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# Old Utopias, New Tax Havens

## The Politics of Bitcoin in Historical Perspective

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## I. Introduction

Cryptocurrencies are frequently framed as future-oriented, technological innovations that decentralize money, thereby liberating it from centralized governance and the political tentacles of the state. As I argue in this chapter, almost every single aspect of this picture is either straightforwardly false or highly misleading. Instead of associating cryptocurrencies with a futuristic technology that lifts money above politics, I take a contrarian view by placing the political vision behind cryptocurrencies in the historical context of the global politics of money after the collapse of the 'Bretton Woods' system.[1] This has a number of implications. Most importantly, instead of accepting the self-presentation of cryptocurrencies as a technological innovation that removes money from politics, recovering their broader historical and political context allows us to see cryptocurrencies as part of a struggle over the political status of money in an age of financialization. After all, cryptocurrency enthusiasts themselves often frame their own ambition to decentralize the issuance of money as a major *political* attraction. Instead of a hub-and-spokes model of a central bank that supports a cluster of commercial banks, cryptocurrency supporters hail the advent of a decentralized monetary system in which issuance is externally fixed and payments are settled through the public ledger of a blockchain.

In this chapter I follow up on this vision by interrogating its underlying political theory. By shedding light on the political visions that tend to undergird cryptocurrencies we can critically examine the frequent gap between public vision, implicit politics, and actual implementation. As I will argue, the attempt to remove money from political control is itself a supremely political act that raises profound questions of legitimacy. Instead of taking this vision at face value, I propose that cryptocurrencies are suspended between two contradictory goals: a radical political attempt to depoliticize the appearance of money, and a seductive use of cryptocurrencies as speculative assets beyond the regulatory grasp of monetary and fiscal authorities. Ironically, while the preferential tax and regulatory treatment of cryptocurrencies hinges on their self-professed status as currencies, the price swings of recent years precisely undermine this claim to being currencies. To highlight this contradiction and place it into a concrete historical context, I look specifically at the example of Bitcoin, still the most popular and valuable cryptocurrency.

Caught between these contradictory aspirations as both currencies and speculative assets, cryptocurrencies are at best prone to become victims of their own success. Not only are regulators likely to step in to contain financial fraud, regulate systemic risks, and tax speculative gains, but established financial actors have already begun to integrate cryptocurrencies into their business models. After all, blockchain algorithms are made and as such they reflect the intentions of their authors. There is nothing inherent in blockchain technology that rules

[1] See Primavera De Filippi and Aaron Wright, *Blockchain and the Law: The Rule of Code* (Harvard University Press 2018).

out centralization, regulatory oversight, or democratic governance. Nor is there anything in cryptocurrencies that would prevent them from becoming appendices to the existing global shadow banking system. Unsurprisingly, both central banks and commercial banks have already developed blockchain protocols that combine a decentralized ledger with the possibility of centralized oversight and control. In either case, whatever scenario will emerge does not depend on technological inevitabilities but on political acquiescence and ultimately questions of power.

While cryptocurrencies are a recent development, political attempts to remove money from political control are a central, perhaps constitutive, feature of liberal modernity. One could therefore tell an even longer story involving the contested political status of money in modernity, as I have done elsewhere. In this chapter, however, I place cryptocurrencies in the narrower historical context of the ad hoc global politics of money after the collapse of the Bretton Woods system in the 1970s. In particular, I distinguish between three periods: first, an initial phase of the politicization of money (1973–1979); followed by the emergence of a global politics of disinflation that came to be hailed as the 'Great Moderation' (1980–2008); and finally, our current period in the wake of the Financial Crisis of 2008, which revealed the fragility of many of the presuppositions of the 'Great Moderation' and returned us to the unresolved questions of the 1970s (2008–present).

To grasp the peculiar politics underlying most currently existing cryptocurrencies it is thus important to see their rise as a post-Financial Crisis restaging of the contentious political demands for monetary depoliticization and privatization during the late 1970s. The insistence on technological novelty associated with cryptocurrencies can easily obscure the ways in which their underlying visions resemble those of earlier arguments, in particular Friedrich August Hayek's argument for the 'denationalization' of money.[2] At the time, this utopian vision of the privatization of money contended with Third World demands for the politicization and democratization of global money, which were subsequently largely displaced. The ad hoc system that emerged instead did not do away with the sovereign prerogative to issue money—indeed, as the Financial Crisis revealed, in many ways it further strengthened it—but it self-consciously depoliticized the appearance of money and encouraged the development of a global monetary system based on the principle of capital mobility. It was only in the wake of the 2008 Financial Crisis that conflicting demands for either the depoliticization or the democratization of money resurfaced. This was the concrete context for the emergence of cryptocurrencies that promised to remove money from both the state and banks. To understand the origins of this promise, it is necessary to return to the 1970s.

## II. Two Utopias

On 11 December 1974, Friedrich Hayek stepped up to the lectern at the Stockholm School of Economics to deliver his obligatory prize lecture for the Nobel Memorial Prize in Economic Sciences he had been awarded the previous night. As Hayek announced in his opening lines, the chief practical problem across the Western world was the spectre of inflation.[3] This had made his choice of topic easy, indeed almost inevitable. The problem of inflation, Hayek exhorted, threatened Western civilization at its very foundation. 'Economists', he explained,

[2] Friedrich August Hayek, *Denationalisation of Money* (London: The Institute of Economic Affairs 1976) 70. Enlarged version reprinted as Friedrich August Hayek, 'The Denationalization of Money: An Analysis of the Theory and Praxis of Concurrent Currencies [1978]' in *Good Money, Part II. The Collected Works of F. A. Hayek*, edited by Stephen Kresge (Volume 6, University of Chicago Press 1999), 128–229.

