relationship as described by Mauss. In LETS, there is an implicit obligation to give and to receive. For exchange to take place and a LETS to be alive, everyone must at some point give a service and accept to receive one. In return, everyone is obliged to give back, by serving another person or the entire group. This multilateral reciprocity establishes strong links between people and fosters their sense of belonging to a community. Similarly, local currencies also foster communitarian ties by encouraging local exchanges of goods and services between neighbours.

In later writings on Polanyi and reciprocity, Servet argues that, in a community, “the group has priority over individuals” and that “society becomes a totality”(Servet 2017, 7, my translation). He claims that “primitive currencies deny (...) the primacy of the individual over the group” (Servet 2013b, 133, my translation) and that they should become the model on which to design contemporary alternatives to official currencies.

Servet and Blanc both defend a conception of money as expressing a “social totality” connected by a dense network of reciprocal social and economic relationships (Servet 2012a, 2012a; Blanc 2000, 2007; Alary and Blanc 2013). This account is shared by other French authors, such as Aglietta and Orléan (1998, 2002) and Théret (2008, 2009), and is clearly inspired by Mauss’ account of the “gift relationship”(Mauss [1923–1924] 1966). Their theory starts with the claim that “society” predominates individuals. It imposes on them a series of rules and of structures by which people must abide, without even knowing it. Money is one of the ways through which society acts on individuals. It is one of the channel of communication (so to say) between society and individuals. It forces them to do certain things and it instils certain values in them (e.g. market values, or values of solidarity, depending on the kind of money).

Servet favours LETS and Local currencies over “conventional” or “national” currencies because the former are able to sustain, more explicitly and more actively than the latter, the existence of a “social totality” and to promote social cohesion within a community. In that sense, they constitute “good” money (Servet et al. 1999, 174).

To conclude this brief review, note that Blanc and Servet have moved away from Mauss and Polanyi in at least one important respect. Blanc and Servet explicitly defend the worth of strong social relationships. However, Mauss attempted mainly to describe and to explain the functioning of Melanesian societies. Even if he sometimes expressed his esteem for such societies, he never explicitly defended them. Similarly, Polanyi’s concept of reciprocity is aimed primarily at describing one way to organise society. Polanyi does not attempt to defend the value of reciprocity. He rather uses this

concept to describe one possible coordination mechanism of human interactions.

3.2. Community: a restatement

This brief review makes clear that Blanc's and Servet's concept of community refers to a set of unconsented social obligations implied by membership. Even if this definition applies perhaps more to Servet's work than to Blanc's, both repeatedly highlight how human relationships ought to imply more than consented contracts. They both stress the importance of membership to a group or a community as well as of the implicit obligations that come with it, which is perhaps most explicit when they refer to the gift relationship described by Mauss. In this section, I would like to emphasise two important differences between market and community.

First, in a market relation, payment extinguishes all obligations, while, in a community, there is often no possibility to extinguish certain obligations. As Mauss argues, for instance, members of a clan cannot get rid of their obligations towards other members (or at great costs for them and their family).

Second, in a market relation, social obligations derive exclusively from consented contracts, while, in a community, they are grounded in membership to a family, a club, a village, or a nation.⁶² Because one happens to be a member of a given community, and in virtue of that membership, one has certain obligations towards other members. The point is clear when membership is unchosen. For instance, members of a family have obligations towards each other in virtue of their membership to the same family, even if they never consented to be part of their family.⁶³ However, even when individuals have consented to become members of a community, they will nevertheless have to abide by certain non-consented rules and obligations in virtue of their membership to that community. For

⁶² Of course, contract and membership are not the only sources of obligation. Moral duty, the demands of fairness, promises, friendship, and political allegiances are other examples of possible sources of obligations, which I do not consider here.

⁶³ Parents and children may have obligations towards each other for other reasons, of course. See for instance Brighouse and Swift (2014).

consenting to enter a community does not entail consenting to every rule of the community. For instance, when one becomes a member of a religious community, one generally consents to obey the community's general rules (sexual abstinence and poverty, for instance). However, once that person becomes a member of that community, he or she will also be faced with numerous other non-written rules, prohibitions, and expectations, which he or she must obey even if they were not explicitly consented to.

In sum, contrary to markets, which rely only on consented obligations, a community involves both consented and unconsented obligations. Members of a family do make contractual deals with each other. But being a member of a family implies more than these deals. It implies obligations that do not arise from consent, but from membership.

3.3. Restating the critique

We now have a clear definition of community, which relates to the obligations that membership in a group creates for each individual, without relying on consent. That definition sheds some new light on the critique that Blanc and Servet raise against the market. Let me reconstruct the critique in four steps.

First, Blanc and Servet stress the value of community (Servet et al. 1999, 174; Blanc 2018a, 47–48). They praise the worth of developing strong social obligations towards members of a group. Second, they regret that the market system erodes community and that it becomes the dominant mode of interaction, by slowly replacing all other forms of human interactions (Blanc 2007, 40; Servet 2013b, 2017). That critique is partly inspired by Polanyi, who blamed market society for destroying traditional obligations of solidarity (Polanyi [1944] 2001, 106). Because it relies on consent and impersonal relations, the market weakens the set of social obligations towards others that membership to a group entails. As a consequence, more and more human interactions are becoming market interactions. Third, like Polanyi ([1944] 2001), both authors argue for a more “balanced” social world, in which the market has its place along with other kinds of human interactions (including community) (Servet 2013a; Blanc

2018b). Finally, they argue that certain alternative currencies (LETS, Local currencies) can provide an alternative to the market by effectively reinforcing communitarian ties (Servet et al. 1999, 172–74; Blanc 2018a, 47–48).

The remaining of this section discusses the normative premises as well as the empirical basis of each step of this argument. I shall first discuss what might be the good of community that must be preserved against erosion by the market. Then I will question whether the claim that markets erode community is empirically valid. I will study two channels through which market erosion might take place: the claim that contractual relations weaken community, and the claim that the market corrupts the virtues at the basis of community. Third, I will examine whether the size of the market sphere should be reduced in order to leave more space to strong communitarian relationships. Should we favour the market or should we prefer community as a way to organize human interactions? Should both go along together? I will leave the discussion of how alternative currencies might contribute to building communities to the last section of the chapter, which also discusses their link with fraternity.

3.3.1. The value of community

The notion of community that is relevant here concerns a form of social organization that ties people together by a web of social obligations in virtue of their belonging to a certain community. What is the value of community so conceived?

Liberals generally agree that we have obligations towards each other, either because we have consented to these obligations by contract, or because, as our welfare derives in a large part from cooperation with others, we ought to share the product of that cooperation with others (Rawls [1971] 2005, 4). However, those who praise community want to go beyond these obligations and give value to the obligations and the ties that we derive from membership. As we have seen, Blanc and Servet hold that we should guarantee the cohesion and the existence of a “social totality”, and regret that markets separate people from each other.

The lack of strong communitarian ties may have at least two detrimental effects. First, the loss of a sense of belonging, or of communal bonds, weakens the foundations on which society is lying, and threatens to destroy the prospects for a just and democratic society. Blanc and Servet explicitly refer to Polanyi, who praised the importance of developing strong bonds of solidarity, which market society tends to destroy (Polanyi [1944] 2001). Without such ties, Polanyi argues, individuals are atomized and society falls apart. Second, without such ties, people are so irremediably alienated that they lose the sense of belonging that gives meaning to their life. For instance, Etzioni (2018, 129) argues that “the absence of sufficient communal bonds is a major reason people feel detached, alienated, and powerless.”

One can ask two questions regarding the value of community. First, is it really threatened by markets? Second, is it really worth preserving? Let me turn to the first question.

3.3.2. *Do markets erode community?*

There exist at least two channels through which markets can erode community.

First, the market may weaken the bonds of community because, where it puts its hold, it replaces inherited obligations by consented obligations. People may “exit” market interactions to express their discontent (Hirschman 1970; Anderson 1990). They are tied together only by obligations which they consented to. Moreover, their obligations end with payment and do not last further in time. As Blanc (2007) argues, this might undermine the possibility for people to join in long term relationships.

Second, some complain that markets erode the virtues on which society is built, and therefore undermines the very norms that sustain its functioning. For instance, Lietaer et al (2012, 109) regret that “conventional money (...) erodes social capital”, which constitutes the “glue of society”. Similarly, Buber (2008) and Sandel (2012), among others, blame the market for its detrimental effects on civic

virtues, whose weakening undermines the stability of social institutions.⁶⁴

Is the market really eroding communitarian ties?

Regarding the first channel, we may note that markets do not necessarily preclude stronger commitments. The market relation is a contractual relation, which neither forces anyone to connect with others nor prevents anyone from doing so. The market does not preclude richer ways of interacting with each other, such as political commitments (Kymlicka 1989b) or non-market ways of life, such as de-growth life-styles (Van Parijs and Vanderborght 2017, 127–28). It might even foster voluntary associations between strangers (Seabright 2004). Markets, therefore, may be a complement, not a substitute, to community.

In practice, however, it may be true that the market discourages some forms of social ties, such as those that are grounded on involuntary membership, and not on voluntary association. The difference between practice and theory is that, in practice, it is difficult to disentangle the effect of the market from the joined effects of several other modern institutions, such as the state, education, industrialisation or secularism, which have been blamed by some as constituting the source of the modern decline of the value of community (Taylor 1991). Godbout (1992, 76), for instance, argues that the state is the primary cause of social disintegration. For Godbout, the state “corrupts the gift relationships”, breaks the traditional ties of solidarity and replaces it by a “colder” social contract (Godbout 1992, 82). It might, therefore, be difficult to know whether the cause of the erosion of communitarian ties lies in some inherent features of the market, or whether it lies in some mix of market and non-market properties of modern economic life.

Concerning the second channel, the evidence tends to show that market relations do not necessarily crowd out morals (J. Brennan and Jaworski 2015). Behavioural economists stress that there is often a

⁶⁴ See Meadowcroft and Pennington (2008, 121–23) and Brennan and Jaworski (2015, chap. 15) for a critical review of these positions.

“positive relationship between markets and morality” (Gintis 2012) and that “markets do not (...) lead to a languishing of the civic virtues on which these societies depend.” (Bowles 2012).⁶⁵ However, the empirical debate is intense on these issues, as some have shown that markets actually promote certain virtues (confidence, diligence) while eroding others (generosity, temperance) (Walsh 2001; Graafland 2010; Bruni and Sugden 2013). Moreover, it might be hard to disentangle the effect of the market from the influence of other institutions on the development of these virtues. As Bowles (2012) notes, we can only observe the effect of the market “in conjunction with other attributes of many liberal democratic societies such as the rule of law, a social safety net, and relatively robust equality of opportunity”. How markets, alone, have influenced social virtues may be hard to figure out precisely.

3.3.3. *Is community worth preserving?*

For the sake of the argument, though, let me assume that the rise of the market economy is one important cause of the weakening of communitarian ties. Is this something that we should regret?

A first response is that the weakening of strong communitarian ties is a sign that people are becoming freer. The market leaves the possibility for people to disregard social obligations attached to membership. It allows social life to no longer be organised around pre-defined communities and conformity to shared constitutive comprehensive doctrines. In a market network, people are free from personal ties, which means that no one can impose his or her vision of the good life upon another (Anderson 1990; Elster 1989, 58–59). As Walzer puts it: “the market is radically pluralistic in its operations and in its outcomes” (Walzer 1983, 21).

It is pluralistic in its operations because these operations do not imply that the buyer agrees with the way of life of the seller (and vice versa). The two parties of a market transaction do not need to know each other, nor to share any common understanding about the good

⁶⁵ See also (Bowles 1998; Henrich et al. 2001, 2005; Bowles and Polanía-Reyes 2012).

life. They simply need to agree on the price.⁶⁶ As Hayek writes, “the great advantage of the spontaneous order of the market is that (...) it makes agreement on ends unnecessary and a reconciliation of divergent purposes possible.” Moreover, one of the market’s central feature is the possibility for each party to “exit”. Each party is free not to be part of a market transaction. We have seen that some regret that possibility, for they fear that it would lead to the collapse of communities (Blanc 2007). However, it has also a positive component: if one disagrees with the other party’s conception of the good life, or with the conception of the good life that the consumption of a certain good entails, one can simply refuse to enter the market for this good.

It is pluralistic in its outcomes because it leaves to each individual the possibility to live a great number of different lives. Note, for instance, that the market is compatible with ways of life unrelated to the market: in a market society, no one is prevented from living according to religious norms or to de-growth life-styles (Van Parijs and Vanderborght 2017, 127–28).

This does not mean that any market society is just. Not everyone has the same opportunity to choose among a great number of different life’s plans. We need to take into account the effects of the unequal distribution of talents, knowledge and resources on the distribution of advantages (Kanbur 2004; Satz 2010). For the market process might transform such inequalities into severe inequalities of power, income and wealth, at the advantage of the most talented or the better educated (Rawls 2001, 130–31; Scanlon 2017, 40–53). As I argued in chapter III, §2.3, justice requires correcting for these inequalities (through education, market regulations or redistribution).

Moreover, one could argue that the market precludes certain conception of the good life. Some preferences might be shared by only a minority and their satisfaction might require a good whose

⁶⁶ Agreeing on prices might nevertheless require some important amount of common understanding (Dupuy 1989; Eymard-Duvernay 2006b). Two parties must use the same unit of account, share a common language, and respect some common rules (lax of contract, absence of violence).

production is expensive or the prerogative of a monopolist (Waldfoegel 2007). The market, therefore, unfairly treats people with different conceptions of the good life. One could reply that, if the market process is fair, that is, if equality of resources and of talents prevails, then some preferences might indeed be more expensive to satisfy than others, simply because their satisfaction entails higher costs than the satisfaction of other preferences (Dworkin 2000). People are responsible for their preferences and there is nothing unfair in the fact that some are more expensive to satisfy than others. This is not the end of the story, though. Cohen (2004) famously replied to Dworkin that some preferences are not deliberately chosen and that their cost is a function of a market process over which individuals have no control, so that people cannot be held responsible for the costs of their satisfaction.

