Imagining Money

Jason G. Allen

INTRODUCTION

John Clarke presents the theme of this volume by asking why we might speak of "imagined economies". It is, he answers, "to interrupt the apparent ubiquity of economies", to provide a moment for "a pause for thought". In this chapter, I explore the role that imagination plays in the creation and maintenance of a money system. Money is important to the existence and functioning of an economy.[1] Money, too, seems ubiquitous and naturally-occurring, so I want to pause and consider why it is that we might have money and what exactly it is doing. Different objects have served as money, or tokens of money, in different societies. Today, the main form of money (from an economic perspective, if not from a

1 Granted, non-monetary economies exist, and it is a worthwhile project to imagine economies that function without money (as we know it, or at all). And granted, money plays a lesser role in the lived experience of numerous communities, especially in the Global South, where traditional webs of social obligation still operate in parallel to the money-based economy. And granted further, important categories of economic activity subsist even in money-based economies (for example in the domestic sphere). But money is central to the type of (financial capitalist) economy with which many chapters in this collection are concerned.

strictly legal one) is digital representations of credit-debt relations between a person and a commercial bank. In other times and places, money has taken the form of, or been represented by, scrips of paper, metal discs, shells, and various consumable and non-consumable commodities. But what is *money itself*, and where does it come from?

In this chapter, I draw on the concepts of social ontology and make some reflections on the role of law and legal systems in constituting money. Money, like so much of our social world, is successful because it appears natural and self-evident; but it is fundamentally mind-dependent, which is to say that it only exists because a community of people think it does. In a meaningful sense, it is "imagined". This provides the opportunity to bring to the volume another tradition of thinking about "real fictions" in the analytical idiom typical of English and Scandinavian legal philosophy, and to explore the role of "imagination" in the constitution of a money system.

MONEY IN MACROECONOMICS

The first observation to be made is that, if we want to get to the bottom of money, it is not (only) to economics as a discipline that we should turn. It is perhaps startling for non-economists that the dominant school of macroeconomic thought has no place for money as such. "Dynamic stochastic general equilibrium" models posit that, given certain assumptions, there exists a set of prices for every commodity in an economy in general equilibrium (Rogers). In effect, the better an economy works, the less conceptual need it has of money. Thus, Frank Hahn observed in 1983:

> The most serious challenge that the existence of money poses to the theorist is this: the best developed model of the economy cannot find room for it. The best developed model is, of course, the Arrow-Debreu version of Walrasian general equilibrium. A world in which all contingent future contracts are possible neither needs nor wants intrinsically worthless money. A first, and

> to a fastidious theorist difficult, task is to find an alternative construction without thereby sacrificing the clarity and logical coherence that are such outstanding features of Arrow-Debreu. (Hahn 1)[2]

Since the Global Financial Crisis ("GFC") of 2008, more heterodox economists have stressed the importance of making conceptual room for the existence of money in macroeconomic modelling (for example, Goodhart et al.). In large part, this requires integration of the *financial system* into macroeconomic models, reflecting the role that financial intermediaries, particularly banks, play in money-creation. The best accounts of "modern money" explain that banks do not just accept deposits of pre-existing, real resources and then lend them to borrowers; banks create money *ex nihilo*, as it were, by lending (Jakab and Kumhof). The traditional arrangement forms a kind of "finance franchise" between (private) licensed commercial banks and the (public) central bank, in which the former play a systemic role (Hockett and Omarova). Currently, non-bank financial intermediaries (especially payments services providers) are, in turn, encroaching on that traditional role, making accurate theory more important than ever (Omarova).

Meanwhile, classical economists since the 1970s have been concerned to build macroeconomic models on stable "micro" foundations, including actor preferences, responses regulation, technology, and resource constraints (Lucas). But their micro-foundations have not always been very accurate depictions of the complex social reality of the empirical economy (Lawson, *Economics* 21; Hodge 182). And a distinctly legal perspective is needed here; as Katharina Pistor has argued, law and finance are locked in a dynamic relationship in which new forms of contractual behaviour challenge existing legal rules but seek, in turn, legal vindication; this means that the legal structure of finance is critical to explaining the behaviour of market participants (Pistor). It is essential,

2 For a critique of Hahn's efforts to find an alternative construction, see Hyman Minsky.

then, not only to include money in macroeconomic models of the economy, but also to ensure that we have the best account of the nature of money itself.

Both these points underline the need for a complex ontology of money, based in complex social practices. And they both suggest a role for law and therefore legal theory in explaining what money is and how it is made.