[3] Friedrich August Hayek, 'The Pretence of Knowledge. Lecture to the Memory of Alfred Nobel, December 11, 1974' in *New Studies in Philosophy, Politics, Economics and the History of Ideas* (University of Chicago Press and Routledge & Kegan Paul 1978), 23. For an account of Hayek's visit to Sweden, see Bruce Caldwell, 'Hayek's Nobel' (2016) 21 *Advances in Austrian Economics*, 23.

'are at this moment called upon to say how to extricate the free world from the serious threat of accelerating inflation'. But they were failing. As a profession, 'we have made a mess of things'. Blaming the inflation on epistemological hubris, Hayek launched a fundamental challenge to Keynesian national welfarism and placed stable money at the heart of his liberalism. Money, Hayek had already explained in *The Road to Serfdom* (1944), 'is one of the greatest instruments of freedom ever invented by man'.[4]

Spurred on by the inflation of the 1970s and utilizing the prestige of the Nobel Prize, Hayek returned to his monetary writings from the interwar period and updated them with startlingly radicalized conclusions. As he declared in 1975, in a lecture at a London-based free market think tank, 'the cause of waves of unemployment is not "capitalism" but governments denying enterprise the right to produce good money'.[5] Economic crisis and inflation were a result of 'the exclusion of the most important regulator of the market mechanism, money, from itself being regulated by the market process'.[6] The lecture, soon expanded into a pamphlet and published in 1976 as *The Denationalization of Money*, entered wide circulation on the back of Hayek's Nobel fame. Given the inflation shock of the 1970s, the time had now come to eliminate the government monopoly of money and fully privatize its issuance. No government with direct control over money could ever be trusted not to abuse it. While Hayek blamed the inflationary malaise on Keynes's influence specifically, his critique now extended to the political control over money more generally. Money, Hayek insisted, was simply too dangerous an instrument to be left to the state and the 'fortuitous expediency' of politicians or indeed economists. 'Our only hope for a stable money', he exclaimed, 'is indeed now to find a way to protect money from politics.'[7]

Over the subsequent years, as inflation soared once more to more than 10% in the United States and more than 20% in Britain, Hayek dedicated himself to spreading the gospel. As he explained in 1979, the deprivation of governments of their monopolistic control of money was the only 'possible escape from the fate which threatens us'.[8] Left unchecked, inflation will 'lead to the destruction of our civilization'.[9] His call for the privatization of the monetary order dovetailed in this regard with his other constitutional recommendations, including a proposal to raise the voting age for a second legislative chamber to forty-five.[10] As Hayek stressed, 'my radical proposal concerning money will probably be practicable only as part of a much more far-reaching change in our political institutions, but an essential part of such a reform which will be recognized as necessary before long'.[11] Both parts were needed 'if we are to escape the nightmare of increasingly totalitarian powers'.[12]

Hayek had not been the sole recipient of the Nobel Prize in Economics in 1974. In the heated political climate of the early 1970s, the Swedish Academy of Sciences instead jointly awarded the 1974 Prize to Hayek and the Swedish economist Gunnar Myrdal for their 'pioneering work in the theory of money' as well as their 'penetrating analysis' of the interdependence of economic, social, and institutional phenomena.[13] Two radically divergent

[4] Friedrich August Hayek, 'The Road to Serfdom' in *The Collected Works of F. A. Hayek*, edited by Bruce Caldwell (Volume 2, University of Chicago Press 2007), 125. In *The Constitution of Liberty* (1960), Hayek similarly stressed the importance of 'the monetary framework' for any classically liberal position: Friedrich August Hayek, 'The Constitution of Liberty [1960]' in *The Collected Works of F. A. Hayek*, edited by Bruce Caldwell and Ronald Hamowy (Volume 17, University of Chicago Press 2011), 451–65.

[5] Hayek, ' The Denationalization of Money' (n 2), 128–229. [6] ibid., 202.

[7] Friedrich August Hayek, 'Choice in Currency' in *The Collected Works of F. A. Hayek*, edited by Stephen Kresge (Volume 6, University of Chicago Press 1999), 120, 125.

[8] Friedrich August Hayek, *Law, Legislation and Liberty: The Political Order of a Free People* (Volume 3, University of Chicago Press 1979), xiii–xiv.

[9] Hayek, 'The Denationalization of Money' (n 2), 186.

[10] Hayek, *Law, Legislation and Liberty* (n 8), 113.

[11] Hayek, 'The Denationalization of Money' (n 2), 186.

[12] Friedrich Hayek, 'Consolidated Preface' in *Law, Legislation and Liberty. A New Statement of the Liberal Principles of Justice and Political Economy* (Volumes 1–3, Routledge & Kegan Paul 1982), xx.