Let assume that Cohen is right and that some people have to pay an unjustly higher cost for the satisfaction of their preferences. Correcting that injustice does not require banning the market or promoting community, though. People can be compensated for the bad luck of having developed expensive or rare tastes. It seems, therefore, that justice can leave a place for the market, provided that adequate redistributive mechanisms are put in place.

However, one could reply that certain conceptions of the good life are not merely more costly than others but actively precluded by market society, without any possibility of compensation. Blanc's and Servet's ideal of community might be one of this precluded conception of the good.⁶⁷ Should that ideal be safeguarded against the erosion of the market?

Recall from §3.3.1 that the alleged worth of community comes from the fact that (1) belonging to strong communities gives meaning to the life of its members and that (2) without the existence of strong social ties, society would fall apart. Let me discuss these two claims in turn.

⁶⁷ Recall that, in §3.3.2 above, I argued that the claim that markets erode community might be exaggerated.

That people feel alienated and lonely in modern market societies is a recurrent complaint in communitarian thought (Sandel 1984; Etzioni 1988; Taylor 1991). For Taylor (1991), that is the negative side of the ideal of autonomy. Liberals generally hold that individuals must be free to “pursue [their] own good in [their] own way, so long as [they] do not deprive others of theirs” as Mill ([1859] 1974, 72) puts it. The realisation of that ideal of autonomy may have its drawbacks, though. People’s rationality may fail (Elster 1979, 1982). People may feel detached and rootless (Sandel 1984). One might also regret the despicable features of some ways of valuing, such as market interactions (Anderson 1993; Sandel 2012; Taylor 1982). Or one might acknowledge the failure of some of our fellows to live up to a higher ideal of self-fulfilment (Mill [1859] 1974, 121).

However, as Taylor (1991) acknowledges, neither can we go back in time to some kind of strong communities, nor should we get rid of this ideal of autonomy. Despite the risk that liberty might lead to loneliness, Taylor expresses his hope that people will make good use of their liberty, individually and through collective associations. It may be sad that this freedom is not presently used as it should be, but that is not a reason to renounce it.

One might reply that Taylor is excessively confident in the human capacity to flourish despite the absence of communities. An alternative to that confidence would be to build a social system that would be able to combine freedom from personal ties and a form of social relationship that prevents isolation and loneliness. That was, perhaps, the ideal of Marx, who praised the liberating potential of the “bourgeois society”, which got rid of the “sentimental veil” of pre-capitalist relationships (Marx and Engels [1848] 1888, 15–16). Even if, as we shall see, Marx blamed the market for its effects on fraternity, he believed that communism could reconcile individual fulfilment and communal relationships for all human beings (G. A. Cohen 1974, 241–46; Elster 1986, chap. 3). His hope, which is also shared by contemporary Marxists (e.g. G. A. Cohen 1991, 2009; Wright 2010), was that under communism people would make good use of their freedom, by building meaningful and fraternal relationships with each other.

Let me now turn to the claim that society would fall apart without strong communitarian ties. Diversity of opinions, of political allegiances and of cultures do make it difficult to build solidarity and might weaken the foundations on which society is lying. However, as Banting and Kymlicka argue, liberal societies are able to sustain solidarity (in a weaker sense than Marx's, though). They delineate three different dimensions of solidarity: "civic solidarity, characterized by mutual tolerance and absence of prejudice"; "democratic solidarity, characterized by support for basic human rights and equality, (...) the rule of law and for democratic norms and processes"; and "distributive solidarity, characterized by support for redistribution towards the poor and vulnerable groups" (Banting and Kymlicka 2017, 4). Note that these dimensions of solidarity are much weaker than the bonds of community. In short, solidarity boils down to basic support for liberal values and for redistribution towards the most vulnerable. For Banting and Kymlicka (2017, 7), "solidarity helps motivate people to accept the strains of commitment involved in building a decent, good, or just society." For these authors, solidarity is compatible with liberal societies, which are no longer organized around a shared comprehensive doctrine (e.g. a religious creed). However, solidarity needs to be continuously sustained and encouraged through adequate policies (Banting and Kymlicka 2017, 27). They conclude their review of the empirical literature on solidarity by claiming that "a universal welfare state, impartial public institutions, multiculturalism policies can help building inclusive solidarity." (Banting and Kymlicka 2017, 32).

To sum up, this discussion has led to question the empirical validity of the claim that markets erode community. One can have doubts that markets prevent people from creating communities or hinder the virtues necessary to sustain society. Moreover, this section has stressed that the erosion of community may be a sign that people are becoming freer. Finally, that erosion does not necessarily imply universal loneliness or the end of solidarity. Some argue that, within liberal societies, people can and should seize the opportunity that such societies give them to flourish and to develop their human capacities (Taylor 1991). Others that a socialist alternative would

reconcile individual fulfilment and communal relationships for all human beings (e.g. G. A. Cohen 1991, 2009; Wright 2010). Moreover, adequate policies (such as the implementation of a universal welfare state) may sustain solidarity even in the absence of strong communitarian bounds (Banting and Kymlicka 2017).

Therefore, even if the market might generate a conflict of values between freedom and community, we should not regret that it leaves people free from the bounds of any comprehensive doctrines or from unchosen social ties. Obviously, any liberal society should guarantee freedom of association, which includes freedom to create communities. However, this section raised serious doubts about the relevance of reducing the scope of the market in order to safeguard some place for communities. There might be other reasons to limit the scope of the market, such as the presence of market failures or the initial unequal distribution of talents, resources, or preferences. There might also be good reasons to nurture the virtues conducive to solidarity. Nevertheless, provided that some kind of equality prevails, we should cherish the place that the market gives to freedom from personal ties, and the possibility that it gives for the development of conscious, and possibly more diverse, consented commitments.

I shall discuss the consequences of these conclusions for alternative currencies in the last section of this chapter. Beforehand, let me turn to a discussion of markets and fraternity.

4. The market and fraternity

Some proponents of alternative currencies blame the market for its deleterious effects on fraternity (e.g. Blanc 2007, 2015). After a short review of the literature on alternative currencies and fraternity (§4.1), this section proposes a definition of fraternity that is drawn from the work of Cohen (2009) (§4.2) and examines the claim that the market motive is opposed to fraternity (§4.3). That concept is sometimes also called “communal reciprocity” (G. A. Cohen 2009), “community” (Vrousalis 2011), “reciprocity” (Degens 2016) or “conviviality” (Blanc 2018a, 69). As we have seen, the word “reciprocity” is a polysemous term that is unfit for interdisciplinary

work. Since the word “community” has in this text its own distinct meaning, I will use “fraternity” to avoid confusions.

4.1. Alternative currencies and fraternity

The fraternal motive that lies at the heart of several alternative currency experiments has attracted praise from many authors. It is generally opposed to the egoism of the market. Blanc (2018a, 69) praises the convivial and communal nature of many alternative currency schemes. He argues that LETS and Local currencies (which he calls social currencies⁶⁸) aim at transforming the nature of exchanges by moving them away from the market (2007, 2015). According to Blanc, the discourses of activists, and of those who use or study these currencies, clearly oppose the “asocial and egotistical calculations” inherent to the “western market ideal” (Blanc 2007, 38, my translation).

Similar claims pertain in a number of other studies. Bowring (1998, 101) notes that “unlike the competitiveness and suspicion that often accompanies impersonal transactions between strangers, the informal aspect of LETS trading is lauded by its proponents for fostering trust and friendship”. Bernard Lietaer and his co-authors (2012) argue that “conventional money (...) encourages competition” at the expense of “social cooperation” (2012, 110–11). Similarly, Degens (2016, 23) contends that “the usage of local currencies among businesses does not reflect market-based social relations, but relations that are based on reciprocity”.

4.2. Cohen on fraternity

What is fraternity? For lack of a more precise formulation of this concept in the literature on alternative currencies, I would like to link it to another one, introduced by Cohen (1991, 2009). I do not think that this connection betrays the original intention of these authors, for Cohen’s formulation is relatively close to their expressions, and captures their main intuitions. His distinction will allow for a more

⁶⁸ See chapter I, §2.

thorough examination of the issue of self-interest and other human motivations.

Cohen (2009, 39) opposes the self-interested motive of the market (or “market reciprocity”) to fraternity (or “communal reciprocity”). Fraternity means that each commits to serve others because each cares about others’ needs, and not about getting a reward for doing it. In a fraternal relationship, everyone cares about others’ needs and commits to help others in a non-instrumental way (G. A. Cohen 2009, 41).

Both the market and fraternity are reciprocal relationships. In a market relation, reciprocity arises from the fact that I must satisfy the interest of others if I want mine to be satisfied. Reciprocity takes the form of a payment. In a fraternal relation, on the contrary, reciprocity means that each serves others because each cares about others’ needs, and expects that others will behave in a similar way. Let me analyse the idea of fraternity carefully.

First, contrary to the market motive, fraternity goes beyond mutual advantage. On a market, people will trade with each other as far as they each find it advantageous to exchange with each other. Even if people are often cared for in market transactions, the purpose of the other party in the transaction is to get some advantage, not primarily to provide care. Fraternal relations go beyond mutual advantage. They involve a collective effort to achieve the personal self-fulfilment of each individual (G. A. Cohen 1995, 122–23; Vrousalis 2011, 144–46). As an illustration, Cohen uses the example of a jazz band in which “each player seeks his own fulfilment as a musician. (...) [However] he fulfils himself only to the extent that each of the others also does so, and the same holds for each of them.” (G. A. Cohen 1995, 122).

What does self-fulfilment mean? According to Elster’s contemporary interpretation of Marx, self-fulfilment (or self-realisation) can be “defined as the full and free actualisation and externalisation of the powers and abilities of each individual” (Elster 1986, 42–43). Self-actualisation means that what was potential becomes real. It entails the full and free deployment of our human

capacities. Self-externalisation is the process through which each person makes public his or her powers and abilities and by which one's "self-image (...) may gain substance and solidity" (Elster 1986, 43). Note that the ideal of self-fulfilment is not particular to Marxist philosophy. As we shall see in §5, liberals, such as Mill ([1859] 1974) and Taylor (1991), also share a commitment to this value.

Thirdly, fraternity differs from sympathy, as defined by Sen (1977, 326): people acting out of sympathy care about the welfare of others *only* in so far as it increases their own welfare, whereas a fraternal person does not *primarily* seek a personal reward or an increased level of welfare when helping his or her fellows. Cohen's comrades, as we may call them, do care about their personal welfare but also commit to help each other in a joint venture towards personal fulfilment. Like Jazz players, they strive to give to each the occasion and the means to fulfil him- or herself.

Does it make any sense to talk about developing truly fraternal relationships? One could contest the very possibility of fraternity and of disinterestedness more generally (Elster 2009, 25ff). We can never observe whether the intent of another person is truly fraternal, or whether it is pervaded by self-interest. Even our own motivations are often obscure to ourselves. As Kant has argued, we can never be sure of the true inner principles that drive our own actions (Kant [1785] 1998, 19–20). Moreover, as Sen (1977, 322) notes, it is always possible to make up a credible story of how apparently disinterested acts are in fact performed out of self-interest. It may, therefore, be convenient to attribute a self-interested motive to every human action (See also Elster 2009, chap. 1). However, indeterminacy of our true motives can only lead to scepticism, not to the conclusion that moral motives are non-existent. Similarly, the fact that it is always possible to interpret an action as motivated by self-interest only is not sufficient to dismiss the possibility of fraternity or disinterestedness. There may not be any possibility to prove the existence of genuine disinterested acts. Describing the motives of human actions in terms of self-interest, or of fraternity, might, therefore, be an empirically unwarranted choice, or a kind of bet.

4.3. Restating the critique

We now have a clear definition of fraternity, which is the disposition to act for the sake of another person's interests because this person needs it, not because I expect a reward in return. The difference between community and fraternity is that the former relies on informal rules and unchosen conventions imposed by society while the latter motivates people to act deliberately for the good of others. Community is a way for society to regulate human interactions. Fraternity is a human motivation. Fraternity also differs from the market motive, which relies on the expectation to get a reward for one's action.

These definitions shed some new light on the meaning of Blanc's complaint against the "asocial and egotistical calculations" inherent to the "western market ideal" (Blanc 2007, 38, my translation). On the basis of the concepts developed in the previous section, I would like to propose two interpretations of that complaint.

A first possible version holds that, in a market relation, human motives are purely self-interested and that, therefore, people fail to treat each other as ends. This first version is inspired by a loose reading of Kant ([1785] 1998). Marx and Engels expressed a similar intuition in a more dramatic tone in the *Communist Manifesto*: "The bourgeoisie (...) has left remaining no other nexus between man and man than naked self-interest, than callous "cash payment". (...) The bourgeoisie has torn away from the family its sentimental veil, and has reduced the family relation to a mere money relation." (Marx and Engels [1848] 1888, 15–16).

The second version relates to Cohen's claim that market relations clash with the value of fraternity. Cohen's argument starts from the premise that fraternity is a valuable ideal. Then, it goes on with the claim that, in a market relation, people fail to treat others in a fraternal way. As Cohen (2009, 44) argues, "in a market network, no one does anything for anyone without getting something from that person". For that reason, the market is wrong, it is a mix of "greed and fear" (G. A. Cohen 1991, 12). Note that Cohen is not the first to raise that argument. Polanyi displayed similar worries when he

expressed discontent against market values, which, according to him, boil down to “fear of starvation for the worker” and “lure of profit for the employer” (Polanyi 1947, 111).

As we shall see, the second version is empirically less demanding than the first: Cohen’s argument only requires that, in a market relation, people are *primarily* moved by self-interest, while Kant’s argument demands that self-interest is the *only* motive of the interaction. I study both versions in turn, and then make a proposal for a revised version of this critique.

4.3.1. *Kantian/Marxian argument*

Treating others only as a means to get an advantage entails considering others as mere means, and fails, therefore, to treat them also as ends. It violates the Kantian imperative of never treating others only as means, but always also as ends. When a person is simply a means to get a reward, that person becomes perfectly substitutable with another: his or her value depends only on the services he or she can render to others. To consider a person as substitutable for another is to deny his or her inner value, and fails, therefore, to consider her/him as an end.

