

Financial capital goes to heaven: Bitcoin, fintech 3.0 and the massification of the indebted man

O capital financeiro vai ao paraíso: Bitcoin, fintech 3.0 e a massificação do homem endividado

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ABSTRACT

The article analyzes Bitcoin cryptocurrency as part of a new sector of the financial market, fintech 3.0. Subscribing to Maurizio Lazzarato's thesis that the category of the *indebted man* would be the form of governmentality of contemporary capitalism, it is discussed how Bitcoin works as a vector of expansion of the social logic of indebtedness to a portion of the population. At first, I propose to think of cryptocurrency as media. Below, I present a genealogy of the ideologies that animated the creation of Bitcoin, in order to demonstrate the libertarian values that guided the design of this new technology. Finally, I discuss how fintech 3.0 spreads the social logic of the indebted man through personal digital devices. **Keywords:** Bitcoin, fintech 3.0, currency as media, financialization of everyday life, indebted man

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RESUMO

O artigo analisa a criptomoeda Bitcoin como parte de um novo setor do mercado financeiro, a fintech 3.0. Subscrevendo a tese de Maurizio Lazzarato de que a categoria do *homem endividado* seria a forma de governamentalidade do capitalismo contemporâneo, discute-se de que modo a Bitcoin funciona como um vetor de expansão a uma parcela da população da lógica social do endividamento. A princípio, proponho pensar a criptomoeda como mídia. A seguir, apresento uma genealogia das ideologias que animaram a criação do Bitcoin, a fim de demonstrar os valores libertários que nortearam o desenho dessa nova tecnologia. Por fim, discuto como a fintech 3.0 difunde a lógica social do homem endividado por meio de dispositivos digitais pessoais.

Palavras-chave: Bitcoin, fintech 3.0, moeda como mídia, financeirização da vida cotidiana, homem endividado

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MATRIZES



INTRODUCTION

¹ Cryptocurrencies are an open source digital asset designed to function as a payment system between users of a distributed network (peer-to-peer). Coin ownership records are stored in a digital ledger, the blockchain, which uses encryption to protect transaction records, control the creation of additional coins, and verify the transfer of the property of coins.

² A set of principles and techniques used to encrypt a script, making it unintelligible to those who do not have access to the stipulated technical conventions.

³ The problem of the indebtedness of individuals (notably, the indebtedness of university students in the United States) took center stage in the agenda brought by the Occupy Wall Street movement. Since then, indebtedness as a form of governmentality has become the object of academic reflection among intellectuals from different theoretical currents (Graeber, 2011; Lazzarato, 2017).

THE CRYPTO CURRENCIES¹, OR encrypted digital currencies², gained prominence as one of the most innovative financial assets in recent years. Launched in 2008 after the publication of an article by a developer whose identity is unknown, but who presented himself under the pseudonym Satoshi Nakamoto (2008), Bitcoin seemed to be a turning point in the trajectory of the financial market. Unlike previous experiences (such as Bit-Gold or B-Money), its registry system, the blockchain, promises to guarantee the necessary confidence for the use of this medium of exchange by a decentralized community, without the need for any political authority to certify its value. In addition, Bitcoins were offered not by large institutions in the financial sector, but by individual developers and/or small computer companies (startups), revealing the emergence of new economic agents that could restructure the financial market. It is not surprising, therefore, that Bitcoin has been hailed as the future of financial technology, or fintech.

Bitcoin's release date is emblematic. The financial crisis caused by the bursting of the housing bubble (called the mortgage crisis or subprime) in 2007, which started in the United States and soon became global, marks a turning point in contemporary capitalism. Unlike previous crises, which could be circumvented with the creation of new speculation bubbles, that of mortgages showed the exhaustion of neoliberalism's capacity to generate capital growth (Streeck, 2018; Varoufakis, 2016). At the time, popular uprisings emerged that demanded the regulation of financial capital and the end of neoliberal policies, which resulted in increasing indebtedness of the population.³ The Occupy Wall Street movement was the most emblematic effort in this direction (Harvey et al., 2012). Among intellectuals and analysts of the political and economic situation, it was even declared the end of neoliberalism and the return to economic policies that presuppose greater State participation in income distribution as a way to achieve social justice.

What happened following the state intervention to remedy the economic crisis was, however, just the opposite. Instead of offering *mea culpa* for rampant speculation, large banks and financial agencies began to demand that national states be better able to bail out the financial sector in case of need. However, as the states lent (non-repayable) money to the financial sector in order to provide liquidity to the economy, the public debt of these countries increased remarkably. In the reading of financial capital, this meant that states would no longer be able to pay (to the financial market itself) the interest on their debts (Blyth, 2017). Despite the obvious paranoid nature of this argument, financial market lobbyists successfully pressured states not to regulate financial capital

and, instead, accelerate fiscal austerity policies, reduce public investment in public services, deregulate the labor market and privatize common goods (water, energy, road infrastructure etc.).