[13] The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 1974, https://www.nobelprize.org/prizes/economic-sciences/1974/press-release.

visions of money were on offer. When giving his own Nobel lecture, Myrdal agreed with Hayek about the constraints of national welfarism and the pressing global crisis.[14] However, instead of veering towards a vision of competing private currencies in a world of liberalized global trade, Myrdal proposed an internationalization of the post-war welfare state.[15] Decolonization posed a profound challenge to the unequal welfarist settlement of the post-war world. As Myrdal reminded his audience in Stockholm, 'the underdeveloped countries are therefore now proclaiming the necessity of not only increased aid but fundamental changes of international economic relations. By their majority votes they can in the United Nations carry resolutions like the Declaration on the Establishment of a New International Economic Order ("NIEO")'.[16] In aligning himself with the demands of the NIEO, which had successfully passed its UN resolution in May 1974, Myrdal insisted that 'what the poor masses need is not a little money [but] fundamental changes in the conditions under which they are living and working'. The present calamitous situation in the world—and here Myrdal was thinking as much of famines as of inflation—posed a fundamental moral problem that required a comprehensive political reform of the international economic and monetary system.

In 1980, as Hayek was on the lecture circuit promoting his vision of a world of only private monies, a coalition more to Myrdal's liking was gathering in the Tanzanian city of Arusha. Instigated by the President of Tanzania, Julius Nyerere, and the Jamaican Prime Minister Michael Manley, the South–North Conference on 'The International Monetary System and the New International Order' met in the vast Arusha International Conference Center from 30 June to 3 July 1980 to discuss the future of the international monetary system.[17] While the NIEO had burst onto the international scene in the immediate wake of the collapse of the Bretton Woods system, it had in many ways still been an outgrowth of the anti-colonial trade struggles of the 1950s and 1960s.[18] Though the NIEO had made references to the need for monetary reform, these were fleeting. By the end of the 1970s, however, the monetary dimension had fully asserted itself internationally. As the experience of peacetime inflation traumatized Europe and North America, the Global South was hit even harder and in the case of Jamaica and Tanzania had just received a first taste of the 'structural adjustment' policies championed by the International Monetary Fund ('IMF').

Within sight of Mount Kilimanjaro, the Arusha conference was in this context meant both as an expression of solidarity with Jamaica and Tanzania as well as a call for a UN conference on international monetary reform.[19] Confronted with the technocratic imperatives of the IMF, the participants pointed instead to the inescapable politics of money. 'Money is power', declared the signatories of the resulting Arusha Initiative. 'Those who wield power control money. Those who manage and control money, wield power. An international monetary system is both a function and an instrument of prevailing power structures.'[20] As the

[14] Gunnar Myrdal, 'The Equality Issue in World Development' (March 1975) Lecture to the memory of Alfred Nobel.

[15] Adom Getachew, *Worldmaking after Empire: The Rise and Fall of Self-Determination* (Princeton University Press 2019); see also Gunnar Myrdal, *Beyond the Welfare State: Economic Planning and its International Implications* (Yale University Press 1960).

[16] Myrdal, 'The Equality Issue in World Development' (n 14). For the NIEO resolution, see United Nations General Assembly, 'Declaration on the Establishment of a New International Economic Order' (1 May 1974) Resolution A/RES/S-6/3201.

[17] The proceedings were published as Proceedings, 'The Arusha Initiative. A Call for a United Nations Conference on International Money and Finance", (1980) 2 *Development Dialogue (Uppsala)* (henceforth 'The Arusha Initiative'). The Swedish Dag Hammarskjöld Foundation had partially helped to fund the gathering.

[18] Getachew (n 15), Ch. 5; as well as the special NIEO issue of *Humanity: An International Journal of Human Rights, Humanitarianism and Development* (Spring 2015) 6(1). In his contribution, Bret Benjamin describes the NIEO as the 'bookend to Bandung', 33–46.

[19] Vijay Prashad, *The Darker Nations: A People's History of the Third World* (The New Press 2007), 191. For the Fund's perspective on the Arusha Initiative, see Jim Boughton, *Silent Revolution: The International Monetary Fund 1979–1989* (International Monetary Fund 2001), 588–601.

[20] The Arusha Initiative (n 17), 12.

Arusha Statement pointed out, while the stabilizing elements of the Bretton Woods order had collapsed in the course of the 1970s, the IMF and the World Bank remained standing and continued to reflect the power balances of an international order in which the majority of Third World countries had not yet existed.[21] While the UN General Assembly had since been enlarged, the IMF continued to resemble a hierarchical world more akin to the Security Council. Although the Third World counted close to one hundred countries that included more than two-thirds of the world's population, its cumulative voting share at the IMF amounted to no more than 35% and thus less than the 40% of the five leading industrial powers alone.

Even worse, in the course of the 1970s, as the United States abandoned the embedded multilateralism of the post-war period for unilateralism, the IMF had become even more beholden to the G7 than ever before. As the Third World countries had declared the previous year when meeting in Jamaica in October 1979, 'the IMF, acting on behalf of the major industrialized capitalist countries, has assumed a growing role as a financial and economic policeman in Third World countries'.[22] In addition to the previous political imbalances of the Bretton Woods system, during the 1970s a new tendency had 'emerged for the Fund [IMF] to exercise a major influence on the process of internal decision-making in a number of the Third World countries'.[23] The Bretton Woods system, imperfect as it had been, had imploded into an ad-hoc non-system that invited an evasion of responsibilities and heightened opportunism. The dollar's dual role as both the domestic currency of the United States as well as the international reserve (and shadow banking) currency of choice had already marked the post-war period. The collapse of Bretton Woods had not ended this 'exorbitant privilege' but informalized it and lifted most obligations previously associated with it.[24] Given the growing destabilizing effect of largely unregulated flows of so-called 'Eurodollars' under conditions of floating exchange rates and increasing capital mobility, the dollar's mark on the rest of the world was deepened in unpredictable ways.[25]