A basis for this argument can be found in Marx and Kant. However, I do not want to claim that Marx and Kant had exactly that argument in mind when writing on the market. A serious interpretation of their work would account for several additional elements of their philosophical system, which I leave aside here. The insights drawn from their theory will nevertheless help us to make sense of an often-heard criticism of the market, which takes, in the writings of Blanc, for instance, the form of a blame against “asocial and egotistical calculations”.

Marx wrote that the bourgeoisie “has resolved personal worth into exchange value” (Marx and Engels [1848] 1888, 15). Maybe he was inspired by Kant, who wrote that “in the kingdom of ends everything has either a price or a dignity. What has a price can be replaced by something else as its equivalent; what on the other hand is raised above all price and therefore admits of no equivalent has a dignity.” (Kant [1785] 1998, 42). In other words, since, in a market relation,

others are only a means to get a reward, they cannot also have a dignity. Markets put a “price” or an “exchange value” on people, and therefore deny their “dignity” or their “personal worth”.⁶⁹

What Kant and Marx would require, therefore, is that, in any human relation, people never treat each other only as means, but also as ends. What counts is that people never consider others only as ways to get a reward, but also as subjects of more humane social relations. They, therefore, oppose an extreme form of market interactions, in which all kinds of non-self-interested motives would have disappeared.

However, several authors have shown that most economic transactions cannot be described as pure market transactions: all human interactions are influenced by many different social norms or values, which might supersede market norms. Many different motivations are involved in economic transactions, not only self-interest (Shearmur 2003; Steiner 2014). This shows that, even if markets do make people relate to each other as means, they do not make them relate as mere means. When I take the tram, for example, the driver helps me to get around and is, therefore, a means. However, this does not necessarily mean that I deny his dignity as a person. It is entirely possible to take the tram and respect the dignity of the driver. As long as other motives permeate the commercial relationships, one cannot claim that they reduce people to mere means. Similarly, the fact that one person is substitutable for another for the performance of a task does not necessarily imply that his or her dignity is thereby denied.

In fact, Marx and Kant criticised an extreme situation, where all disinterested motives would have disappeared. However, as far as market motives are mixed with a sufficient dose of other motives, so that people are also considered as ends, they cannot conclude that there is something wrong with the market (Walsh and Lynch 2008, 80). As far as the social sphere is sufficiently larger than the market

⁶⁹ For a more thorough discussion of Kant’s views on these issues, see Walsh and Lynch (2008, 72–73).

sphere, the market is not a threat for the development of more humane social relations.

This does not mean that a Kantian criticism of the market has absolutely no worth. But we will have to revise it substantially. Note, first, that there is a distinction between promoting self-interest outside the market sphere and relying on self-interest. The existence of the market relation relies on self-interest, for there can be no markets without self-interest (see §2.3 above). On this, Marx and Kant are right. Self-interest is one of the defining features of the market relation and one important rule of the game. A fully altruistic or fraternal society is incompatible with a market mechanism, as people would not agree, in such a society, to take advantage of others' needs or working abilities. However, this does not mean that the market necessarily promotes self-interest outside its sphere, nor that its functioning rests entirely on self-interested motives.

4.3.2. Cohen's argument

The first version of the critique is thus unable to show that the market motive is inherently wrong. It can only target the extreme case of a purely self-interested market society. As far as there are mixed motives in a transaction, the argument collapses. However, it would be misleading to conclude, like Brennan and Jaworsky (2015) or McCloskey (2006), that these facts about real economic transactions make the market relation immune from moral wrongs. Doing so would amount to ignoring what properly distinguishes the market from other kinds of social institutions. I may well treat my butcher as a friend: this would not mean that the market is a friendly kind of encounter, but that our interaction is not a market interaction. There is always some degree of self-interest in all market transactions, and this may be the target of a second version of the argument: namely, Cohen's complaint that markets conflict with fraternity. Whatever the weight of self-interest in market relations, we can still inquire whether it is right or wrong to develop self-interested relationships. In that sense, Cohen's critique is thus

immune from the “mixed motives” objection according to which market relations are never fully self-interested.⁷⁰

What is wrong with self-interested social relations? Remember that the market motive entails that “no one does anything for anyone without getting something from that person” (G. A. Cohen 2009, 44). Cohen argues that this conflicts with fraternity, or the fact that everyone commits to serve others because each cares about others’ needs. Cohen ranks fraternity alongside other moral values, such as liberty and equality. For him, the market is wrong because it infringes on the value of fraternity.⁷¹ I have rejected the empirical objection to Cohen’s claim: even mixed motives contain some self-interest that conflicts with fraternity. But it may be subjected to two potential additional objections.

First, self-interest may not be necessarily so bad. Self-respect, for instance, may constitute an honourable virtue (Walsh and Lynch 2008, 79). On one view, self-respect involves the recognition of my inner capacities to flourish, to develop a conception of the good, to choose the person I want to become. I respect myself when I recognise that I have these capacities, that I am not simply a machine-like being. This first conception of self-respect relates to Rawls’s conception of the person, as possessing the moral powers to develop a conception of the good and a sense of justice (Rawls [1993] 2005, 15–34, 2001, 18–24). Self-respect may also relate to the more demanding view that humans ought to develop their capacity to realise themselves according to their own goals. According to this

⁷⁰ Nicholas Vrousalis (2011, 156–57) provides another response to that same challenge. He differentiates “small-scale commodity production”, which is “not necessarily unjust or unfraternal”, from “generalized commodity production”. The main difference is that the latter includes a labour market, while the former does not. In short, he opposes pre-capitalist to capitalist markets, and argues that only the latter is unfraternal. However, social relations can be quite unfraternal also at the local, small-scale level. The market logic can pervade in my relations with my local vegetables vendor as well as with more distant traders.

⁷¹ Cohen (2009) also blames inequality for the same reason. Like relational egalitarians such as Anderson (1999), he regrets that income or wealth inequalities prevent people from relating as equals in a fraternal way. This argument falls outside the scope of the chapter, though.

second view, self-respect entails the duty to flourish, and not simply the recognition of some inner capacities.

According to Taylor (1985b), this second view originates in Kant's conception of freedom as rational self-determination. It is held by liberals such as Mill ([1859] 1974, 123) or Buchanan ([1979] 1999, 259), for whom the purpose of liberty is to improve our own individuality. The Marxian concept of self-realisation, also comes close to that ideal (See Elster 1986, 42–43). As we saw above (§4.2, p.148), self-realisation means the full and free development of our human capacities. For Cohen, for instance, communism is best described as “a concert of mutually supporting self-fulfilments” (G. A. Cohen 1995, 123). Finally, communitarians such as Taylor defend that we ought to develop our “essentially human capacities”, such as the capacity to form moral and religious convictions, to conduct one's life rationally, and to shape one's life and environment according to one's conception of the good life (Taylor 1985a, 195).

Self-respect is mainly a self-regarding kind of self-interest (Walsh and Lynch 2008, 79). But it would be misleading to conclude that respecting oneself has no consequence for our relations with others. Whether self-respect is conceived in a thin sense (recognition of one's capacities to flourish) or in a thick one (duty to develop our capacities), it involves interacting with others, for no one can develop or come to recognise its capacities and moral powers in isolation from other human beings (Taylor 1985a). Do these relations necessarily involve taking advantage of others in a self-interested way? One could argue that I must take advantage of my professor's time and knowledge to develop my own, and of my competitor's weaknesses to beat them. Moreover, conflicts may arise around the fulfilment of each person's capacities, for resources are scarce and interests are divergent. The succeeded fulfilment of person A may only come at the cost of the failed fulfilment of person B. This leads us towards a quite pessimistic view of human self-fulfilment. Shouldn't we rather hold the opposite view that only genuine fraternal cooperation may lead us to recognise and develop our human capacities? As we have seen, Marx thought that communism was a condition for the full and free development of each person's

self-fulfilment. Is this true? This is a question that I cannot answer. But it remains a real challenge for fraternity that respect for one's capacities, or the duty to flourish, might sometimes promote self-interested social relations.

A second objection to Cohen's defence of fraternity is that developing fraternal social relations can be excessively burdensome. In non-ideal society, such as our patriarchal society, caring tends to fall disproportionately on women, and more generally on the most disadvantaged members of society (Bartky 1991). However, even in Cohen's ideal society, both the one who cares and the one who is cared about may feel excessively under pressure. The former because she may sacrifice too much of her own welfare and resources, the latter because of intrusion into her private life. Even if caring about others' needs for their own sake is certainly an important moral virtue, cold-blooded relationships may sometimes preserve us from potential forms of domination and from excessive social scrutiny.

Cohen, therefore, might put excessive weight on fraternity. However, he pushes us to think more about the right balance between self-interested behaviour and other social norms. That is the subject of the next section.

5. The right proportion

What should we keep from this discussion? The study of the first argument tells us that there is an apparent conflict between freedom and community. The analysis of the second leads us to acknowledge that, despite the fact that a pure self-interested form of interaction is undesirable, we cannot get rid so easily of self-interest *per se*. Nor can we blindly support fraternity.

The arguments of the previous sections were mostly negative. They led me to reject or moderate several claims raised against the market. This section attempts to provide a more positive contribution to these debates. Cohen based his argument on the value of fraternity. Is it possible to find other arguments in favour of limiting the weight of self-interest in human relations?

I will put forward two additional arguments in support of the fact that a right balance of different kinds of human motivations must be found. The first insists on the worth of sustaining a plurality of ways of interactions within society. The second contends, in addition, that a certain kind of motivation, which I call political commitment, and which relates to disinterestedness as discussed by Elster (2009), is an important ingredient of a just and democratic society.

There is, first, the importance of safeguarding multiples ways of relating to each other and of valuing goods and persons (Taylor 1982; Anderson 1993). Each of us may relate to others in a great number of ways (out of self-interest or fraternal concern, for instance). Each of us may also value others for several reasons: we may value other persons because we love them, or because they give us money, or because we feel some sort of obligation towards them. Similarly, we may value a certain good because it gives us sensual pleasure, or because it reminds us of some nice memories, or because we think eating this food is in line with some religious beliefs, or because we received it in a specific context. I could give numerous additional examples. My point is that we should value this pluralism of modes of valuing things and of relating to each other.

First, the world would be damaged and impoverished if this plurality disappeared. On the one hand, there is no unique “right” or “good” way to value a given good or to relate to another person (Taylor 1982). Neither self-interest nor fraternity can exhaust the fullness of human motivations. On the other hand, it is often impossible to reduce all human motivations or valuations into one single motive or value. Some of these motives and values are incommensurable to each other (Raz 1986, chap. 13): they cannot be compared on a common scale nor substituted for one another. Therefore, we should safeguard the possibility for the existence of a plurality of ways to value and to relate to our fellows and our environment, alongside the market way of treating objects as commodities and persons as means. For different human motivations and ways of valuing all have their own value while being, like rare species of birds, irreplaceable by one another. If one motive

came to replace all other, the world would be irremediably impoverished.

Second, sustaining a multiplicity of modes of valuing and of relating to each other is also a necessary condition for the free development of our capacities. Mill ([1859] 1974, 138–39) contends that, without a plurality of situations, one is prevented from developing one’s full capacities, from attaining personal greatness. For one lacks the necessary models (positive or negative) which drive one’s own willingness and capacity to become a better human being. Anderson (1993, 141–42) holds a similar, but less perfectionist argument, according to which a plurality of modes of valuing is a condition for autonomy: people cannot make autonomous choices if they are prevented from developing multiple ways of valuing the world that surrounds them and of relating to each other.

However, it can be difficult to argue that any kind of motivations (even the most fanciful) must be preserved. Apart from self-interest and fraternity, whose relevance has been discussed at length above, I would like to argue that a third form of motivation is worth preserving and developing. In a previous section (§4.2), we have seen that different ways to relate to others differ in one important dimension. Some entail a higher readiness to give up one’s own interest in the pursuit of the welfare of others, or in the pursuit of a more abstract ideal, such as justice or the common good (See Elster 2009, chap. 3). This comes in degree of course. Markets probably lie close to the extreme where this degree is equal to zero. In a pure market relation, by definition, there is no readiness to sacrifice self-interest. Fraternity, on the contrary, entails that one agrees to pursue the good of others. Other social relations, which we can encounter in the political realms, illustrate a form of disinterestedness in which one, in addition to the care for others, may also commit to a more abstract ideal (that of democracy for instance). I shall call this “political commitment”.

Why should we care about political commitment? Why should we grant it some special worth?

Political commitment, the willingness to give up part of one's own well-being for justice and democracy, might be desirable in itself. But it is also, and above all, instrumentally necessary for a just and democratic society. A democratic and just government of human affairs demands that some people at least (if not all) care about justice and democracy, not simply about themselves or the welfare of others, and perhaps even at the cost of their own interests.

This relates to Rawls's distinction between the rational and the reasonable. People are rational if they choose the best means to achieve their goals. Reasonable people, on the contrary, are ready to propose and to honour the principles of a just society, "even at the expense of their own interest as circumstances may require, provided others likewise may be expected to honour them" (Rawls 2001, 6–7). That people recognise the fairness of the principles of a just society and the necessity to honour them guarantees the stability of the just society (Rawls 2001, 195–97). In that aim, the institutions of a just society should nurture people's "sense of fairness" and "spirit of cooperation" (Rawls 2001, 116–17).⁷²

One could wonder why justice and democracy make it necessary for people to renounce to a part of their wealth, or to better life's prospects (at least in some circumstances). Why is political commitment necessary? Why could the market motive not suffice to attain that aim?

First, people may rationally choose not to take any part in political discussions and in constitution making, simply because they acknowledge (quite accurately) that they have, individually, no weight in such decisions. This is the problem of "rational ignorance", stressed by Buchanan ([1989] 1999, 370–71), who argues that "becoming informed about, and participating in the discussion of,

⁷² Rawls notes that the necessity to nurture such a "reasonable human psychology" is a common feature of his approach and of classical republicanism, or the view that "unless there is widespread participation in democratic politics by a vigorous and informed citizen body, even the best designed political institutions will eventually fall into the hands of who hunger for power" (Rawls 2001, 144). Both views acknowledge that "if we are to remain free and equal citizens, we cannot afford a general retreat in private life" (Rawls 2001, 144).

constitutional rules must reflect the presence of some ethical precept that transcends rational interest for the individual. The individual who acts on such a precept behaves “as if” his or her own influence on the ultimate selection among regimes is more than that which a rational choice calculus would imply”. In some way, the fact that we live in democracies may be the proof that we do have disinterested motives. Contrary to what a previous discussion suggested (see §4.2, p. 149), we may not be agnostic on the possibility of altruism, after all.