There are various ways in which one could construct a taxonomy of monetary theories: one reads of metallist *versus* non-metallist theories, realist *versus* nominalist, commodity *versus* credit, orthodox *versus* heterodox, endogenous *versus* exogenous, currency *versus* banking, so on and so forth. There are important correlations between these various dichotomies, and many of them cut across each other, as well.[3] All imply a set of ontological and metaphysical commitments. Theorists often speak at cross purposes across these dichotomies, not least because they keep those metaphysical and ontological commitments tacit rather than articulating them. It is beyond my ambition to explore the taxonomy of monetary theories here. I wish to use just one way of contrasting approaches to the concept of money – what I will call *market theories of money* and *legal theories of money*.[4] In the former, "money" is created through the transactional activities of market participants, typically said to evolve from primitive barter through the (spontaneous, or at least market-driven) emergence of one commodity (typically a precious metal) as a medium of exchange. In the latter, money is posited as the creature of legal convention, typically said to derive from the interventions of an organised political authority.

3 Joseph Schumpeter's summa divisio was between commodity and credit theories (Schumpeter 649).

4 Actually, the law plays a constitutive role in both, as it is in virtue of the legal system that we have the prerequisites of a market – i.e. (private) property rights that can be transferred by contract. Without these two legal constructions, we would have nothing like a "market" in the modern sense at all.

In their starker forms, these approaches are mutually exclusive. Indeed, the nature of money was one of the focal points of the *Methodenstreit* between the Austrian School and the German Historical School. Carl Menger, for the former, argued for a commodity-based market theory of money. According to this view, money has to be understood as the "spontaneous outcome, the unpremeditated resultant, of particular, individual efforts of the members of a society, who have little by little worked their way to a discrimination of the different degrees of saleableness in commodities" (Menger 250). Georg Knapp, for the latter, presented the "State Theory of Money", arguing that "[m]oney is a creature of law" and that it was a mistake to equate "money" with metal coins; "money, whether of metal or paper, is only a special case of a means of payment in general", and this means of payment arises in a society when the state stipulates that taxes will be accepted in a certain token, giving that token value for individuals transacting *inter se* (Knapp 2).

Both these approaches trace right back to the beginning of the Western tradition of theorising about money – Aristotle here emphasising money as a creature of convention, and there emphasising the metallic nature of money in the ancient world.[5] Both have obvious merit. The Austrian School usefully points to the role of individual choices in the creation of a money system, and, despite an element of "just so" theorising about the vagaries of barter, presents a credible attempt to understand the metaphysics of money in the Aristotelian tradition (Smith). The German Historical School view, on the other hand, seems better supported by the archaeological and historical evidence on the evolution of money and barter (Ingham 47, 211), affords a greater conceptual role for networks of credit and debt that historically operated alongside coin-based money systems, and does a better job of explaining the forms of

5 Aristotle, Nichomachean Ethics 156, "this is why we call it νόμισμα, because its value is derived, not from nature but from law [νόμος] and can be altered or abolished at will." Cf Aristotle, Politics 42.

money that have predominated for the past century (quite possibly much longer) (Desan 25).

Knapp's approach has become the foundation of what I regard as the more credible schools of monetary theory in modern times. The crux of Knapp's view of money appears in his assertion that even full-bodied coins are "chartal", i.e. that their nominal face value provides the "money" element, not the metal. Without special agreement between the parties, a debt could not be discharged by the delivery of a quantum of metal; where such an agreement is general, indeed universal, the "moneyness" of the coin is a matter of law and custom, not its physical properties (Olivecrona 47-48). Thus Knapp put the metaphysics of the complex institutional landscape which underpins money's existence – complex credit and debt relationships involving not only individuals but also the "state" – into the centre of theoretical efforts.[6] In my view, this provides a more credible answer to the question Menger himself posed, i.e. why economic agents are so willing to exchange their goods for "little metal disks apparently useless as such, or for documents representing [them]" (Menger 239).[7]

However, Knapp's view perhaps puts too little emphasis on the role of private transactional behaviour in creating money systems. And it focusses perhaps too much on the state, and on law as a creature of the state, giving too little attention to private payment communities and their customary norms (Hodgson 331). Further, Knapp's account itself exhausts itself precisely where it ought to explain the nature of the mone-

6 H.S. Ellis credited Knapp with bringing the metaphysical questions concerning money to the foreground in a manner "unparalleled in the history of economics" (Ellis vii).