The Arusha Initiative's emphasis on the burden of hierarchical imbalances imposed by this informal international monetary system was in this light both an insistence on money's political nature and an attempt to counter claims to neutral technical expertise asserted by the Fund's 'money doctors'. The IMF, the Arusha signatories explained, 'claims to have a "scientific" basis for these policies and to be an objective and neutral institution charged with the "technical" function of "helping" countries to overcome their financial difficulties'.[26] However, all available evidence, including the Fund's own internal documentation (which Nyerere leaked to the international press), pointed the other way. The IMF was neither purely scientific, nor neutral. Instead, it systematically applied double standards to otherwise similar situations and was deeply ideological in the way it framed underdevelopment as a lack of private markets. In reducing the international politics of money to seemingly scientific theories of underdevelopment and domestic structural reforms, the IMF was a depoliticization machine.[27] Its denial of the political nature of money was the capstone of these efforts. As the Arusha Statement declared perceptively, precisely in denying the politics of money the IMF 'has proved to be a basically political institution'.[28]

[21] ibid., 12.

[22] As cited in Prashad (n 19), 66: 'The Terra Nova Statement on the International Monetary System and the Third World' (1980) 1 *Development Dialogue*, 29.

[23] ibid., (22), 2.

[24] Barry Eichengreen, *Exorbitant Privilege. The Rise and Fall of the Dollar* (Oxford University Press 2011); Benjamin Cohen, *Currency Power: Understanding Monetary Rivalry* (Princeton University Press 2015).

[25] Harold James, *Making the European Monetary Union* (Harvard University Press 2012), 9–10 and 146–80; Jeffry Frieden, *Banking on the World* (Harper and Row 1987), Ch. 4.

[26] The Arusha Initiative (n 17), 12–13.

[27] James Ferguson, *The Anti-Politics Machine: 'Development', Depoliticization, and Bureaucratic Power in Lesotho* (University of Minnesota Press 1994).

[28] The Arusha Initiative (n 17), 14.

The monetary disorder of the 1970s was neither inevitable nor accidental. The 'present monetary non-system,' the Arusha Initiative explained, was 'man-made and can consequently be redressed by political decisiveness and action'.[29] What was needed was not technical fixes and domestic programmes to adjust to the new logic of discipline but a political reform of the international monetary constitution. The abrogation of political agency in international monetary matters was in this regard an embarrassment to human rationality and ingenuity. The only viable response against it was for money to 'be demystified and exposed to public debate and scrutiny'.[30] The necessary political decisions would have to be taken 'by governments acting in a collective and democratic manner'.[31] Unlike the redistributive commodity confrontation of the NIEO, it was furthermore not clear that international monetary reform was a zero-sum game. After all, South and North both had an interest in creating a truly stable international monetary system that would be better equipped to address the issue of inflation. The Arusha Declaration ended in this spirit by urging 'the governments of East and West to pursue together their common interest in a universal and democratic monetary system'.[32]

Both Hayek and the Arusha Initiative detected political forces behind the ad-hoc international monetary order of the 1970s. However, their respective assessments of the politics of money could hardly have diverged more strongly. Where Hayek saw states abusing their monetary monopoly to create inflation, the signatories in Arusha saw developed countries bending the post-Bretton Woods monetary order to their interest. Hayek's call for the removal of money from politics thus found its exact counterpart in the Arusha Initiative's attempt to raise an awareness of money's political purpose.

In the end, both Hayek's vision of competing private currencies and the Arusha vision of a post-colonial international monetary constitution were disappointed. Nonetheless, it was Hayek who had the last laugh. What won the day was a continuation of the ad-hoc system of informal American global money and floating fiat currencies but now operated by the semi-depoliticized, technocratic rule of experts in formally independent central banks. Few observers during the 1970s would have expected this development. States were nominally left in control of currencies but abrogated many of their political responsibilities.[33] This was not Hayek's vision of pure private money. However, it approximated his goal since it depoliticized economic relations, ensured price stability, and enforced economic discipline. Furthermore, the new system was complemented by an unprecedented level of private credit money in the form of new financial instruments that circled the globe, often beyond the direct reach of governments. In particular the establishment of the free movement of capital in the course of the 1980s was essential to this.[34] Moreover, if the new politics of disinflation self-consciously imposed constraints on collective bargaining and real wage growth, it simultaneously opened the taps of private consumer credit. None of this was lost on Hayek and when he was asked to address Visa credit cards executives in Athens in September 1981, he used the opportunity to remind them of the significance of private credit acting as a unit of account beyond the state.[35]

The international monetary order that arose out of the 1970s consequently took the Arusha Statement's insistence on money's political nature seriously but derived from it Hayek's objectives of discipline and price stability. The age of floating national fiat currencies unexpectedly produced a new politics of monetary depoliticization. To Hayek's surprise, the lesson of the 1970s thus illustrated the way in which a self-reflexive modernity could end up

[29] ibid., 15–16 and 21–22. [30] ibid., 21. [31] ibid., 11. [32] ibid., 21–22.

[33] Stefan Eich and Adam Tooze, 'The Great Inflation' in *Vorgeschichte der Gegenwart*, edited by Anselm Doering-Manteuffel, Lutz Raphael, and Thomas Schlemmer (Vandenhoeck and Ruprecht 2015) 173–96.

[34] Rawi Abdelal, *Capital Rules. The Construction of Global Finance* (Harvard University Press 2007).