Second, some rules may be just and democratic, but against my interest. Even if all societies might involve a great deal of mutually advantageous agreements, not all agreements are, in the short term at least, beneficial to all parties (Rawls 2001, 7). Elster (2009, 92–93) takes the example of the members of the American Constitutional Convention of Philadelphia (1787), who designed certain articles of the American Constitution against their immediate interests as members of the bourgeoisie (but not all). The absence of such instances of political commitment, or disinterestedness, would severely threaten our democratic societies.

For these two reasons, the market motive, which is grounded in self-interest, cannot suffice for the establishment of a just and democratic society. A pure market society, which would make human relations solely dependent on self-interest, would seriously undermine the possibility of a just society. Markets are based on impersonal contractual relations. This has, of course, a nice consequence, which I described as the possibility for obligation-free social relations. But it has an important shortfall: in a market relation, commitment is a function of personal rewards and incentives only. A pure market society is, therefore, incompatible with the social basis necessary for a democratic and just society, in which people should commit to common welfare and to justice, even if this is not in their interest to do so.⁷³

⁷³ I may add that reliance on one’s commitment for higher ideals need not degenerate into the horrible forms that it has sometimes taken. We should hope that the emancipation of real men and women will always come before the realisation of an

6. Conclusion: what consequences for alternative currencies?

What are the consequences for alternative currencies of this lengthy discussion? A first conclusion concerns the fact that the two arguments which proponents of alternative currencies sometimes put forward are not necessarily corroborated by empirical facts. Markets do not necessarily erode communitarian bonds. Nor do they necessarily alter social norms. These criticisms might thus fall off target. On the normative side, a full defence of these arguments is far from obvious. The worth of community cannot provide a convincing case against the market for someone who is attached to freedom, even in the substantial sense of human flourishing and self-fulfilment. Cohen's critique of the market is more convincing, and less threatened by empirical objections, but cannot provide a case for the universal rejection of all self-interested motives.

Beyond these rather abstract arguments, one may doubt that alternative currencies may actually have anything to do with these criticisms, even if we assume that the latter are indeed valid.

Intuitively, it is not obvious that money is at the heart of the problem. After all, many non-market sides of life take a monetary form. Hospitals, universities, health care, unemployment benefits, pensions and other kinds of social security benefits have an important cash component, which does not seem to threaten their non-market nature. There are plenty of money's uses that have nothing to do with the market. Doctors, monks and academics are paid in cash: this does not mean they necessarily behave like greedy capitalists. It would be false, therefore, to consider "money" and

abstract ideal (Arendt 1958; G. A. Cohen 1974). Koestler (1967, 234) warns us in a dramatic tone that "the crimes of violence committed for selfish, personal motives are historically insignificant compared to those committed ad majorem gloriam Dei, out of a self-sacrificing devotion to a flag, a leader, a religious faith or a political conviction. Man has always been prepared not only to kill but also to die for good, bad or completely futile causes. And what can be a more valid proof of the reality of the self-transcending urge than this readiness to die for an ideal?" In a less tragic tone, one may follow Brassens' motto: "Mourir pour des idées? D'accord mais de mort lente!".

“market” as one and the same thing. The former is not necessarily the agent of the latter.

Polanyi (1957) already reached that conclusion. He stressed that money could serve various purposes, not all of which are related to the market. However, as Blanc argues, the discourse of activists is sometimes ambiguous, and many still consider that universal money is inherently connected to market values (Blanc 2015, 2018a, 112–13). It should now be clear that it is the way money is used that might be problematic, not money itself.

Moreover, we can have doubts that alternative currencies constitute effective barriers against market values. On the one hand, one should not oppose the market for the wrong reasons. If the goal of alternative currencies is to constitute and strengthen communitarian links, as Blanc’s and Servet’s insistence on “social totalities” might indicate, we must be aware that it would conflict with freedom. On the other hand, there might be a discordance between beliefs about what these currencies can do and facts about what they yield in practice. A significant part of the alternative currency movement seems to oppose the self-interested nature of market exchanges and wishes to promote better ways to relate to each other. However, many currencies do not, in fact, appear to fulfil that aim, and even tend to promote an extension of the market.

Quite paradoxically, the authors who blame the market as “asocial” also praise alternative currencies for “facilitating exchanges that otherwise wouldn’t occur, for linking otherwise unused resources to unmet needs” (Lietaer et al. 2010, 99). These include “home cooking, tailoring, dog and cat sitting, gardening” (Blanc 2007, 40). In practice, it means that these currencies actually extend the scope of goods and services that are traded between people. This entails the risk that they become mere commodities (Blanc 2018a, 112–13). Indeed, it is quite unsure that these goods will be treated according to a different set of values and motivations by such currencies than on a market. We can have doubts that the use of alternative currencies will lead to more fraternal relations between people. Several studies concluded that they would work best in

communities that experience an already high level of confidence and social integration (Aldridge and Patterson 2002; Peacock 2006; Bowring 1998). They indicate that these currencies, even if they do require and rely on certain virtues, such as confidence and commitment (Servet et al. 1999), might not actually promote such virtues. Confidence and commitment are a condition, but not necessarily a consequence of the use of such currencies. If that is the case, it means that in a society which does not experience sufficiently high levels of confidence and commitment between its members, the expansion of alternative currencies in the economy might lead to an expansion of commodification, as more and more domains of economic life enter the sphere of exchange.

In sum, the conclusion is twofold. First, universal money might not be the problem. The prevalence of universal money does not necessarily entail the prevalence of the market. Second, alternative currencies do not always offer a credible response to the criticisms their proponents are raising. Some of their objectives are controversial (e.g. the constitution of strong communities). Even if they may have more valuable purposes (e.g. fraternity), these currencies might not constitute a reliable means to fulfil them. Consequently, even if freedom of association guarantees everyone's right to join the community of his or her choice (including an alternative currency experiment), the values of community and of fraternity are unlikely to provide sufficient reasons to encourage their growth. Perhaps, one could argue in favour of their development by showing that they foster the democratic virtues conducive to political commitment. That route remains unexplored, though.

GENERAL CONCLUSION

The main goal of this thesis was to provide a clear basis for the analysis of alternative currencies and for the assessment of the arguments in their favour. It proposed a new conceptual framework for understanding how these currencies differ from conventional currencies and attempted to use the tools of political philosophy in order to assess whether these currencies can provide a credible alternative to the present monetary system. Its purpose was to evaluate the merits and drawbacks of these currencies in a fair way. While taking seriously the arguments that their proponents put forward in their favour, it also considered their potential ills.

Currently, Bitcoin, local currencies, LETS, Time banks and other alternative currencies do not fulfil their promises. They are unable to localize the economy, to protect the environment, to get rid of the state's monopoly over money, or to constitute widely accepted means of payments. Common explanations of these failures include the power of routine and inherited habits, the menu costs that their use might entail for users, the organisational challenge that their implementation often requires and, most of all, their relatively low weight in the economy. The purpose of this thesis was to go beyond these practical issues and to ask whether, if one took these currencies seriously, one could have reasons to back them up.

(1) The first chapter attempted to delineate the differences between alternative currencies and official, or conventional, currencies. It proposed to distinguish currencies according to whether they are legal tender (official vs alternative currencies), to

the involvement of users in their management (participatory vs non-participatory currencies), and to the existence of limits to their use or purchasing power (universal vs bounded currencies).

Then, I considered three possible scenarios related to alternative currencies: radical proposals, such as Hayek's defence of competition in money or Lietaer's ecology of money; existing small-scale experiments complementing the current monetary system; and alternative currencies as channels of contestation and of critical knowledge on markets, money, and capitalism. Could these alternative proposals (either modest or radical) constitute desirable alternatives to the present monetary system?

(2) The second chapter focused on two radical proposals: Lietaer's ecology of money (Lietaer 2011a; Lietaer et al. 2012) and Hayek's competitive monetary system (Hayek [1976] 1990).

Lietaer and his co-authors argued that an ecology of money, that is, a monetary system constituted of a large array of alternative currencies circulating in parallel to each other, would be more resilient and stable than the present monetary system. However, I argued that adequate empirical evidence supporting his claim was presently lacking and that his argument was suffering from important conceptual flaws. I showed that his analogy between natural and monetary ecosystems was unlikely to hold and that his argument was relying on overconfidence in the spontaneous capacity of his ecology of money to reach a stable equilibrium. Finally, I warned against the possible dangers of disregarding the importance of central regulation of monetary policy.

Second, I discussed Hayek's competitive monetary system. Hayek provides two reasons to forbid the state from intervening in monetary policy and from imposing a legal tender: avoiding the inflationary bias of state interventions and respecting the right of all to choose the terms of their contract. He claims that a competitive scheme would put better controls on inflation and that it would ensure that the right to contract freely is respected. I attempted to demonstrate that his scheme would most probably not achieve price stability. Moreover, the strict enforcement of the right to contract

freely would seriously endanger the capacity of the state to intervene in the economy. I also argued, based on a rather consensual view in monetary economics, that imposing a legal tender and restricting people's freedom to issue their own currency was justified by the necessity for the state to intervene in monetary policy, even if the nature of its interventions are open to debates.

(3) The third chapter considered three proposals: a radical proposal to ban universal currencies and to replace them by a myriad of bounded currencies (Douthwaite 2012); a more modest proposal to complement the existing monetary system by small-scale bottom-up experiments (Derudder 2014); and a very modest proposal to consider bounded currencies as channels of contestation and of critical knowledge about markets, money and capitalism (Blanc 2016, 2018a).

The chapter started by a defence of a conception of justice conceived as the fair distribution of the real opportunities to pursue one's own reasonable life's plan. Then, I argued that the restrictions imposed by the radical proposal would conflict with justice in two ways. The tighter these restrictions, the more they would reduce people's real opportunities to pursue one reasonable life's plan and the more they would hinder redistributive policies. I showed that these restrictions were disproportionate to their aim. Their detrimental consequences on justice can hardly be justified by the pursuit of environmental sustainability, for there exist other reforms, such as environmental taxation, that might achieve similar environmental objectives but that would curtail less the pursuit of social justice.

Then, I reviewed the present outcome of existing small-scale experiments. Currently, bounded currencies are far from providing an effective response to the ecological, economic and social challenges that, according to their advocates, threaten our society and our economy. This chapter argued that their proponents are stuck in a dilemma. On the one hand, turning these currencies into effective channels of change would hurt justice, in a way that may not be

necessary for achieving their objectives. On the other hand, small-scale experiments are unable to achieve any significant outcome.

Faced with that dilemma, one could retreat by saying that their aim is not to achieve some quantitative objective, but to express discontent about the present state of monetary policy and the market society as a whole.

(4) The fourth chapter aimed at studying that discontent. It discussed two criticisms of the market that some proponents of alternative currencies are raising. Some argue that the market erodes community and conflicts with fraternal relationships (Blanc 2018a; Servet et al. 1999). They contend that some alternative currencies (LETS, Local currencies) could counter-act these trends and promote fraternity and community.

The chapter proposed a reconstruction of the concepts of “market”, “community” and “fraternity”, in line with the writings of Blanc and Servet. I proposed to define the market as a system of coordination of actions (through the price system) and as a peculiar form of social relations. In a market relation, social obligations towards others are limited to those agreed on consent, all goods are purely alienable and transferable, and the reasons for exchange are primarily self-interested. Then I studied the concept of community, which refers to the obligations that membership in a group creates for each individual, without relying on consent. Finally, fraternity, as defined by Cohen (2009), is the disposition to act for the sake of another person’s interests because this person needs it, not because I expect a reward in return. The careful examination of each of these concepts allowed me to study both arguments thoroughly.

First, I questioned the empirical validity of the claim that markets erode community. I showed that this claim was not necessarily supported by empirical evidence: many other components of the liberal society, such as secularism or the growth of the welfare state, contribute to the erosion of communitarian bounds. Then, I argued that the erosion of community may be a sign that people are becoming freer: they are no longer attached to a particular comprehensive doctrine or to unconsented social obligations.

Finally, erosion does not necessarily imply universal loneliness or the end of solidarity. Some argue that, within liberal societies, people can and should seize the opportunity that such societies give them to flourish and to develop their human capacities (Taylor 1991). Others that a socialist alternative would reconcile individual fulfilment and communal relationships for all human beings (e.g. G. A. Cohen 1991, 2009; Wright 2010). Moreover, adequate policies (such as the implementation of a universal welfare state) can sustain solidarity even in the absence of strong communitarian bonds (Banting and Kymlicka 2017).

Second, I considered the claim that markets conflict with fraternity. First, I examined the Kantian argument according to which markets are wrong because, in a market relation, people treat each other merely as means, and not also as ends. However, that argument applies only to purely self-interested market relationships. In real-world market interactions, people's motivations are more diverse and cannot be described as purely self-interested. Second, I focused on Cohen's claim that, in market interactions, people fail to treat others in a fraternal way. Indeed, even if market interactions may involve disinterested motives, they nevertheless do primarily rely on self-interest. Market relations, therefore, conflict with fraternity. In market relations, people do not serve each other because they care about each other's' needs, but, primarily, because they expect a reward. To what extent can we oppose self-interested motives? To what degree should we favour fraternity? I argued that there is no reason to ban self-interest altogether. On the one hand, disinterestedness might be excessively burdensome. On the other hand, the pursuit of one's self-fulfilment might sometimes require to take advantage of others. However, I also showed that there are good reasons to favour fraternity against self-interest. Fraternity is valuable for its own sake, as Cohen argues, but also belongs to the human values that enrich the human world. Disinterested motives are also necessary for justice and democracy. A democratic and just government of human affairs demands that some people at least (if not all) care about justice and democracy, not simply about

themselves or the welfare of others, and perhaps even at the cost of their own interests.

The fourth chapter also briefly discussed other reasons to limit the scope of the market, such as the initial unequal distribution of talents, resources, or preferences. Nevertheless, it argued that we should also cherish the place that the market gives to freedom from personal ties, and the possibility that it gives for the development of conscious, and possibly more diverse, consented commitments.