7 Georg Simmel rightly noted: "[M]etallic money is also a promise to pay and ... it differs from the cheque only with respect to the size of the group which vouches for its being accepted" (174-79). In a similar vein, J.M. Keynes observed that the Indian Rupee "being a token coin, [was] virtually a note printed on silver" (26).

tary unit; while he succeeds in explaining the physical media of payment, he fails, because of his historical method of reference back to "autometallism", to explain the nominalist unit of value itself (the dollar, euro, or pound sterling) as an object in its own right (Olivecrona 99). In systems such as our own in which there is no reserve of commodities to which the monetary unit refers, we must be concerned with this purely nominalistic unit first and foremost. As Karl Olivecrona observed in 1953, individuals and private (commercial) banks can issue more "IOUs" than they can pay; when a central bank, on the other hand, is not compelled to honour its debts (e.g. by selling gold on foreign exchanges), its solvency is perfect: "Paradoxically enough the claims on the central bank are always good because they can never be honoured. Payment does not come into question, since there are no media of payment available" (Olivecrona 63). This creates a debt situation of a particular kind, which we are only now beginning properly to theorise (e.g. McLeay et al.). So-called "Modern Monetary Theory" has been moving inwards from the periphery of monetary theory, and has recently been receiving attention even from central bankers (e.g. Weber).

I will leave this discussion here, however, for it is to the theoretical presuppositions of both major schools that I wish to turn. In effect, I wish to argue that they both require something in the nature of a "real fiction". Karl Elster (an acolyte of Knapp) argued in a 1920 essay on the "purchasing power" and "validity" of money:

> [Money] is not a commodity, even where it has surely arisen from a commodity. Money arises – arises from a commodity – by way of an *individual-psychological process*. A good does not become money through being ever more greatly valued, it arises rather because the reason for its valuation changes fundamentally; a good does not become money in virtue of being the most valued commodity, but because it ceases to be a commodity. Die and become! Money is created in the same instant in which the good ends its conceptual existence. (247; emphasis added)

This seems to grasp something fundamental about the nature of money – that a thing, whatever it is, assumes a monetary status *in virtue of being treated as such by individuals within a community*. Commodity theories of money, especially, distract us with the notion that the money-token has "intrinsic worth", being made of a precious metal. Elster makes clear that as soon as a piece of gold is used as money (rather than as a necklace or as bullion, or as an electrical conductor for that matter) its *natural properties* fade into the conceptual background. Likewise, if I take a gold coin and turn it into an ornament, or use it as a paperweight, or to bodge a blown fuse in my car, I wrench it from the monetary domain back into the domain of commodities – I stop treating it as if it embodied an abstract, intangible monetary unit, and start using it for its physical properties (shininess, weight, conductivity).

Something similar can be said of the liabilities that circulate as money in a modern monetary system. They only work because they pass around as currency – because they provide a standard unit of measuring value. If we were to fix quanta of "book money" into place as bi-lateral obligations between two certain, identified parties, their monetary status would vanish. This is reflected in the English law of financial instruments; originally, things like debt writings could not circulate as a token of payment because they were legal obligations that could only be transferred through a difficult process called "novation" in which the parties agreed that a new party could enter the relationship to replace the old one. It was only over time that the financial instruments we know today as "negotiable" were recognised to pass "in currency" and therefore to play a role that assimilated coin (e.g. Holdsworth 997). Again, modern developments including "cryptocurrencies" are challenging settled notions, for example in the question whether a bitcoin is capable of being owned and whether ownership can pass with change of "possession".[8]

Christine Desan rightly argues that this brings the *monetary unit* into the foreground of our theoretical focus:

8 The problem is that possession, as traditionally understood, is impossible in the case of an intangible object like a bitcoin (Allen).

> Money is neither an object – the lump of silver that the philosopher imagined, nor an abstraction – the convention that those observing paper money assume. Money is, instead, a *method of representing and moving resources within a group*: it is a way of referencing or entailing material value that *creates a unit to measure other resources* over time, pay off obligations finally, and transfer value immediately. (Desan 21; emphasis added)

As her examples show, we can use various things to achieve this method, i.e. to represent the monetary unit. And much of the scholarship on the nature of money is focussed squarely on the money token, not this monetary unit. This focus has, in turn, informed the background against which much of our law has evolved, and explains the common inability to look past the brute object that serves as a token of the monetary unit (see Appleby 43).