[35] Friedrich Hayek, 'The Future Unit of Value'(14 September 1981), Visa International Annual Conference, Papers of Friedrich A. Hayek, Hoover Institute, Stanford University, Box 131, Folder 5.

defining itself in a foreclosure of its own agency. For better or worse, democracies turned out to be remarkably able and willing to bind themselves. If the collapse of Bretton Woods had repoliticized money, one expression of this new politics of money consisted in its own disavowal.[36] Where inflation and the politics of money had dominated the immediate post-Bretton Woods years, with the successful assertion of a newly depoliticized appearance of money during the 1980s, the politics of money—and with it Myrdal's call for a welfare world and Third World demands for international monetary reform—faded from view.

## III. The Financial Crisis and the Birth of Bitcoin

Until the Financial Crisis of 2008, the contours of the depoliticized anti-inflationary system that had unexpectedly emerged out of the late 1970s were rarely questioned. Low inflation rates, enforced by independent central banks, were instead hailed as having paved the way to the 'Goldilocks economy' of the Great Moderation.[37] But as the world's central banks and treasuries had to step into the breach in 2008 to undertake sprawling rescue actions to prevent an imminent collapse of the global financial system, two myths rapidly unravelled. Most immediately, the Crisis revealed the widely held belief of money as neutral as an illusion. While the appearance of money had been naturalized during the Great Moderation as a depoliticized tool of scarcity, it was now revealed once more as fickle and malleable. The state, seemingly obsolete before the Crisis, had to backstop the financial system by socializing its losses. In the European context, where the vision of depoliticized money had paved the way for deeper integration in the form of a currency union without matching political mechanisms of adjustment, the Eurocrisis revealed the apolitical design of the Euro and policy-makers' refusal to politically restructure debts as a tragic flaw that pitted nations against each other instead of bringing them closer together.[38]

But if money turned out to be more political than many had come to assume, the Crisis also rapidly undermined any presumption that money was still straightforwardly privy to the sovereignty of states and accountable to politics. Currency had in large parts been replaced by private global money. As central banks sought to exercise control over the money supply and the credit system, they saw themselves confronted with a vast and arcane global financial structure that was at least in part beyond their control. Since the late 1970s, economic globalization and the international integration of financial markets have severely constrained formal state competencies in monetary and financial matters and led, as scholars of International Political Economy have traced, to a 'deterritorialization' of money.[39] Where the literature of the 1970s had offered state-centric analyses of power,[40] the same scholars have since sketched market-centric accounts of globalization and financialization.[41] If the crisis thus revealed money to be inescapably political, politics found itself at the same time short-changed in its ability to govern the new money.

It had, of course, been states themselves that had tied themselves to the mast of monetary depoliticization in the hope of deflecting responsibility from the painful disinflationary

[36] David Grewal, *Network Power: The Social Dynamics of Globalization* (Yale University Press 2008), 105.

[37] Ben Bernanke, 'The Great Moderation' (20 February 2004) Meeting of the Eastern Economic Association.

[38] For a reading of the Eurocrisis that blames not structural causes but bad crisis management and, in particular, the unwillingness to restructure debt, see Martin Sandbu, *Europe's Orphan: The Future of the Euro and the Politics of Debt* (Princeton University Press 2015).

[39] Claus Zimmerman, 'The Concept of Monetary Sovereignty Revisited' (2013) *European Journal of International Law*, 799–800; Benjamin Cohen, 'The New Geography of Money' in *Global Monetary Governance* (Routledge 2008), 207–24.

[40] Susan Strange, *Sterling and British Policy* (Oxford University Press 1971); Benjamin Cohen, *The Future of Sterling as an International Currency* (Macmillan 1971).

[41] Susan Strange, *Mad Money: When Markets Outgrow Governments* (University of Michigan Press 1998); Benjamin Cohen, *The Geography of Money* (Cornell University Press 1998).

economic choices of the late 1970s and early 1980s. But in the 2008 Financial Crisis, as states sought to loosen these bonds in order to regain their agency, they found themselves as an Odysseus whose crew now refused to untie him. In the Eurozone, the realization of money's political dimension was similarly accompanied by states coming to the painful realization that the tools of monetary policy were no longer available to them when they needed them most, while the European Central Bank proved inept in fully living up to its new responsibilities.

Despite these constraints, central banks acted swiftly and enacted historically unprecedented rescue measures that ranged from bailing out financial institutions to extending vast international swap lines to favoured central banks around the world.[42] This new assertion of political agency left central banks in a perilous position. As Adam Tooze has pointed out, it was always a telling contradiction of neoliberalism that its emphasis on discipline was coupled to the elevation of a select group of central bankers to captains of global prosperity.[43] Faced with financial meltdown, the depoliticized rule-based model of neoliberal governance that had promised to disentangle politics and economics was revealed as hinging on the ability of experts with largely undefined mandates to directly intervene in the financial system. As a flipside of their increased importance, central banks now found themselves in the political limelight without being quite able to fess up to their own agency. They had become central planners that dare not speak their name.[44] The newly visible agency of central banks uncomfortably raised the possibility of political choices in a system that was supposedly without alternatives. The recognition that central bankers could create money at will with the click of a proverbial button provoked starry-eyed amazement from those toiling under the weight of austerity during the Great Recession.