Finally, I considered whether alternative currencies can provide a response to these criticisms. Can they counter-act the market and promote community and fraternity? The last section of the fourth chapter raised serious doubts about their ability to do so. They might exist a discrepancy between the beliefs of the proponents of such experiments and their actual capacity to oppose market values. For the increasing use of some alternative currencies might lead to an expansion of the market sphere, through the commodification of goods and services that previously fell outside the sphere of the market (e.g. housekeeping services, gardening, etc). Consequently, even if their promoters may aim at reducing the market sphere, these currencies might not constitute a reliable means to fulfil that objective.

*

What is the general conclusion of this long inquiry?

First, I raised serious doubts regarding the desirability and feasibility of radical proposals. I argued that the arguments in favour of Hayek's competitive monetary system, Lietaer's ecology of money, or in favour of generalizing the use of bounded currencies were unable to demonstrate their merits. Second, I showed that small-scale experiments were stuck in a dilemma. If they stay small, they will probably be unable to achieve any significant environmental, social or economic objective; if they grow, they will seriously hinder the pursuit of justice. Third, I pointed out that alternative currencies do not always provide a credible way to answer the criticisms that their proponents are raising against the market. Even if they may retain a

limited place within society, I could find no compelling reason to encourage their growth.

This conclusion might sound excessively negative. I hope this modest work can have a more positive input, though.

When starting this thesis, my wish was to start a conversation with proponents of alternative currencies, a conversation that would rely on well-defined concepts and rigorous argumentation. I wanted to make sense of these currencies by applying the methods of political philosophy while remaining faithful to the motivations of their promoters. I started this inquiry with a rather friendly view on these currencies. I thought they could provide a credible alternative to the many flaws of the current monetary system. I still consider that the current monetary system has many flaws, some of which were studied in this thesis. However, I had to review my initial positive judgements concerning alternative currencies. The serious examination of the case in their favour revealed several conceptual imprecisions, logical flaws and serious objections. It led me to defend a position that lies at the opposite of my initial judgement.

That the conclusion of this thesis is different from what I would have expected four years ago is not an admission of failure. Rather, it is a sign of success for the method that I attempted to apply in this thesis. I hope that the main contribution of this thesis to the literature on alternative currencies will be an invitation to continue a rigorous discussion on the merits and shortcomings of alternative currencies, a discussion that will make extensive use of the conceptual and methodological tools that I developed in these pages.

Perhaps, that discussion could turn to the legitimacy of monetary policy and of different monetary creation processes. Indeed, several justifications of the state's interventions in monetary policy were discussed in this thesis, but were never given a full and satisfactory account. Is the management and the creation process of LETS and Local currencies more legitimate than the way the euro is created? Should citizens be involved in the Eurozone decision-making process? Which role should central banks play in our economies in the future? How should money be created and circulated?

Before the 2007 financial crisis, the central bank independence framework reigned (almost) unchallenged. Independence was conceived as a precondition for achieving price stability, financial stability and sustainable growth and employment (e.g. Issing et al. 2001). However, following the 2007 financial crisis, central banks have significantly increased their regulatory powers and widened the scope of their economic interventions (Goodhart et al. 2014). Moreover, monetary policy and financial regulation have increasingly become structurally dependent on the financial and banking sector as a channel of transmission of monetary policy (Braun, Gabor, and Hübner 2018). Paradoxically, central banks with enhanced powers rely increasingly on (often fragile) financial actors, whose readiness to effectively transmit monetary policy is open to doubts. Finally, several authors have warned against the tendency of unconventional monetary policies to increase inequalities (Dietsch, Claveau, and Fontan 2018) and pointed out the lack of accountability and transparency of central banks (Buiter 2014; van't Klooster 2018, 2019).

These developments require to rethink the relevance of central bank's independence and to question the legitimacy of current central bank's practices. What role (if any) could alternative currencies play in that framework? What means do we have to increase central banks' legitimacy? What democratic levers could generate a more just and legitimate monetary system? These questions remain, for now, unanswered and could constitute promising research avenues.

POST-SCRIPTUM: BITCOIN AFTER THE VIRTUAL GOLD RUSH

1. Introduction⁷⁴

Until now, this thesis has either focused on the case for alternative currencies in general (chapter II), or on arguments related to a limited group of them. Chapter III studied the case for bounded currencies, whose use is limited in some way; and chapter IV analysed several arguments raised by some of their proponents against the market. This chapter is concerned with another kind of alternative currency, namely cryptocurrencies, which have recently emerged and brought about important changes to the way we conceive money.

The reader might wonder what justifies the presence of this chapter in this thesis. Why analysing Bitcoin and crypto-currencies in a thesis on alternative currencies? First, as I argued in Chapter I, Bitcoin has its place along other alternative currencies (see Chapter I, p.54): it is a good example of an alternative, participatory and universal currency. Second, Bitcoin has attracted much attention in recent years, and not mentioning it would have constituted a grave lack. Finally, this thesis attempts to analyse whether alternative

⁷⁴ This chapter is a slightly revised version of a paper jointly written with Maxime Lambrecht and published in the Internet Policy Review (Lambrecht and Larue 2018). It also benefited from my work published in *Regards Économiques* (Larue 2016). For that reason, in this chapter, “We” replaces “I”.

currencies can constitute desirable alternatives. That is exactly the purpose of this chapter, with respect to Bitcoin.

Relying on cryptography and peer-to-peer networks, these cryptocurrencies do not rest on a central authority nor require any centralised management or system of payment. In the wake of criticism of the contemporary banking system following the 2007 financial crisis, they have gained in popularity, and have been presented as an alternative to the current payment system.

Having inspired a great number of alternative cryptocurrencies such as Ripple, Dogecoin, Ethereum, etc⁷⁵, Bitcoin remains the most prominent cryptocurrency in terms of valuation and public recognition⁷⁶. Bitcoin has been the subject of much enthusiasm, billed by some as “the future of money” (Frisby 2014), or presented as “challenging the global economic order” (Vigna and Casey 2015). Its proponents are often highly critical of state regulations over money, sometimes conceived as inadmissible infringements on freedom, or as inefficient, unsecure and inflationary (Nakamoto 2008, 2009).

Naturally, Bitcoin has also attracted a fair amount of scepticism, some going as far as denying that Bitcoin really constitutes a form of money (Dodd 2017; Glaser et al. 2014; Yermack 2013), or noting that the Bitcoin valuation exhibits all the characteristics of a speculative bubble (Dwyer 2015). Moreover, a substantial amount of commentary on Bitcoin focuses on its technical functioning, or on discussing the achievements and flaws of its underlying technology (Böhme et al. 2015).

Our aim in this chapter is different. We will avoid dwelling too long on how the technology behind Bitcoin works, or entering into the discussion as to whether Bitcoin is indeed a form of money. We want to take Bitcoin’s proponents at their word: if we consider Bitcoin as a form of money, is it appropriate for use as a currency?

⁷⁵ See www.mapofcoins.com for a comprehensive list of existing cryptocurrencies and their underlying technologies.

⁷⁶ While we will focus on Bitcoin, our discussion could also apply to other cryptocurrencies insofar as they share some of Bitcoin’s characteristics and aims.

Moreover, Bitcoin is often hailed for its supposed advantages over official currencies or the conventional payment system, such as being more stable, safer and more efficient, or in allowing to dispense with the need of a central authority. But can it effectively meet these expectations? And if not, is there more to Bitcoin than a speculative bubble? This is what we are going to discuss in this chapter.

After a brief introduction to Bitcoin for those not already familiar with its technical underpinnings (§2), this chapter reviews four separate arguments in favour of its adoption (§3), namely that Bitcoin can be a more stable currency, achieve a more secure and efficient payment system, provide a credible alternative to the central management of money, and better protect transaction privacy. We discuss the philosophical background of these arguments by showing how they relate to the principles of justice developed by libertarians such as Nozick ([1974] 2012) and Rothbard (2016), and neoliberal economists such as Hayek ([1976] 1990) and Friedman (1959, 1968). The fourth section of the chapter then assesses whether Bitcoin can effectively fulfil these expectations (§4). First, we will consider whether Bitcoin's design makes it a stable currency (§4.1). Second, we question the security and efficiency of Bitcoin's payment system (§4.2). Third, we discuss the issue of whether Bitcoin can indeed function as a radically decentralised currency, free from centralised governance or authority (§4.3). Finally, we address the extent to which Bitcoin can protect payment privacy (§4.4). We conclude that it is unlikely that Bitcoin can function as a currency unless it changes drastically, which would probably detract from the characteristics that make it attractive to its proponents.

2. What is Bitcoin?

Whether Bitcoin is, or is not, a form of money is still a highly debated issue (Bjerg 2016; Glaser et al. 2014; Urquhart 2016; Yermack 2013). Of course, the definition of money is itself a controversial issue. Money is sometimes conceived as a debt token (Graeber 2011), as a social relation (Ingham 2004), as a social totality (Aglietta and Orléan 2002), or as a particular social convention fulfilling a certain number of functions (Tobin 2008), among other

examples. Despite their divergences, most theories of money generally recognise that, in modern societies, money is a medium of exchange that is widely accepted within a specific community.⁷⁷ This definition will suffice for the purpose of this chapter. We will assume that Bitcoin can indeed be considered as a form of money, as our goal is to determine whether, as a currency, it can fulfil certain specific aims or functions.

Bitcoin differs in many respects from official currencies, such as the euro or the dollar.⁷⁸ Coins and notes are usually emitted by the central bank of each monetary zone (the European Central Bank for the Eurozone, the US Federal Reserve for the dollar), while deposit money, which constitutes the vast majority of money supply today, is made up of funds held in demand deposit accounts in commercial banks (McLeay, Radia, and Thomas 2014).

By contrast, Bitcoin is a decentralised cryptocurrency that rests on a distributed repository, protected and managed through the use of cryptographic protocols. It is thus independent of any central authority.

First, Bitcoin is not backed by a state or by a central bank. Contrary to the euro or the dollar, where a central bank is in charge of ensuring price stability and financial stability through adequate monetary policy (Goodhart 2011; Goodhart et al. 2014), there is no such central authority in the Bitcoin system. There is no lender of last resort either, that is, a state or a central bank that could bail out banks in the event of financial panic (Blinder 2010; Goodhart 1991).

Second, Bitcoin's payment system is entirely decentralised and rests on an open-source cryptographic protocol. This protocol originates from an article published in 2008 by a certain Satoshi Nakamoto (2008), whose identity remains mysterious (J. Davis 2011). The central innovation of Bitcoin, which puts together previous advances in cryptography, such as the proof of work

⁷⁷ See §1 in the general introduction for a discussion of possible definitions of money.

⁷⁸ Bitcoin also differs from other alternative currencies. In particular, Bitcoin is a universal currency, contrary to LETS, Local currencies, and Time Banks. See chapter I, §4.3, for a comparison between Bitcoin and other alternative currencies.

technology (Narayanan and Clark 2017), is that it is based on a decentralised public ledger (Ali et al. 2014). In a conventional payment system, banks hold a record of transactions and ensure that no unit of money is used more than once by the same user (“double-spending” problem). With Bitcoin, this control system is decentralised through a public ledger system operated on a peer-to-peer network. This ledger has several important properties. First, every user can verify and process transactions. Moreover, the Bitcoin protocol secures the ledger against falsifications, without resorting to any banking institution or any central authority. Finally, an important consequence of the public availability of this ledger is that Bitcoin can only preserve a “pseudo-anonymity” for its users: details of all transactions are logged on the public ledger, where the only indication of the identity of their parties is their Bitcoin address (Luu and Imwinkelried 2015).

A third crucial difference between Bitcoin and conventional currencies lies in its creation process. Every user can participate in the creation of new Bitcoins, by resolving a deliberately complicated series of algorithms (though in practice this “mining” process is mainly taken up by professional miners). The first Bitcoins were created from scratch and used by the first Bitcoins users. The first user of the protocol, assumed to be Nakamoto himself, mined the first 50 Bitcoins in 2009 (Wallace 2011). The following Bitcoins are created when new transactions take place, as a reward going to those who successfully add a new block to the ledger. More precisely, miners, by solving puzzles, try to verify each transaction and to get the right to add it to a new “block” containing several transactions, appended in the Bitcoin ledger (also called the “Blockchain”, for that reason). This new block is accepted within the ledger if it contains a valid transaction and a new puzzle solution. Miners are all competing to verify each transaction in order to get the reward attached to the completion of a block. Along with this reward, miners may also set a fee for processing transactions, as a complementary revenue. While at the start these fees were marginal, they have tended to rise steeply recently due to network congestion, which led to a major crisis about

reforming the protocol (see section 4.1). Eventually, every time a block is verified, new Bitcoins are mint.⁷⁹

However, this Bitcoin creation process has an algorithmic limit. The Bitcoin protocol has a marginally decreasing rate of bitcoin creation per block, which approximates the rate at which gold is mined. Therefore, the total supply of Bitcoins will asymptotically approach the amount of 21 million (Houy 2014), which, according to some estimations, will be reached around the year 2140 (Ali et al. 2014). The reward of miners is therefore set to decrease, being divided by two every 210.000 blocks, while the difficulty of mining is programmed to increase along with the network size. Nowadays, more than 17.5 million Bitcoins have been mined (according to blockchain.info, consulted 19/02/2019). Approximately 300 000 transactions take place every day, for an estimated value of less than 1 million BTC.

3. The case for Bitcoin adoption

Bitcoin's proponents do not form a homogeneous group, and many people may support Bitcoin adoption for different reasons. However, the main recurring cases for Bitcoin adoption may be summarised as follows:

- Bitcoin can constitute a more stable currency than conventional state-sponsored money, by taking monetary policy out of the government's hands,
- Bitcoin can provide a more secure and efficient payment system, compared to a system relying on trusted third parties.
- Bitcoin can dispense with the need of coercive institutions such as states and central banks, by achieving a decentralised securing of transactions through cryptographic proof.
- Bitcoin helps protect users' privacy against abuse of state power through government surveillance

⁷⁹ For a detailed presentation of how transactions in Bitcoins works, see Ali et al (2014, 7–8). For an overview of bitcoin, see Böhme et al (2015).