Shifting our focus helps to reveal that money (whatever it is, and whatever is used for it) has a social ontology. My intuition is that, as Tony Lawson has argued, engagement with the social ontology of money may in fact reconcile some of the points of disagreement between the great schools of monetary theory, showing them to be theories about different *historical instances* of money rather than about the *ontological nature* of money itself (Lawson, "Social Positioning" 961-62). In my view, an enquiry into the latter would, however, appear to be an enquiry into the nature of an object – albeit a quasi-abstract or "imaginary" one that is defined by its function as an economic coordination mechanism (Smit et al. 327). But this is a point on which reasonable minds differ – just as it served as a major clashpoint in the *Methodenstreit*, there is a live debate within the emerging field of social ontology on precisely this question: Is "money" a *token* of something, or the something for which there is a token.[9]

9 I thank Tony Lawson for this formulation in his comments on the draft.

REAL FICTIONS

The editors have discussed Günther Teubner's notion of the "*Realfiktion*". Another branch of theory that deals with the reality of apparently fictional objects is social ontology, a branch of analytical metaphysics concerned with the existence of socially constructed artefacts. Social ontologists have indeed thought and written much on money, and their efforts can help us, in turn, to understand the role of "imagination" in the creation of a money-based economy. As Uskali Mäki observes, in a discussion of the methodology of economics, social ontology has much to say about that discipline's foundations:

> Economics deals with preferences and expectations, strategies and interactions, demand and supply, trust and fairness, laws and conventions, agents and principals, and markets and governments. One can try to construe these items without invoking anything mental or social, but yet it seems obvious that whatever those terms are taken to refer to *does not exist mind-independently* and, therefore, are not in the same category with electrons, cells, continents and galaxies. (7; emphasis added)

Of the many stories that could be told of money's development over time, one story that has particular resonance today is that of *dematerialisation*. It is important not to stress the linearity of this trend, because much of the history of money has over-emphasised the role of coin. The amount of coin circulating in medieval European economies, for example, has been demonstrated to be much smaller than the economies themselves – the rest ran on complex webs of credit and debt (Gleeson ch. 3, "Money and Credit", for a discussion and references). Tally debts are at least 2,000 years older than the oldest coins, and account-based money systems have been more common throughout history ancient and modern than the textbooks generally recognise (Wray 45). So a straightforward story of "metal to paper to digital money" would seriously mischaracterise the actual course of development.

But there is something to be said for exploring the theme of dematerialisation over the past century, as we have seen the concept and the practice of money loose itself from precious metal, and then from cash (in the form of banknotes and non-precious metal coins) as digital information systems were used to record and transfer value. Olivecrona observed, somewhat presciently, in 1957:

> Theoretically, all payments could be carried out without the use of cash. Book money could, indeed, be made the sole medium of payment. Everybody would then receive his income in the form of drafts on a bank and pay for his expenses in the same way. But this would be so cumbersome as to be hardly feasible. Cash money is needed besides book money for two reasons: (i) to facilitate small payments, and (ii) to make possible instant payment by unknown persons and other persons who are not entrusted with credit. (58)

It should be apparent that both of Olivecrona's impediments have been removed by advances in information technology since he wrote. Ironically, today cash constitutes less than 2% of Olivecrona's native economy, and Sweden is leading the way in cashless payment systems including proposals for an "e-Krona" issued by the Sverige Riksbank ("E-krona").

Counterintuitively, dematerialisation helps us to see what I perceive to be the essential properties of money more clearly. I will demonstrate how this is the case by presenting a brief overview of some of the efforts made by social ontologists to describe the ontology of money.

John Searle's 1995 book presents the basic formula for his account of the construction of social reality: an institutional fact (e.g. a marriage, a president, or a dollar) is created when a community takes a brute fact (i.e. an act, object, or event) to "count as" an institutional fact in a certain

context.[10] An institutional fact is essentially a bundle of deontic powers (i.e. rights, duties, prohibitions, etc.) that give agents desire-independent reasons for action. For example, when a wooden figurine becomes a "rook", it starts doing new things within the context of a game of chess, such as "castling" or putting a "king" into the status of "check". Searle describes the logico-linguistic operation involved in transforming a figurine into a rook as "X counts as Y in C" where X is the brute object (wooden figurine), Y is the institutional object composed of deontic powers (the rook with its capacities to move and attack) and C is the context (a game of chess).

For Searle, there are two types of social fact (Brey 70; Searle, *The Construction*; Searle, *Making the Social*). Both relate to the brute objects and events in different ways. First are ordinary social facts, such as that this four-legged object is a "chair" or that this sharp object is a "knife". Social facts come into existence when a community of people impose a function on an object that is inherently capable of performing the function – it has properties such as stability or sharpness. Second are institutional facts. These come into existence when a community imposes a function on an object that is not inherently capable to perform that function in virtue of its physical properties alone. Unlike being a chair, for example, which involves supporting a human in a sitting position, being a "throne" does not depend on a physical property of an object as such (although thrones are often decorated as a reflection of their ritual status). The essential properties of "throne-ness" exist only in human minds – i.e. in shared intentional states and perceptions (Johansson 74).