With the myth of apolitical money eroded, the divergent visions of the 1970s have made a concealed comeback. Reminded of the ability of central banks to create money at will, since the Financial Crisis there have been once more a number of proposals that aspire to complete the Hayekian call for denationalized and privatized monies removed from the control of the state. Though it undoubtedly shaped the anti-inflationary turn that won the day, Hayek's vision of competing private currencies ultimately failed to gain traction. With the depoliticizing successes of the Great Moderation and the rise of global credit money beyond governments' direct control, it rapidly lost its urgency. But the idea never quite died. It remained a secret fantasy of those with libertarian leanings. Even among central bankers, whom Hayek had after all castigated as doing the devil's work, it was nurtured. In 1996, Alan Greenspan, the then Chairman of the Federal Reserve and just reappointed by President Clinton, marvelled at how the technological innovations under way could bring back the possibility of private money. 'We could envisage proposals in the near future', he explained, 'for issuers of electronic payment obligations, such as stored-value cards or 'digital cash'.'[45] In the midst of the Financial Crisis, with the traditional banking system under threat and governments' contested role in monetary matters once more on full display, the possibility suddenly became concrete.[46] Hayek's vision resurfaced electronically.

On 1 November 2008, mere weeks after the collapse of Lehman Brothers, a pseudonymous Satoshi Nakamoto posted a paper on an online messaging board that contained a technical proposal for an electronic crypto-currency dubbed 'Bitcoin'. In the code of the first Bitcoin block, Nakamoto included a short message.

[42] Adam Tooze, *Crashed. How a Decade of Financial Crises Changed the World* (Viking 2018), 166–219.

[43] Adam Tooze, 'Just Another Panic' (2016) 97 *New Left Review*, 129; Tooze, *Crashed* (n 38), 1–22, 141–201.

[44] J. Mason, 'The Fed Doesn't Work for You' (2016) https://www.jacobinmag.com/2016/01/federal-reserve-interest-rate-increase-janet-yellen-inflation-unemployment/.

[45] As cited by Nathaniel Popper, *Digital Gold. The Untold Story of Bitcoin* (Harper Collins 2015).

[46] Benjamin Cohen, 'Electronic Money: New Day or False Dawn?' (2001) 8(2) *Review of International Political Economy*, 221.

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Chancellor on brink of second bailout for banks

Meant to serve as a time stamp, the message also embodied Bitcoin's ethos and motivation. From the start, its mysterious founder (or those operating behind his pseudonym) and its fervent enthusiasts envisioned the new electronic currency as a digital analogue to gold; a universal money beyond human control. Where Hayek had sought to take money away from the state, Bitcoin now aimed to remove it both from the state and from banks. This was money for an age in which trust had collapsed. What made Bitcoin unique, Nakamoto explained, was that it was 'a system for electronic transactions without relying on trust … The real problem with conventional currency is all the trust that is required to make it work.'[47]

Behind this dark vision of the fragility of human trust and reason, one can easily detect Hayek's mirage of superior private monies administered by markets. However, where Hayek could innocently think of banks as ideal tools for the privatization of money, from Nakamoto's perspective at the height of the Financial Crisis banks were just as tainted as governments. After all, banks had failed to function as intended, instead bringing the financial system within inches of fatal collapse. Even worse, as the waves of bailout proved, it was not entirely obvious that banks issuing credit were indeed fully private institutions. When it mattered, they either received public support from central banks or, in many cases, were straightforwardly nationalized. As Nakamoto argued, a denationalized, privatized currency for the twenty-first century would have to exist outside the banking system. Despite such crucial differences, the Hayekian aspiration to denationalize money is never far from Bitcoin's surface. Nor is the nostalgia of metal money. As already suggested by the apt metaphor of 'mining', despite being cast in technological futurism, Bitcoin also always looks back nostalgically to a world of metal money.[48] Driven by an attempt to induce economic discipline and a quest for the intensified commodification of money, Bitcoin is a project of artificial scarcity.[49]

## IV. The Politics of Bitcoin

As much as blockchain systems may aspire to 'create order without law', as De Filippi and Wright put it, these visions are not beyond politics.[50] Instead, cryptocurrencies are highly political projects in their own right. From the beginning, Bitcoin presented itself in the garb of a transformative utopian project, with roots in cypher-punk, anarchist, and libertarian promises of technology. Robbing governments and banks of their ability to control money would create on this view a world in which states had lost control over tax revenue and credit creation, thereby left unable to finance wars.[51] In this section, I take a closer look at this political vision with reference to the example of Bitcoin and subject it both to internal and external critiques. To summarize, first, Bitcoin's colourful paeans to decentralization, competition, and efficiency stand in stark contrast to its actual workings. Instead of a decentralized, efficient currency, Bitcoin is today mostly a speculative asset with few if any uses

[47] Satoshi Nakamoto, 'Bitcoin: A Peer-to-Peer Electronic Cash System' (2008), 8.

[48] One entrepreneur—Anthem Hayek Blanchard, whose first name is the title of an Ayn Rand novel while his middle name speaks for itself—has even since combined all three elements in the form of a digital currency backed by a gram of gold. Its name? 'HayekCoin.' Henry Sanderson, 'Digital Currencies: A Gold Standard for Bitcoin' (*Financial Times*, 15 May 2015).

[49] As computing power becomes more powerful, the mathematical problem that needs to be solved in order to 'mine' an additional Bitcoin is designed to become automatically more complicated. Bitcoin is also irreversibly programmed to stop 'mining' once there are 21 million Bitcoins (as of March 2018, around 16 million had been generated).