First, Bitcoin is often hailed as a means to achieve a more stable monetary system (Ametrano 2016; Collard 2017; Lakomski-Laguerre and Desmedt 2015; Rochard 2013). As Nakamoto (2009) stresses, with conventional currencies, “the central bank must be trusted not to debase the currency, but the history of fiat currencies is full of breaches of that trust”. As others have noted (European Central Bank 2012, 23), this criticism reminds the neoliberal critique that state monopoly in the issuance of money will necessarily lead to over-inflation, resulting in depressions and unemployment (Friedman 1959, 1969; Hayek [1976] 1990). Hayek argues that governments have a tendency to abuse their monopoly power by systematically creating too much money (Hayek [1976] 1990, 28–32). Similarly, Friedman and Schwartz (1963) argue that, historically, interventions of the Federal Reserve of the United States have been mostly detrimental to economic stability and have often worsened crises rather than solved them. Even if this account has been contested (Kindleberger 1973, 1978), Friedman argues on this basis that monetary policy should “avoid sharp swings” (Friedman 1968, 15) and proposed to “freeze” the monetary base by setting a fixed rate of growth in the amount of money (around 3 to 5 % according to Friedman (1959, 91, 1968, 16)). His argument is based on historical evidence, but also on his own theory, which, similarly to Hayek’s ([1976] 1990), predicts that excessive money creation is inflationary and cannot impact positively employment in the long run (Friedman 1968).⁸⁰

The Bitcoin protocol is designed in this spirit and has been praised for its “perfect monetary policy” (Rochard 2013): since no central agencies can control the Bitcoin’s supply, whose rate of growth is set algorithmically, it is immune from inflation. Actually, unless a majority of nodes decides collectively to modify the protocol itself, there is no procedure for altering the rate of Bitcoin creation. It is

⁸⁰ See Chapter 2, §4.1 for a discussion of some aspects of that argument, in relation with Hayek’s defence of a competitive monetary system. That previous chapter focused on whether a competitive monetary system would be immune from inflation. This chapter focuses instead on whether Bitcoin’s value can avoid “sharp swings”, as Friedman puts it.

not our purpose in this chapter to discuss the economic merits of such a fixed or “algorithmic” monetary policy, an issue which is the subject of an extensive literature (See Bordo 2008 for a review of the recent debates). However, as we shall see in section 4, to really fulfil that promise, Bitcoin must be able to dispense with any central governance altogether and it is doubtful that it could while retaining the other qualities that would make it an attractive currency.

Second, Bitcoin is often presented as the basis for a more secure and efficient payment system, which allows to dispense altogether with the need for a trusted third party (Ali et al. 2014; Angel and McCabe 2015; Grinberg 2011). According to Angel and McCabe (2015, 606), Bitcoin “represents a technological solution that creates appropriate incentives for honesty without needing a government to enforce laws against dishonesty.” This motivation originally comes from a distrust of banking institutions, which, in the context of the 2008 global financial crisis, many consider as unsafe (Ali et al. 2014, 6; Maurer, Nelms, and Swartz 2013, 261–62). Presenting Bitcoin in the aftermath of the crisis, Nakamoto (2009) has some harsh words for our current banking system, where “Banks must be trusted to hold our money and transfer it electronically, but they lend it out in waves of credit bubbles with barely a fraction in reserve”. Bitcoin’s payment system is presented as safer, since it does not require trusting any particular payment intermediary. Moreover, Nakamoto also points to two other disadvantages of having to rely on a trusted third party: the transaction costs it induces, as well as the possibility of fraud through reversal of transactions (See also Angel and McCabe 2015, 606). By providing “a system based on cryptographic proof instead of trust”, Bitcoin purports to reduce transaction costs due to the absence of intermediary, and reduces opportunities for fraud by making transaction irreversible (Nakamoto 2008, 1).

A third argument contends that Bitcoin may contribute to lessening the level of state coercion facing individuals, by putting money out of the control of governments or any centralised institution. Indeed, another common objection to the exercise of monetary policy by states, besides stability, stems out of a libertarian concern for the protection of the rights and liberties of individuals

(Nozick [1974] 2012; Rothbard 2016). Safeguarding these rights and liberties puts limits on what others can legitimately do to people without their consent. The state should keep only a marginal role, which basically consists of protecting property rights from theft or fraud. Apart from that, state interventions in the economy encroach on individual freedom (i.e. coercion), and is therefore wrong. This argument clearly rejects the possibility of the state's monopoly over money. In the words of Murray Rothbard, such a monopoly allows the state to act as a "legalized, monopoly counterfeiter" and use monetary creation as "a giant scheme of hidden taxation", therefore violating individual property rights (Rothbard 2016). Similarly, for Hayek, "legal tender is simply a legal device to force people to accept in fulfilment of a contract something they never intended" (Hayek [1976] 1990, 39–40). It thus violates their freedom to set voluntarily the terms of a contract.⁸¹

Libertarianism constitutes an important philosophical root among Bitcoin proponents (Golumbia 2016; Karlstrøm 2014; Lakomski-Laguerre and Desmedt 2015; Wallace 2011). For libertarians, such as Dowd (2014, 64), Bitcoin safeguards "the freedom of the individual to trade, and the freedom of the individual to accumulate, move and protect his or her financial wealth – in other words, financial freedom." Because it supposedly allows to dispense with the need for any central institution, Bitcoin may significantly weaken the hold of coercive institutions over individuals' lives.

Bitcoin's fourth alleged advantage flows from the previous one: because Bitcoin's payment system (supposedly) does not rely on trusted intermediaries, it would better protect the privacy of its users than conventional means of payments. For instance, Nakamoto (2009) complains that "we have to trust [banks and payment intermediaries] for our privacy [and] trust them not to let identity thieves drain our accounts". In the aftermath of the NSA surveillance scandals (Hintz 2014), which has shown that private intermediaries

⁸¹ See Chapter 2, §4.2 for a detailed analysis of Hayek's argument. The present chapter does not question the validity of this argument and rather focuses on whether Bitcoin's achievements are in line with it.

could rarely be trusted to protect the privacy of their customers against overreaching state authorities, privacy has often been viewed as one of Bitcoin's main appeal.

However, the extent to which Bitcoin can fulfil these promises is doubtful, as we will discuss in the following section. Indeed, while Bitcoin's distributed cryptographic proof is an important technical achievement with interesting potential applications, basic market analysis makes it dubious that Bitcoin's promise to act as a reliable non-inflationary currency is really sustainable (section 4.1). Moreover, there are reasons to be wary of its claim to provide a more secure and efficient means of payment, due to the prevalence of intermediaries and transaction costs (section 4.2). Besides, Bitcoin's decentralised architecture, while making it independent from central governance from banks or states is also what makes it extremely difficult for its community of developers and users to govern it (section 4.3). Finally, it is highly unlikely that Bitcoin can meet the expectations of users who regard it as a way to better protect the privacy of their transactions, and even if it did, it would raise serious issues for the possibility of law enforcement and redistribution (section 4.4).

4. Can Bitcoin fulfil its promises?

4.1. Is Bitcoin a stable currency?

One of Bitcoin's main promises is to provide a more stable currency than conventional, state-backed money. Bitcoin would not be plagued by the states' or central banks' inflationary biases, or otherwise nefarious monetary decision.⁸²

Even if Bitcoin were more widespread in the population, day-to-day use of Bitcoin as a currency would still face important hurdles, due to its high volatility compared to other currencies. Indeed, this

⁸² In this chapter, stability means absence of price volatility, in line with Friedman's insistence of avoiding "sharp swings". This differs from the meaning that Lietaer gives to the concept, as a balance of resilience and efficiency (see chapter II, §3).

volatility undermines its quality both as a means of exchange and as a store of value.

Bitcoin's volatility is well illustrated by the following graphs (Figures 1, 2 and 3) which show that Bitcoin's price has gone up and down between 2013 and the present day. Figure 1 illustrates how the market price of a Bitcoin has sharply risen from around 5 dollars in 2011 to an all-time high of \$19,783 by the end of 2017. However, due to the scale of this graph, it fails to accurately depict how Bitcoin's value has varied on a day-to-day basis. To better illustrate Bitcoin's volatility, it is useful to represent this data in two additional close-up graphs. Figure 2 is limited to the pre-2017 period while Figure 3 focuses on the period between January 2017 and the present day.

Financial economists have studied Bitcoin's volatility in depth. Dwyer (2015) finds that Bitcoin's average volatility is always higher than for gold or a set of foreign currencies.⁸³ Cheah and Fry (2015) and Cheung, Roca, and Su (2015) show, using econometric models, that the price of Bitcoin exhibits speculative bubbles. These studies show how, for many users, Bitcoin is mainly used as a speculative asset, which people buy and sell for the sake of rapid financial profit, explaining why, as a consequence, its value has varied sharply throughout time. This has led some to conclude that Bitcoin is a financial asset rather than a currency (Urquhart 2016).

Why does volatility matter? First, a volatile asset is a less secure asset, from an investor's point of view. Contrary to gold or government bonds, it might yield a greater return, but bears the risk of abruptly losing its value. Second, volatility means that one cannot predict the future value of a commodity (labelled in Bitcoin), which tends to fluctuate constantly and in a random way. This means that Bitcoin cannot be a stable unit of account as it is unable to represent adequately the value of goods and services. Volatility exacerbates

⁸³ Dwyer studies the volatility of the value (expressed in US dollars) of the currencies of Australia, Brazil, Canada, China, Denmark, the Eurozone, Hong Kong, India, Japan, South Korea, Malaysia, Mexico, New Zealand, Norway, Sweden, Singapore, South Africa, Sri Lanka, Switzerland, Taiwan, Thailand and the United Kingdom

uncertainty and undermines the possibility of contracting in Bitcoin, which cannot, therefore, constitute a reliable means of exchange and a secure store of value.

In sum, the empirical evidence from Bitcoin's financial records appears to contradict the claim that Bitcoin can provide a stable means of payment and store of value, in line with the theoretical prescriptions of Friedman and Hayek.

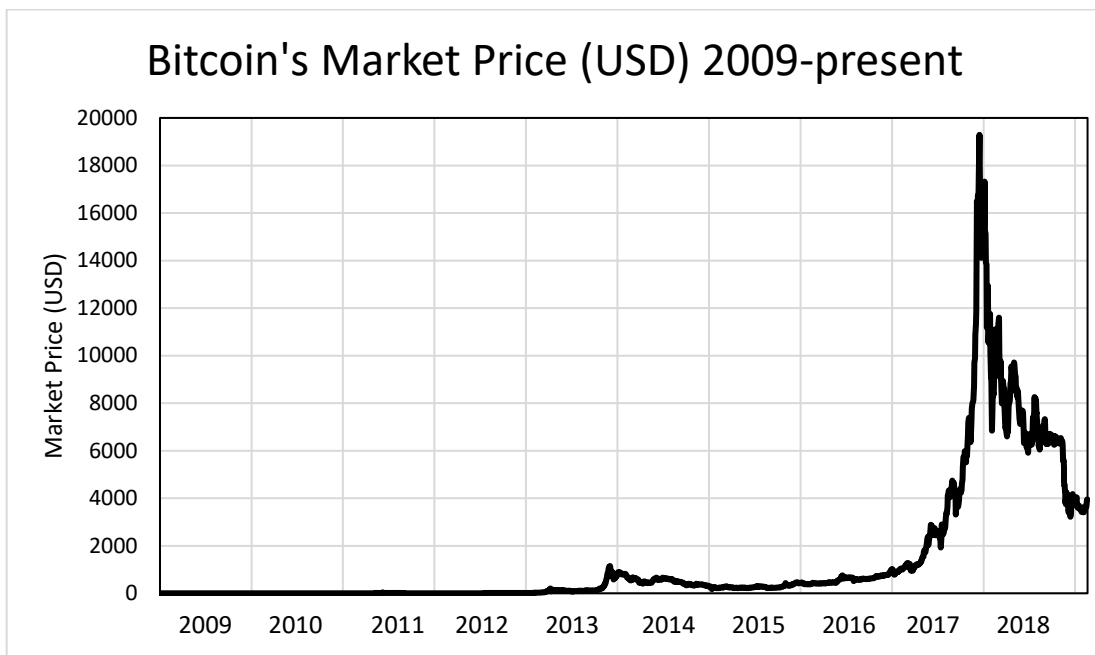


Figure 1 - Bitcoin's market price 2009-present (source: Own elaboration based on data collected on Blockchain.info)

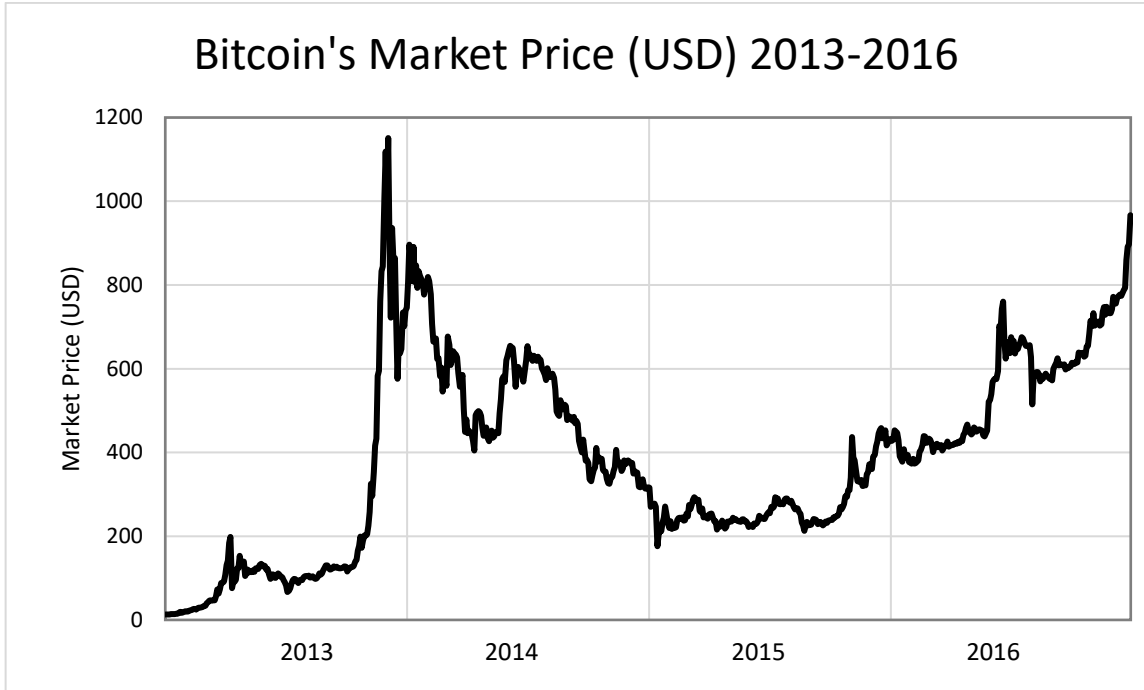


Figure 2 - Bitcoin's market price 2013-2016 (source: Own elaboration based on data collected on Blockchain.info)