In Searle's scheme, money is an institutional fact par excellence. Searle's formula is, predictably, the subject of a number of disputes among social ontologists. First, there is a long-standing dispute with Tony Lawson, which is also of interest as a showcase for the differences

10 E.g. that I am married, that we have a contract, that tomorrow is Thursday, that the Soviet Union no longer exists. The basic distinction between institutional facts and brute facts is explained in G.E.M. Anscome (69) (generally see Searle, The Construction).

of approach between the Cambridge and Berkeley schools of social ontology. Where Searle seems to stipulate that the X term of a status function like "money" must not be capable of performing the relevant function in virtue of its physical properties alone, Lawson insists that in order to be "positioned" as money within a "totality", the thing positioned must possess properties that make it capable of being money:

> Social positioning is the term for the process whereby, through general acceptance throughout a community, human individuals, things or other phenomena become incorporated as components of these emergent totalities. In all cases, social positioning involves the generalised acceptance of the following three elements in regards to any item that is thereby positioned: 1) the allocation of an agreed status, 2) its practical placement as a component of a totality, and 3) the harnessing of certain of its capacities already possessed to serve as one or more system functions of the totality. ("Social Positioning" 964)

For Lawson, there is (i) a position, (ii) the occupant of a position (*qua* brute fact), (iii) the *positioned* occupant, and (iv) the *token* of the positioned occupant. For Lawson, the essential definition of money relates to (iii), whatever (ii) might be. Lawson might argue that the money-token, in order to be positioned as (occupy the social position of) "money", must be durable, unique, and non-forgeable ("Social Positioning" 968). Although I would confess Searleian tendencies, I think Lawson must be right that the thing positioned as money must have some basic properties. Beans make better counters than bananas because they are more durable. Gold makes better counters than beans because it is scarcer. Cigarettes make better counters than water because they are more readily individualised. Taking this point, I will leave the Searle/Lawson debate for now, because I think that the water example provides a good impulse to the next point, which relates to the *quasi-abstract mathematical units* that appear in any money system. Suffice it to say that for both Lawson and Searle, despite their methodological differences, the estab-

lishment of a given social position, and the allocation of people or objects to it, is ultimately a matter of community acceptance. This keeps the story of money squarely in the realm of mind-dependent phenomena.

The debate within social ontology is highly relevant to the changes we are now witnessing with payments technology, too, although it is fair to say that a great number of questions remain to be answered. Following Searle's 1995 statement of his basic formula, Barry Smith observed that some institutional facts, such as electronic money, do not have a physical X term at all. In place of metal and paper, electronic book-money (for example) rests on digital information structures that are poorly captured by the basic formula. Smith asserted that these were in fact free-standing Y terms, i.e. institutional facts (bundles of deontic powers) not resting on a brute fact. Searle responded by introducing a variation to his theory; he accepted the existence of Y terms for which there is no X term, and said that the logico-linguistic operation involved is simply a declaration that "Y exists in C" (Barry and Searle 285). We need not get bogged down in the finer details of the debate, but Ingvar Johansson has rightly observed that no one has yet fully teased out the differences between the basic case of institutional facts anchored in a physical object and (apparently) free-standing institutional facts.

Johansson extends a classical analogy between money and chess, which offers some final impulses. A basic game of chess is played on a board with physical pieces. The transformation from a wooden figurine to a rook is explained by Searle's basic formula: "X (a wooden figure) counts as Y (a rook) in the context C (the game of chess)". This formula expresses the imposition of a function on a brute object: When we accept that a figurine counts as a rook, it starts doing things (in the context of a game of chess) that a wooden figurine could not. The status moves the natural object into a new domain of social reality. Johansson calls this basic case real chess.

Chess players often record their games, however, and for this purpose translate the chess pieces and board into an algebraic system of notation. Our rook is no longer a figurine but the letter "R"; the playspace is no longer a board but a column of notations on a set of Cartesian

coordinates (e.g. R moves a1 to d1). In other words, the objects and events that constitute a game of chess are represented in documentary form. We can thus review particular games of chess as discrete, documented historical facts. Searle's basic formula no longer works in this context, however, as there is no X term. Johansson suggests that we instead use the formula "Z (our notation for rook) counts in C (a game of chess) as a representation of the basic formula (X (wooden figurine) counts as Y (a rook))". In this case we have an algebraic representation of a real game of chess. But the act of recording real chess using such notation opens up a further possibility, too. Imagine that we live in different cities. We send each other messages such as "R moves a1 to d1". We have now started playing a new form of chess, which Johansson calls account chess.