[50] De Filippi and Wright (n 1), 5. See also Primavera De Filippi and Benjamin Loveluck, 'The Invisible Politics of Bitcoin: Governance Crisis of a Decentralized Infrastructure' (2016) 5(3) *Internet Policy Review*, 1–28.

[51] Popper (n 44), xx–xv.

as currency but a substantial energy footprint generated by an oligopolistic set of miners. Second, even in as far as Bitcoin succeeds in privatizing money (or in particular if it were to succeed more generally), this would amount to a de-democratization of an essential public good. It is not clear why any regulatory authority or democratically legitimated body should accept such a proposal.

The central claim of blockchain technology is that it 'addresses the centuries-old problem of trust'.[52] The 'decentralized trust' of the ledger offers on this account a technological solution to the fragility of human relations. However, while vowing to exist without trust and hierarchy, existing cryptocurrencies have quickly given rise to informal structures of de facto governance that can be neither checked nor changed. Despite their self-presentation as currencies beyond the fickle bonds of human trust, existing cryptocurrencies have shown themselves moreover to be heavily dependent on the trust of their respective community of adopters. After all, the quality of the ledger is only ever as good the quality of its members. As Nathaniel Popper has documented, it was only the mutual trust of the early Bitcoin community members that allowed it to take off in the first place.[53] This entailed both networks of collective trust, as well as highly personalized trust in selecting Bitcoin opinion leaders, such as Roger Ver, the early cryptocurrency advocate humbly known as 'Bitcoin Jesus'. Just as the politics of money is inescapable, even a blockchain payment system requires trust: trust in the integrity of the underlying code, trust in any authority deciding about the exception (such as a 'fork' in the blockchain) and trust in the liquidity of the respective asset. While the pure theory of blockchain systems speaks only of 'decentralized trust', personal authority and trust in individual reputation has been crucial to the success of various existing cryptocurrencies.

Once more, existing cryptocurrencies paint a picture that deviates markedly from reality. Bitcoin's mining algorithm, for example, highly favours large conglomerates of miners. As a result, neither the generation of Bitcoins nor the confirmation of Bitcoin payments is truly decentralized. Instead, its mining and the processing of payments tends to be heavily centralized, with a small number of extremely large miners operating in an oligopolistic structure that strikingly resembles that of the global banking system.[54] Faith in decentralization has obscured the ongoing existence of hidden central authorities, the trusting influence of individual opinion leaders, and more generally the oligopolistic forces of network power.[55] Cryptocurrencies continue to rely on centralized forms of authority that are tacitly embedded in the design of the original algorithm but systematically obscured in the form of market power.[56]

If decentralization is one important rhetorical pillar of the Bitcoin vision, the implicit promise of efficiency is another. But again, due to the way in which Bitcoin intentionally produces artificial scarcity through the solving of cryptographic puzzles there is an enormous waste of resources that produces a breath-taking energy footprint. To estimate Bitcoin's energy use we can begin with the total computing power of the entire Bitcoin network. In early 2018, total Bitcoin computing power stood at around 26 quintillion hashes per second.[57] These can come either from highly efficient, professional mining computers or from less efficient, older computers. Assuming that the entire computing power derives from the most

[52] Michael Casey and Mariana Dahan, 'Blockchain Technology: Redefining Trust for a Global, Digital Economy' (14 June 2016) https://medium.com/mit-media-lab-digital-currency-initiative/blockchain-technology-redefining-trust-for-a-global-digital-economy-1dc869593308#.9fyo6ynbv.

[53] Popper (n 44), 77–80 and 142.

[54] At the end of 2017, less than 1,000 or so accounts owned 40% of Bitcoin. Olga Kharif, 'The Bitcoin Whales: 1,000 People Who Own 40 Percent of the Market' (*Bloomberg*, 8 December 2017).

[55] Grewal (n 36).

[56] Such hidden centralized authority has become visible most palpably in the case of hard forks: De Filippi and Wright (n 1).

[57] Alex de Vries, 'Bitcoin's Growing Energy Problem' (May 2018) 2 *Joule*, 801–09.

efficient mining computers available, researchers have arrived at an absolute minimum estimate of Bitcoin's energy consumption. As of March 2018, this absolute lower bound was 2.55 GW.[58] For comparison, this is roughly as much energy as Ireland consumes.[59] Once we account for less efficient equipment and include the energy necessary to cool the computers, the estimate quickly rises to 8 GW.[60] This range suggests that Bitcoin's energy consumption is currently comparable to that of a medium-sized European country. (Nathan Ensmenger even estimates that Bitcoin today uses as much energy as the whole of Germany.)[61] This is likely to rise quickly thanks to the inbuilt increase in difficulty of the underlying cryptographic task. As of 2018, Bitcoin's energy footprint was on track to soon overtake the total amount of energy generated by all the world's solar panels.[62] The metaphor of 'mining' Bitcoin thus turns out to be a painfully accurate description of its environmental impact. To be sure, it is possible to envision a cryptocurrency without such an enormously wasteful energy footprint but these would have to abandon precisely the pledge to cryptographically enforced artificial scarcity so prized by those who are looking for a speculative asset with a fixed supply or a currency with an in-built deflationary bias.