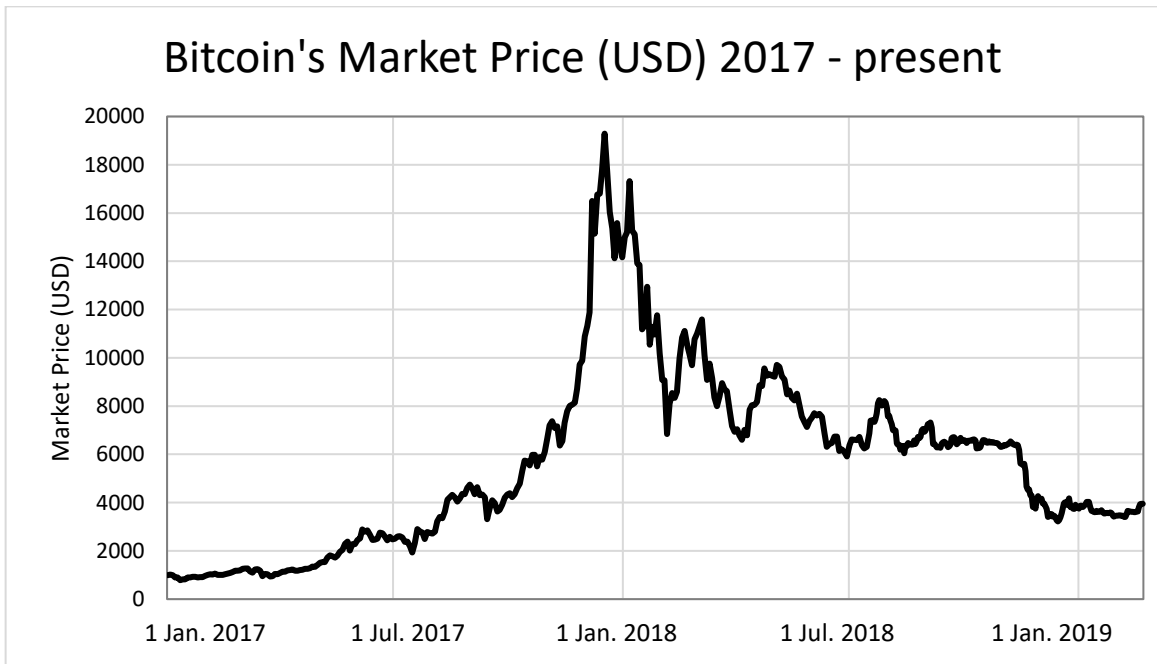


Figure 3 - Bitcoin's market price 2017-present (source: Own elaboration based on data collected on Blockchain.info)

4.2. Is Bitcoin a secure and efficient payment system?

A second argument in favour of Bitcoin adoption contends that it is a more secure and efficient means of payment and store of value than conventional money, as its payment system does not rest on centralised institutions, such as banks.

However, while Bitcoin's protocol itself is remarkably secure against possible abuses or manipulations, this security is undercut by the difficulty for users to secure their Bitcoins against fraud or loss. Indeed, Bitcoin users are faced with a dilemma between ensuring their own security, and trusting intermediary services. Storing one's wallet on one's computer is not much different than keeping one's money in a safe: unsecure password can be cracked, stolen through "phishing" scams, or simply forgotten. And because Bitcoin transactions are non-reversible, victims are left without recourse in case of theft (Guadamuz and Marsden 2015, 10).

Therefore, for many users, online wallet services and even Bitcoin exchanges can appear as safer alternatives for storing and trading one's Bitcoins, just as banks are considered safer than keeping one's money in safes. But if one resorts to such online intermediaries, Bitcoin is not any more secure than conventional currencies, where one has to rely on banking and payment intermediaries. It can even be even less secure, as few of these services are (for the moment) regulated beyond the usual protection of general contract and insolvency law (the main target of legislators having been the use of cryptocurrencies for money laundering⁸⁴). Users of cryptocurrencies are therefore left without much protection against fraud or bankruptcy. The bankruptcy of MtGox, one of the prominent Bitcoins' exchange platform (where Bitcoins can be traded for national currencies), has shed light on the risks taken by Bitcoins' holders (Popper and Abrams 2014). The collapse of MtGox was

⁸⁴ In that regard, let us note the inclusion of virtual currency exchanges and "custodian wallet services" among the services regulated by the recently adopted 5th Anti-Money Laundering Directive, Directive 2018/843. In the US, although no new legislation was adopted on the matter, these services are effectively considered as covered under the Bank Secrecy Act according to FinCEN's guidance on virtual currencies, US Department of Treasury, 18 March 2013.

partly due to technological incidents, and to an apparent theft of no less than 744.000 Bitcoins, valued approximately at \$350 million at the time (Popper and Abrams 2014). This illustrates how Bitcoin's users are highly vulnerable to frauds or to bankruptcies affecting exchange platforms. As the European Banking Authority rightly highlights, "no specific regulatory protections exist that would cover you for losses if a platform that exchanges or holds your virtual currencies fails or goes out of business" (European Banking Authority 2013, 1). On the contrary, centralised payment systems, such as the Euro system, are partly protected from such events. In Belgium, for instance, banking deposits are guaranteed by the state up to 100.000€ per person.⁸⁵ Of course, the protection of deposits differs from the protection of payments. However, the fact that deposits are protected is an indirect protection of payments: people are ensured that their money is safe (or a large part of it) and the continuity of payments is therefore guaranteed. Moreover, states usually play the role of lender of last resort. If banks go bankrupt, that is, if they cannot honour their debts any more, states can usually bail them out to avoid a collapse of the economy. These two kinds of protection are absent from the Bitcoin's payment system, which exposes users to frauds and to bankruptcies of exchange platforms.

Another difficulty for Bitcoin to act as an efficient means of payment is the issue of transaction costs. While Bitcoin speed and low transaction fees were advocated among the cryptocurrency's assets compared to traditional banking solutions, Bitcoin's scaling problem due to rising user adoption (which we will cover more extensively in the next section) has radically changed the equation.

Indeed, the congestion in the Bitcoin network led to a sharp rise in transaction fees. While for most of the cryptocurrency's history users have enjoyed negligible transaction fees, the average transaction fee had risen from less than \$0.1 in January 2017 to about \$4 in June 2017, even (briefly) reaching an all-time high of almost

⁸⁵ As described on the website of the Belgian Ministry of Finance: <http://fondsdegarantie.belgium.be/fr>

\$54 per transaction in mid-December 2017.⁸⁶ Confirmation time for transaction has also witnessed a sharp rise: from an average of 20 minutes in August 2016, with a peak at 92 minutes on 16 August, it increased to an average of 123 minutes in August 2017, with a peak at 1524 minutes on August 27⁸⁷. Since then, however, the average fee has decreased significantly to less than \$1, and the average confirmation time is back to around 20 minutes, as of June 2018.

This return to normal has been attributed to various factors, such as a calming down of Bitcoin's latest speculative bubble of late 2017 (Torpey 2018), the adoption of a protocol upgrade called "Segwit" intended to mitigate the issue of block size (Sedgwick 2018) by packing more payments into less space on the blockchain (T. B. Lee 2018). However, this respite might be temporary. A future rise in the demand for Bitcoin, and a failure to timely adapt the Bitcoin protocol to this rise, may well lead to a new increase in transaction fees. This equation is further complicated by the algorithmic decrease of miners' reward, which is supposed to be offset by an increase in transaction fees (Nakamoto 2008, 4).

To sum up, as of today Bitcoin is still far from providing a secure and efficient means of payment. Admittedly, many actors are trying to address these issues in their attempts of reforming Bitcoin, which is at the heart of the still-ongoing block size debate. Bitcoin users are notably pinning their hopes on a proposed alternative payment network, called the Lightning network, which it is still under development. However, as we will see in the next section (4.3.), there are good reasons to entertain serious doubts on the capacity of the Bitcoin community to successfully tackle such technical challenges.

4.3. Can Bitcoin avoid formal governance?

As we have seen, for some, one of the main appeals of Bitcoin and other cryptocurrencies lies in their decentralised nature, which minimises the influence of coercive institutions (such as states and

⁸⁶ These statistics are based on our own computations, thanks to data collected on blockchain.com. See also Lee (2018).

⁸⁷ According to statistics from blockchain.info.

central banks) on monetary policy. Whatever the merits of the underlying libertarian argument, it is dubious that Bitcoin can dispense altogether with any formal governance or trust in some privileged actors.

Let us begin by noting that the original Bitcoin source code, originally drafted under the name of Satoshi Nakamoto, already contains a great number of substantial rules, which have an effect on the economics of Bitcoin: the decreasing supply of Bitcoins to be minted, the cap on the size of transaction blocks, etc.

Are these rules entirely set in stone, immutable? And if not, who has the power to alter them? This is the issue at the heart of Bitcoin governance. While Bitcoin has indeed no formal governance (there is no constitution or founding principles setting decision-making procedures), a set of practices have emerged, in the interplay of three categories of actors: core developers, miners, and users.

Taking over from Nakamoto's initial drafting of the protocol, the core development team enjoys a sort of moral authority over the community, which entrusts it for technical decisions. Core developers control the github repository (github.com/bitcoin/) and the domain bitcoincore.org. As with many open source development projects, Bitcoin follows an "autocratic-mechanistic" model, where anyone is free to contribute code, but a small group of co-opted developers (the core developers) can ultimately decide which changes get implemented in the software (De Filippi and Loveluck 2016; de Laat 2007).

However, it is important to note that the Bitcoin core development team cannot impose any modifications to the existing Bitcoin protocol without the consent of at least a substantial number of miners or users. Since Bitcoin is an open source software, any user could refuse to update its software and continue to use its older version, or propose an alternative change to shift the software development in a different direction, thereby creating a "fork" (an alternative branch of software development). In the case of Bitcoin, this can happen essentially through two mechanisms.

The first is called a “soft fork”, and consists in adding stricter rules determining which blocks or transactions are valid. A soft fork can be imposed on the existing network with the collaboration of miners with a mere majority of hash-power, which can enforce the new rules by rejecting blocks or transactions that do not conform to the change.

The second is called a “hard fork”, which touches on the fundamental characteristics of the protocol such as block structure or difficulty rules. As it is not backwards-compatible, a hard fork requires all full nodes to upgrade, or the blockchain could split between users using the new updated version and those using the old version.

Finally, in the Bitcoin development community, a standard form of building consensus around a proposed modification has emerged in the form of documents called Bitcoin Implementation Proposals (BIPs).

For a long time, these issues of governance were mostly ignored, due primarily to the idea that the developers’ role was purely technical and unlikely to cause deep ideological divergence (Lehdonvirta 2016).

In the last few years, however, the Bitcoin block size controversy has brought to light the importance of governance and what de Filippi and Loveluck (2016) call the “invisible politics” of Bitcoin. Indeed, a deep disagreement divides the Bitcoin community on the issue of the Bitcoin’s block size cap, a computational bottleneck that has increasingly worsened transaction fees and processing delays with Bitcoin’s gain in popularity. A first risk of split occurred in 2015 when some Bitcoin core developers proposed a fork called “Bitcoin XT”, aiming to increase its block size from 1 to 8 megabytes. After much debate, the Bitcoin community stayed loyal to the original Bitcoin protocol (billed “Bitcoin Core”), thus avoiding a definite split. But the attempts by the reformists pursued, and during 2016 and 2017 various forks proposal have been made, either by consortiums of miners or users. To succeed, these reform proposals generally require reaching a particular adoption rate of a qualified

majority of miners or users before a given date. While the process is still ongoing, and only a particular proposal (Segwit) did get adopted, this process remains complex and risky for the integrity of Bitcoin's blockchain. And indeed, it already generated its first major split: in August 2017, after months of Bitcoin scaling controversy, a group of users successfully hard-forked Bitcoin, as well as its whole transaction history, into a new cryptocurrency with a block size of 8Mb, named Bitcoin Cash. While the hard fork did not cause the rate of Bitcoin to crash, as some feared, it nonetheless showed that the risk of a Bitcoin schism was a very real possibility.

The risk of schisms can already prove problematic in the context of free and open source software, where forks pose the risk of scattering developers and users between incompatible projects, threatening their sustainability (Robles and Gonzáles-Barahona 2012). But it is even more problematic in the case of a currency, where network effects are crucial (Lehdonvirta 2016): while a given piece of software can be useful to a very small niche of users, a currency can only function as such if enough people are willing to exchange it or accept it as a means of payment. These schisms could significantly weaken Bitcoin by diminishing its attractiveness as a medium of exchange. Admittedly, until now the existence of a great number of alternative cryptocurrencies has apparently not curbed user enthusiasm for Bitcoin. However, there is a significant risk that the ongoing multiplication of Bitcoin clones (such as "Bitcoin Cash", "Bitcoin Gold", "Bitcoin Diamond"...) will constitute a factor of confusion for the broader public, thereby threatening its ability to be used as a mainstream medium of exchange.

Therefore, not only is Bitcoin not the self-governing, radically decentralised currency that some of its supporters would want it to be; Bitcoin's informal governance, plagued by the risk of schisms, also constitutes a significant threat to its sustainability as a currency.