The interesting thing is that the objects and events that make up a game of account chess are particulars, rather than universals, but are neither straightforward spatio-temporal nor Platonic objects. Account chess is, according to Johansson, a fictional object. Intuitively, whatever else is said about the true ontological status of fictional objects, "we often speak and act as if there were such enduring, identifiable, and re-identifiable fictional particulars" (78-79). But even social ontologists have failed to present a persuasive framework for describing fictional social objects. To fill the gap, Johansson presents a scheme of fictional institutional facts, representational institutional facts, and primitive institutional facts (95).

Johansson then applies his scheme to the evolution of money. A traditional bank book that records movements of coins and banknotes is, like an algebraic documentation of a game of real chess, a representation of something else. But, like the algebraic chess notation, it bears the possibility of a new kind of money that exists only in information:

> Instead of material money transactions (compare: material chess moves) we now often have transactions by means of mere accounts of money (compare: moves in account chess). The latter kind of transaction is made in terms of a very special kind of fictional object, *account money*. What since long is

> called "deposit money" and "checking account money" can be regarded as a species of account money. Such money can exist by means of both book-entries and computer databases. (Johansson 86)

This resonates, in broad terms at least, with a view recently put forward by J.P. Smit, Filip Buekens, and Stan du Plessis. A money system, they argue, is a set of positions on a relative ratio scale (342). The moving balance of this ratio is complex, with variables at the supply end as well as constant shifting in the position of money-users. The thing to remember is that coins and banknotes are only "money" because they are records of these positions. The token solves a practical problem of record-keeping, but it does not solve the basic problem of providing an object or tool of economic coordination. The existence of a monetary unit facilitates economic interactions, for example as captured by the classical functions of money as a unit of account, store of value, medium of exchange, and standard of deferred payment. The object of coordination is the monetary unit itself. Those units might be counted with the aid of metal disc, chits of paper, or digital records without any difference at the level of logical structure. That is, I think, the case with Johansson's "account money".

CONCLUSION

Whatever else money is, and whatever other elements are involved in its ontology, there is a substantial element of psychological disposition, which I think is aptly caught by the term "imagination". That is not to say that other psychological dispositions, such as trust or motivation, are not important to the creation and effective maintenance of a monetary system. But imagination is key; my trust, for example, is trust in the fact that certain objects represent positions on an imagined set of relations, denominated in an ideal unit. Perhaps the "essence" or "spirit" of money is a fiction. Money is a collective delusion, as it were, that is extremely helpful and effective in structuring certain types of social interactions,

including economic transactions. In theorising this fiction, I hope that I have provided some points of interest at which social ontology, law, and economics might interact and cross-pollinate in future research.

I have not delved into the questions of politics and political economy that naturally arise around money. But I would like to conclude with three brief observations. First, once we recognise money as a creature of our own imagination, that owes a large part of its existence to that domain of social reality we call "law" – rather than as a naturally-existing entity – it becomes difficult to deny a constitutional aspect to any monetary system. This appears most strongly in state theories of money, which identify money most closely with the organised political community. One may reject the notion that "money" is only possible in a modern, Westphalian state, and point to other forms of political association with autonomous payment communities. But that does not negate the essential connection between politics, law, and money. This is an ontological argument about money in general, rather than a policy argument about the best kind of money system. Money is not a neutral fact of the universe to which human societies must conform, like the number of hours in the day or molecules of H_2O in a litre of water (Fox et al. 17). Money is a creature of social convention that serves certain purposes.

Secondly, this being the case, in my view money should function conformably with the constitutional values and aspirations of the relevant society. Where a money system ceases to do so, or systemically creates outcomes unconformable with those values, there is a *prima facie* case to change it. This impulse is implicit in the "cryptocurrency" movement, which is seeking radically to reform the way that money is made. It seeks expressly to replace the need for both commercial banks and central banks – to circumvent the "finance franchise" entirely (Nakamoto). Given the timing of Bitcoin's launch, it is likely that its initiators wanted to provide a means to avoid outcomes such as central bank manipulation of the money supply through unconventional monetary operations like "quantitative easing" in the wake of the GFC. Or, put differently, to provide a means to undermine central bank monetary

policy. Indeed, others perceive central bank control over the supply of money as an essential tool to promote monetary policy.