These discrepancies between Bitcoin's outward self-presentation as a decentralized currency beyond politics and its actual political impact as a wasteful speculative asset are not just caveats or exceptions. They point to a larger issue by serving as a reminder of the inescapability of politics and the way in which Bitcoin relies on recurrent attempts to hollow-out existing public goods, from money to energy. Existing cryptocurrencies do not break with politics. Instead they aspire to cut themselves off from the shared provision of public goods and the democratic ideal of collective self-rule. To be sure, the politics of Bitcoin is a peculiar one in as far that it tends to deny its own political nature. However, this, in itself, is nothing puzzling or new. Some of the most powerful political movements—not least classical liberalism—have tended to naturalize their political claims or hide them behind invocations of nature, history, and other forces that seem to be precisely beyond human control. To insist then that there can be no such thing as apolitical money is to refuse to take at face value the anti-political rhetoric of Bitcoin and to understand it instead as a powerful, if pernicious, political strategy in its own right.

## V. Conclusion

The depoliticized vision of electronic money embodied by Bitcoin rose to prominence in the context of the re-politicization of money during the 2008 Financial Crisis. Taking seriously this context allows for re-situating the rise of cryptocurrencies as an echo of the unresolved political contestations of the 1970s over the politicization and depoliticization of money, contestations that the Great Moderation had subdued and obscured. Only the post-Crisis collapse of the depoliticizing facade of money opened up the space for Bitcoin's proposal to shield money against political discretion. Appreciating this framing allows us to become more attentive to cryptocurrencies' peculiar politics of depoliticization in the liminal space between private money and speculative asset. While cryptocurrencies are frequently framed as an escape from the politics of money, I have argued that this is highly misleading. Not only do cryptocurrencies engender their own politics, they also rely constitutively on the

[58] ibid., 801.

[59] International Energy Agency, 'World Energy Statistics 2017', https://www.iea.org/publications/freepublications/publication/KeyWorld2017.pdf.

[60] de Vries (n 56), 801. See also Karl O'Dwyer and David Malone, 'Bitcoin Mining and Its Energy Footprint' (2014) ISSC 2014/CIICT. Ironically, it is most profitable to mine Bitcoin in socialist countries with highly subsidized energy, such as China and Venezuela.

[61] Nathan Ensmenger, 'Dirty Bits: An Environmental History of Computing' (16 March 2016), Talk at Yale University. See also Ingrid Burrington, 'The Environmental Toll of a Netflix Binge' (2015) *The Atlantic*.

[62] de Vries (n 56), 801–09.

acquiescence of states, central banks and other regulatory authorities. Cryptocurrencies are highly unlikely to replace fiat currencies any time soon, but they will deepen the global proliferation of tax havens, regulatory arbitrage, and shadow banking. Rather than revolutionizing the global monetary infrastructure for the better, cryptocurrencies have instead emerged as highly risky, speculative financial games.[63] High transaction costs and long processing times have meanwhile rendered Bitcoin virtually impractible as a payment system.[64] Instead of a new form of money, most cryptocurrencies now function as decentralized gambling machines masquerading as a technological breakthrough.[65] Cryptocurrencies' insistence on their status as currencies looks from this perspective less like a noble ambition than a self-serving attempt to starve off securities regulation, money-laundering rules, and the taxation of capital gains. After all, the success of cryptocurrencies as speculative assets would be unthinkable without their extremely light, preferential regulatory treatment that has rendered them highly desirable for purposes of financial fraud, price manipulation, and an extraordinary mis-selling of risky securities to ill-informed retail investors. The price rise of 2017 exposed this strategy to an ironic predicament. While light regulatory treatment of cryptocurrencies hinges on their nominal status as currencies, their success as speculative assets undermines precisely such claims.

It is worth stepping back at this point to recall the stakes involved. The Financial Crisis constituted a powerful reminder of the political dimension of money. Since the crisis the seeming alchemy of fiat money, so successfully repressed before, has once more stirred up a wariness and anxiety about the effervescence of modern credit money. Faced with the fictitious nature of credit money it is tempting to be suspicious of its Faustian character. Calls for rooting money in an unalterable algorithm mirror in this context the earlier seductions of rooting money in a precious commodity. Both respond to the same underlying anxiety by promising to remove money from human control. But this impulse should make us pause. Appreciating the inescapable politics of cryptocurrencies points us instead towards the unresolved nature of the ad hoc global monetary order that emerged haphazardly since the end of the Bretton Woods system. The Financial Crisis not only witnessed cryptocurrencies' re-staging of earlier attempts to depoliticize money, but it also opened up renewed calls for global monetary reform that echo the unsuccessful demands of the Global South during the late 1970s. The dystopian challenge of cryptocurrencies offers, in this sense, also an opportunity to openly reflect about the kind of monetary order we want and the kind of currency that can live up to our political ideals.

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[63] J. P. Koning, 'Bitcoin as a Novel Financial Game' (6 June 2016) *American Institute for Economic Research* https://www.aier.org/article/sound-money-project/bitcoin-novel-financial-game.

[64] In a tell-tale sign, in January 2018, the North American Bitcoin Conference was forced to suspend payments in Bitcoin because these had become too slow and expensive: Aaron Mak, 'The North American Bitcoin Conference is No Longer Accepting Bitcoin Payments for Tickets' (2018) https://slate.com/technology2018/01/the-most-important-blockchain-conference-of-the-year-won't-take-bitcoin-for-last-minute-sales.html.

[65] Lynn Parramore, 'Jim Chanos on Fraud' *Institute for New Economic Thinking* (2018) https://www.ineteconomics.org/perspectives/blog/jim-chanos-cryptocurrency-is-a-security-speculation-game-masquerading-as-a-technological-breakthrough.

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