A second significant challenge to the idea that cryptocurrencies can escape governance or central authorities is related to the particular way transaction security is achieved with Bitcoin. Bitcoin's "proof-of-work" security is crucially based on trusting a majority of

nodes in the system: in his 2008 paper, Nakamoto notes that proof-of-work security will be able to resist attackers “as long as honest nodes collectively control more CPU power than any cooperating group of attacker nodes” (Nakamoto 2008, 1). Perhaps initially this threshold of 50% seemed high enough and not easily reachable. However, in 2014, a consortium (or “pool”) of miners called GHash.io was able to concentrate 51% of the total computational power (Goodin 2014). Therefore, this pool of miners potentially had the ability to circumvent the security of Bitcoin’s payment system, and spend the same coins twice or reject competing miners’ transactions. That this concentration of power did not last long is due to the care of individual miners, who decided to pull from the pool out of a concern for Bitcoin’s integrity. Due to the criticism, the operators of GHash.io issued a statement and committed to “take all necessary precautions to prevent reaching 51% of all hashing power” (Hajdarbegovic 2014).

Therefore, as others have noted, Bitcoin’s central security feature “depends on the goodwill of a few people whose names nobody knows” (Bershidsky 2014). Can the Bitcoin community rely on the goodwill of individual miners and social responsibility of mining pools to avert an attack? Or should mining pools be prevented to acquire such a position? The latter option would likely involve some kind of anti-trust regulation, similar to conventional anti-trust laws. It would require, therefore, a sort of central competition authority to prevent collusion among miners.

Consequently, either the Bitcoin community retains its own libertarian form of “governance” by competition between forks, with risks for its governability, user base and security, or it recognises that some degree of formal central governance is inevitable. But that recognition leads to what Lehdonvirta bills as the “blockchain’s governance paradox”: if Bitcoin users address the problem of governance by trusting a central institution to make the rules, then why do they need a decentralised cryptocurrency anymore? (Lehdonvirta 2016).

In sum, the prevailing scepticism against governance among the Bitcoin community has made any change in its algorithmic regulation very difficult and long to achieve and prevents putting in place any structural protection against collusion by miners to breach its proof-of-work security. Bitcoin's informal governance model does not fare well compared to its promise to provide a reliable alternative to the allegedly flawed centralised banking system.

4.4. Does Bitcoin improve payment privacy?

Finally, one last perceived advantage of Bitcoin over conventional currencies is the better protection of payment privacy that it is supposed to provide, since its decentralised payment system makes it independent of banks or other payment intermediaries, and does not require disclosure of an account holder's identity. Admittedly, this is not a claim that more knowledgeable Bitcoin proponents are likely to make, as it has been at the centre of much criticism. However, it remains a recurrent preconception, at least in popular opinion and among some Bitcoin users, and therefore deserves a brief discussion here.

There are many good reasons why people might seek privacy in their transactions. They might wish to avoid mass data collection of their transaction history by private companies for targeted marketing, or they can be political opponents, fearing retribution from authoritarian regimes.

However, these privacy-protecting features are also what makes Bitcoin a particularly suitable tool for engaging in fraud, illegal business and tax evasion, which has been a recurrent concern for lawmakers (Gibbs 2018; Gruber 2013; Kollwe 2018; Marian 2013; Mersch 2018).

At the core of the Bitcoin protocol are two distinct features, which have opposite tendencies in terms of anonymity. On the one hand, Bitcoin's public ledger tends to make it more transparent, as all transactions are logged in a publicly accessible ledger. On the other hand, Bitcoin's peer-to-peer network tends to make it more anonymous (as it does not rely on the presence of financial intermediaries holding all the users' information).

As others have noted, Bitcoin only provides pseudo-anonymity, in that while a given transaction only lists the pseudo-anonymous Bitcoin address of the sender and receiver, details of all transactions are logged on the public ledger. Therefore, as Luu and Inwinkelried (2015, 10) put it, “[i]f a Bitcoin address could somehow be associated with a specific identity, the pseudo-anonymity would be penetrated”. Parties to a transaction could be traced back to the holder of an exchange account, by using identification techniques such as traffic analysis, and transaction graph analysis (Luu and Imwinkelried 2015, 24; Reid and Harrigan 2013, 17). State authorities could use such information to identify customers of cryptocurrency exchanges, provided such services are imposed “Know Your Customer” obligations under anti-money laundering regulations, as is the case in the US under the US Department of Treasury’s guidance on virtual currencies⁸⁸, as well as in the UE with the recent adoption of the 5th Anti-Money Laundering Directive⁸⁹.

Until Bitcoins become sufficiently widespread that an autonomous Bitcoin economy could be imaginable, the position of gatekeeper held by exchanges in the flow of Bitcoin appears to undercut the claim for Bitcoin to be any more privacy-protecting than conventional currency. Indeed, none is entirely disintermediated, they are just relying on different sorts of financial intermediaries.

A possible way to disrupt this possibility of identification would be to use mixing services (also called “laundry services”), which allows a user to exchange a given amount of tainted Bitcoins for a corresponding sum coming from a multiplicity of other users, and sent to a new Bitcoin address (Gruber 2013, 189–93; Marian 2013, 44). However, the issue with relying on third-party mixing services is that they could themselves be the target of court injunctions, or be

⁸⁸ US Department of Treasury, Application of FinCEN’s Regulations to Persons Administering, Exchanging, or Using Virtual Currencies, 18 March 2013.

⁸⁹ Directive 2018/843 of the European Parliament and of the Council amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, art. 1.

the subject of "Know Your Customer" obligations, as with Bitcoin exchanges.

Of course, users could possibly resort to exchanges or mixing services based in lax or lawless jurisdiction, in order to minimise the risk that their data be handed over to the authorities by such services. They would, however, face an important issue of trust, as those unregulated mixing services are also likely to be the less reliable, with little guarantee of seeing one's money back in case of fraud. This apparently happened to Meiklejohn, Pomarole et al. (2013) while studying these services, who note in their article that “[o]ne of these [mixing services], BitMix, simply stole our money.”

Thus it does not seem that Bitcoin could achieve a better level of transaction privacy than conventional currencies. Some even go so far as arguing that, far from making the job of law enforcement agencies harder, Bitcoin even generates new opportunities to track down illicit activities (Kaplanov 2012, 171). Companies like Chain analysis have developed software aimed at analysing the blockchain to identify Bitcoin users, which have been used by several public agencies, such as the US Internal Revenue Service, the FBI or Europol (Orcutt 2017).

This provides a good reason for state authorities not to ban Bitcoin altogether, to avoid the risk of promoting alternative cryptocurrencies that better protects transaction privacy without resorting to third parties. However, a case could be made that cryptocurrencies embedding protocol-level privacy protection (such as the proposed Zerocash which would integrate a mixing service in the blockchain itself⁹⁰) should be banned, as they could be used as gateway currencies for transacting in Bitcoin, therefore evading scrutiny by state authorities. Whether such a repressive approach is at all feasible remains an open question.

More fundamentally, the decentralised (although not entirely disintermediated) nature of cryptocurrencies like Bitcoin has another important drawback for user privacy: without a bank or financial

⁹⁰ See Miers, Garman, Green and Rubin (2013).

institution, users are solely responsible for the privacy of their transaction. And the average - not particularly tech-savvy - consumer will be more likely to commit some privacy oversight in its Bitcoin transactions. Therefore, paradoxically, the many flaws in Bitcoin's privacy protection mean that unsophisticated users might enjoy a lesser level of transaction privacy by using such a pseudo-anonymous cryptocurrency than by relying on traditional financial intermediaries.

5. Conclusion

Now that the latest Bitcoin "gold rush" appears to have – momentarily – receded, the central question for potential Bitcoin users remains: are there good reasons to adopt Bitcoin, other than investing in a speculative asset?

This chapter highlighted four arguments justifying the attractiveness of Bitcoin. To recall, the first lies in Bitcoin's practical promise of constituting a stable currency, immune to inflation, in the spirit of what neoliberal authors like Hayek or Friedman have argued for. The second is that Bitcoin could help reducing state coercion by dispensing with the need for monetary policy, in line with the libertarian ideal of a minimal state. The third argument is that Bitcoin would constitute a more efficient and safe system of payment. And the fourth is that Bitcoin supposedly better protects transaction privacy than the conventional banking system.

As we saw, it is dubious that Bitcoin, as it is now, can deliver on these promises.

First, Bitcoin's financial record detract from any claim of being a stable currency: its highly volatile value makes it risky for merchants to accept, and inconvenient for consumers to use. This, alone, makes Bitcoin unfit to be used as an alternative currency for the time being.

Second, Bitcoin's promise to provide an efficient store of value or means of payment is not supported by evidence from its use. On the one hand, securely storing and trading one's Bitcoins requires a substantial level of knowledge from its users. On the other hand, consumer confidence in Bitcoin's capacity to provide efficient payment facilities lies on shaky foundations: increased Bitcoin's

success could lead to higher transaction fees and longer confirmation times, which would make it impractical for consumers.

Third, the promise of making Bitcoin a currency independent from central authorities has been largely a double-edged sword. Even if the Bitcoin protocol is an achievement of a currency run by a radically decentralised network, it is highly unlikely that it can act as a reliable and governable currency without some formal governance mechanisms, and without resorting to some financial intermediaries. As exemplified by the ongoing scaling debate, the Bitcoin community's unwillingness to seriously address the issue of Bitcoin governance undermines its resilience to economic and technical challenges. Bitcoin's current informal governance mechanism generates recurrent risks for its sustainability and integrity, as it creates uncertainty for users as to the value of their holdings as well as to which "fork" of the Bitcoin blockchain constitutes the "real" Bitcoin. Moreover, without formal governance mechanisms, Bitcoin ultimately relies on trusting the goodwill of its users (the very thing it purported to avoid) to avert potential miner collusion to form a 51% attack. The emergence of a multitude of new intermediaries seems to indicate that even with cryptocurrencies, banking and financial intermediaries may still have some usefulness as a layer of protection for consumers after all.

Fourth, we pointed out that Bitcoin's pseudo-anonymous payment system provided a very limited layer of protection for the privacy of user transactions. As with security, Bitcoin puts most of the burden of privacy protection on its users' shoulders, which creates a disparity in user privacy along the same lines as the digital divide in technology knowledge. Therefore, paradoxically, for the average user Bitcoin might provide a lesser level of transaction privacy than traditional financial intermediaries. And even if Bitcoin did provide a better level of transaction privacy than conventional currencies, it would generate a range of further questions as to the possibility of law enforcement against crime and tax evasion.

Therefore, contrary to what its proponents might hope for, Bitcoin is far from fulfilling its promises to be a stable, efficient,

radically decentralised and privacy-protecting currency. The reason for its relative popularity and substantial valuation lies thus either by unrealistic expectations from its users as to its capacity to act as a functioning currency or by the prospects of rewards allowed by its status of high-risk speculative asset.

This, in turn, does not mean that cryptocurrencies are a useless development altogether. Their advent has brought about a great number of worthy innovations, with many useful applications. The distributed ledger, the blockchain, is certainly an interesting technological innovation, which might find useful applications in many areas. Some have hailed blockchain's potential in fostering decentralised organization, by reducing the transaction costs of organizing cooperation among a great number of individuals (De Filippi and Wright 2018, 136). Even central and private banks have started looking into using blockchain technology, mainly to improve on their infrastructure for areas such as clearing and settlement or trade finance (Arnold 2016a, 2016b) but also to create new monetary policy instruments.⁹¹ While these projects are clearly inspired by the technological innovations behind Bitcoin, they are likely to significantly diverge from Bitcoin's main ideological commitments (Bordo and Levin 2017). Studying more deeply the potentials of these so-called "Central Bank Digital Currencies" are at the heart of a nascent literature. Further research nevertheless needs to be done in this domain.⁹²

Blockchain technology could also possibly be used in countries where banks cannot be trusted, or where the monetary system is failing, as some have argued (Varoufakis 2014). In general, blockchain could be used to reduce costs (although on the condition of adopting alternative mechanisms to reduce its environmental impact)⁹³ and make payment settlements easier. However, with

⁹¹ Many central banks are studying the possibility of introducing central bank digital currencies. See for instance Barrdear and Kumhof (2016), Bordo and Levin (2017), Dyson and Hodgson (2016), Raskin and Yermack (2016).

⁹² See Fontan, Larue and Sandberg (2019) for an attempt in that direction.

⁹³ Indeed, although Bitcoin's proof-of-work security algorithm has been rightly criticised for its high environmental impact (Deetman 2016), alternative security algorithm that

blockchain applications as with Bitcoin, it is important to take such claims with a grain of salt and go beyond the overly enthusiastic rhetoric to assess the actual merits of the technology.

If its proponents want Bitcoin to become more than a speculative asset, they will probably have to adopt a more explicit and formalised governance to be able to seriously tackle not only mere technical challenges, but also the underlying political choices behind them as to the cryptocurrency's future. The question remains, however, whether Bitcoin can be reformed so as to become a workable currency, while still retaining some of the attractiveness that its enthusiast saw in its initial promises. As of today, Bitcoin seems far from being the future of money.

are less energy intensive have been proposed (such as “proof-of-stake” algorithm, which would rely less on solving difficult computational problems, by replacing “computational power” with “financial stake” as a consensus mechanism)

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CETTE THÈSE, CONÇUE À LOUVAIN-LA-NEUVE, A
ÉTÉ IMPRIMÉE À BRUXELLES EN AOÛT 2019 PAR
CLICK CLICK GRAPHICS EN 25 EXEMPLAIRES.

LOUIS LARUE

MAKING SENSE OF ALTERNATIVE CURRENCIES

The main goal of this thesis is to provide a clear basis for the analysis of alternative currencies, such as Bitcoin, LETS, Local currencies, the WIR or Carbon currencies. It attempts to determine whether alternative currencies might constitute just and workable alternatives, either in the form of small-scale experiments or in the form of more radical reforms.

The first chapter proposes a new way to classify currencies. The second examines the case in favour of monetary plurality. The third analyses the claims in favour of restricting the use of money locally, within a community, or to certain goods. The fourth studies the link between money and the market. Finally, a post-scriptum focuses on Bitcoin and cryptocurrencies.

This thesis highlights that these currencies are drivers of several potential conflicts. Their widespread use might conflict with the adequate management of monetary policy, with social justice, and with liberal values. These conflicts are potential, for they would come into existence only if alternative currencies increased in scope. However, there is no reason to disregard potential conflicts when the case in their favour relies mostly on their potential benefits.