Thirdly, technologies, including the "blockchain" technology launched together with Bitcoin in 2009, offer new tools and affordances for both private and public actors to create money. For example, Rohan Grey has recently argued that central banks should embrace the opportunity to issue their own liabilities directly to the public on a much broader scale than ever before, in digital form as "central bank digital currency" ("CBDC"). While one of the chief risks associated with CBDC is a flight from commercial banks, Grey argues that this could catalyse a healthy re-alignment within the monetary system, in which commercial banks lose their monopoly on payments processing and focus on credit analysis and collateral evaluation (170-171). A number of central banks have explored options for CBDC, and some even have trials in progress (Gnan and Mascriando). The proposal in mid-2019 by Facebook and a consortium to launch "Libra", a digital currency backed by reserves of sovereign fiat currencies, may accelerate the time-line for these developments ("An Introduction to Libra"; Jones).

There has probably never been a more exciting time in the long history of money. It is difficult to predict what the long-term impacts of the last decade's developments will be, but it is safe to say that the monetary system will change fundamentally in the next ten years. Perhaps the crucial virtue in anyone thinking about the future of money at the present time would be imagination – the courage to take a moment, to reject the inevitability of legacy conventions, and to imagine what might be possible in the future.

REFERENCES

Allen, Jason G. "Negotiability in Digital Environments." *Butterworths Journal of International Banking and Finance Law*, vol. 34, no. 7, 2019, pp. 459-63.

"An Introduction to Libra." *Libra*, 18 July 2019, libra.org/en-US/wp-content/uploads/sites/23/2019/06/LibraWhitePaper_en_US.pdf.

Anscome, Gertrude E. M. "On Brute Facts." *Analysis*, vol.18, no. 3, 1958, pp. 69-72.

Appleby, Joyce O. "Locke, Liberalism, and the Natural Law of Money." *Past and Present,* vol. 71, 1976, pp. 43-69.

Aristotle. *Politics.* Translated by Benjamin Jowett, Clarendon Press, 1920.

—. *Nichomachean Ethics*. Translated by F. H. Peters, 5th ed., Kegan Paul, Trench, Truebner & Co, 1893.

Brey, Philip. "The Social Ontology of Virtual Objects." *American Journal of Economics and Sociology*, vol. 62, no. 1, 2003, pp. 269-82.

Desan, Christine. *Making Money*. Oxford University Press, 2014.

"E-krona." *Sveriges Riksbank,* 2019, www.riksbank.se/en-gb/payments--cash/e-krona/.

Ellis, Howard S. *German Monetary Theory 1905-1933*. Harvard University Press, 1934.

Elster, Karl. "'Kaufkraft' und 'Geltung' des Geldes." *Jahrbücher für Nationalökonomie und Statistik*, vol. 115, no. 1, 1920, pp. 243-49.

Fox, David, François R. Velde, and Wolfgang Ernst. "Monetary History Between Law and Economics." *Money in the Western Legal Tradition: Middle Ages to Bretton Woods*, edited by David Fox and Wolfgang Ernst, Oxford University Press, 2016, pp. 3-17.

Gleeson, Simon. *The Legal Concept of Money*. Oxford University Press, 2019.

Gnan, Ernest, and Donato Masciandro, editors. *Do We Need Central Bank Digital Currency? Economics, Technology and Institutions*. SUERF Conference Proceedings, 2018/2, www.suerf.org/docx/s_cf0d02ec99e61a64137b8a2c3b03e030_7025_suerf.pdf.

Goodhart, Charles A. E., Nikolas Romanidis, Dimitrios P. Tsomocos, and Martin Shubik. "Macro-Modelling, Default and Money." Saïd Business School WP, June 2016.

Grey, Rohan. "Banking in a Digital Fiat Currency Regime." *Regulating Blockchain: Techno-Social and Legal Challenges*, edited by Philipp Hacker, Ioannis Lianos, Georgios Dimitropoulos, and Stefan Eich, Oxford University Press, 2019.

Hahn, Frank. *Money and Inflation.* MIT Press, 1983.

Hockett, Robert, and Saule T. Omarova. "The Finance Franchise." *Cornell Law Review*, vol. 102, 2017, pp. 1143-218.

Hodge, Duncan. "Economics, Realism and Reality: A Comparison of Mäki and Lawson." *Cambridge Journal of Economics*, vol. 32, no. 2, 2008, pp. 163-202.

Hodgson, Geoffrey M. "Observations on the Legal Theory of Finance." *Journal of Comparative Economics,* vol. 41, no. 2, 2013, pp. 331-37.

Holdsworth, William S. "The History of the Treatment of 'Choses' in Action by the Common Law." *Harvard Law Review*, vol. 33, no. 8, 1920, pp. 997-1030.

Ingham, Geoffrey. *The Nature of Money.* Polity, 2004.

Jakab, Zoltan, and Michael Kumhof. "Banks are not intermediaries of loanable funds – and why this matters." Bank of England, Working Paper No. 529, 29 May 2015.

Johansson, Ingvar. "Money and Fictions." *Kapten Nemos Kolumbarium*, edited by Felix Larsson, Göteborg University, 2005, pp. 73-101.

Jones, Claire. "Central bank plans to create digital currencies receive backing." *Financial Times*, 30 June 2019, www.ft.com/content/428a0b20-99b0-11e9-9573-ee5cbb98ed36.

Keynes, John M. *The Collected Writings of John Maynard Keynes, Volume 1: Indian Currency and Finance*. Edited by Elizabeth Johnson and Donald Moggridge, Cambridge University Press, 1978.

Knapp, Georg. *The State Theory of Money*. Macmillan, 1924.

Lawson, Tony. *Economics and Reality*. Routledge, 1997.

—. "Social Positioning and the Nature of Money." *Cambridge Journal of Economics*, vol. 40, no. 4, 2016, pp. 961-96.

Lucas, Robert. "Econometric Policy Evaluation: A Critique." *The Philips Curve and Labour Markets*, edited by Karl Brunner and Alan Meltzer. *Carnegie-Rochester Conference Series on Public Policy*, vol 1, no. 1, 1976, pp. 19-46.

Mäki, Uskali. "Scientific realism as a challenge to economics (and vice versa)." *Journal of Economic Methodology*, vol. 18, no. 1, 2011, pp. 1-12.

McLeay, Michael, Amar Radia, and Ryland Thomas. "Money Creation in the Modern Economy." *Quarterly Bulletin*, vol. 14, Q1, 2014, pp. 14-27.

Menger, Carl. "On the Origin of Money." *The Economic Journal*, vol. 2, no. 6, 1892, pp. 239-55.

Minsky, Hyman. "Review: Frank Hahn's 'Money and Inflation'." *Journal of Post-Keynesian Economics*, vol. 6, no. 3, 1984, pp. 449-58.

Nakamoto, Satoshi. "Bitcoin: A Peer-to-Peer Electronic Cash System." *Bitcoin*, 2008,bitcoin.org/en/bitcoin-paper.

Olivecrona, Karl. *The Problem of the Monetary Unit*. Macmillan, 1957.

Omarova, Saule T. "New Tech v New Deal: Fintech as a Systemic Phenomenon." *Yale Journal on Regulation*, vol. 36, no. 2, 2019, pp. 735-93.

Pistor, Katharina. "A Legal Theory of Finance." *Journal of Comparative Economics*, vol. 41, no. 2, 2013, pp. 315-30.

Rogers, Colin. "The Conceptual Flaw in Microeconomic Foundations of Dynamic Stochastic General Equilibrium Models." *Review of Political Economy*, vol. 30, no. 4, 2018, pp. 72-83.

Schumpeter, Joseph. "Das Sozialprodukt und die Rechenpfennige." *Archiv für Sozialwissenschaft und Sozialpolitik*, vol. 44, 1917, pp. 627-715.

Searle, John. *Making the Social World.* Oxford University Press, 2010.

—. *The Construction of Social Reality.* Free Press, 1995.

Simmel, Georg. *The Philosophy of Money*. Translated by Tom Bottomore and David Frisby, Routledge, 1978.

Smit, J. P., Filip Buekins and Stan du Plessis. “Cigarettes, Dollars and Bitcoins - An Essay on the Ontology of Money.” *Journal of Institutional Economics*, vol. 12, no. 2, 2016, pp. 327-47.

Smith, Barry. “Aristotle, Menger, Mises: An Essay in the Metaphysics of Economics.” *History of Political Economic Annual Supplement*, vol. 22, 1990, pp. 263-88.

—, and John Searle. “The Construction of Social Reality: An Exchange.” *John Searle’s Ideas About Social Reality: Extensions, Criticisms, and Reconstructions,* edited by David Koepsell and Laurence Moss, Blackwell, 2003, pp. 285-310.

Weber, Beat. “What is ‘Modern Money Theory’ (MMT)?” *SUERF Policy Note*, no. 67, April 2019.

Wray, L. Randall. “Modern Money.” *What is Money?*, by John Smithin, Routledge, 2000, pp. 42-66.