This movement led to the deepening of direct relations between civil society and financial capital. The neoliberal period in politics is characterized by the displacement of the State's social functions and the deregulation of labor protection. This has a series of consequences for the workforce, such as the general decrease in wages and the transformation of unemployment and informal employment into structural factors in the economy. Without guaranteed jobs and with scarce and precarious public services, most individuals turn to the private sector for the goods and services necessary for their livelihood. This unprecedentedly increases the level of personal indebtedness, creating a systemic relationship between *creditor* and *debtor* with financial capital. By relying more and more on private credit to fund their lives, individuals are incurring more and more debt to the point where most of their working time is devoted to paying multiple bills, which are never extinguished. Thus, a new type of economic subject emerges, who does not seek so much to maximize their profits as to pay their debts. Hence, Maurizio Lazzarato (2017) created the concept of the *indebted man* (*l'homme endetté*) to account for the subjectivity characteristic of neoliberal capitalism.

However, after the financial crisis of 2007, how would it be possible to direct families and companies to seek more private credit in a scenario of economic depression and disbelief in the financial system? One possible solution was to offer financial products that could be accessed through personal digital devices such as laptops or cell phones. Not by chance, as of 2009, we witness the emergence of a growing number of digital companies that offer access to financial products via the internet: crowdfunding platforms, digital banks, digital portfolios, investment platforms in the stock market or in public bonds for individuals, cashback, cryptocurrencies, tokenization, among other products.

This set of digital platforms ended up constituting a new niche in the financial system, which has been labeled fintech 3.0⁴ (Arner et al., 2015; Nicoletti, 2017). Their peculiarity lies less in the novelty of the products they offer (although some are quite innovative) than in their audience: any individual with minimal availability of money and access to the Internet. Thus, the financial market would have access not only to large sums of money from a few large investors, but also to the little money of millions of small investors, who could give back the liquidity of a sector of the economy depleted by fears of the subprime crisis. Under the banner of *democratization of the financial market*, the problem of both liquidity and the population's confidence in the financial market had

⁴In their analysis of the financial market after the mortgage crisis, Arner et al. (2015) decided to create a historical perspective of the global financial system from the agents who offered financial products, that is, through some evolution of financial technology companies. From a historicist perspective, the authors decided to classify three moments: between 1866 and 1987, when fintech 1.0 would be established; between 1987 and 2008, when there is a shift to fintech 2.0; and, finally, from 2008 until the present moment, when fintech 3.0 would be configured.



been alleviated not with a strong regulation of financial institutions, but with the attraction of an immense public to its speculative logic. Ironically, it can be said that the occupation of the financial market actually took place, but in a diametrically opposite way to the intention of the insurgent demonstrators.

As the contracting of financial products becomes more accessible, individuals see themselves more as *investors*, each having their own *investment portfolio* (collection of financial investments that would replace the traditional savings or guarantee fund). As a manager of their own investments, each individual starts to conceive of themselves as a manager of their own money – or rather, as an *entrepreneur of themselves* (Foucault, 2008). However, it is critical to understand that the entrepreneur himself needs to take risks in order to undertake and profit, that is, incurring debt. His objective as a manager is, first of all, to take care of his debt so as not to go bankrupt. Therefore, every self-employed person is necessarily indebted.

It is crucial to note that there is an ideological dimension that cannot be dissociated from the emergence of fintech 3.0. The entrepreneur of himself is not a mere technician in business administration, but someone who must believe in market forces (and not in politics) as the only solution to solve problems in everyday life. That is, it is imperative to internalize a set of values that make rational the act of assuming debts to undertake. In short, it is about adopting a new spirit of capitalism, under the neoliberal aegis (Boltanski & Chiapello, 2009).

The Bitcoin case is paradigmatic. Its developers are part of a movement calling itself cypherpunk (Assange et al., 2013), which advocates that individuals resist state surveillance through the use of cryptography. Its anti-statism derives from anarcho-capitalism, a radicalization of the neoliberalism principles that intends to completely dismiss the need to have a State as regulator of the social body, preaching the protection of individual sovereignty through private property and the free market (Morriss, 2008; Paraná, 2020; Rothbard, 2013). For anarcho-capitalism, one of the ways to get rid of the State would be precisely private entities' freedom to issue their own currencies, which would be regulated by competition among themselves (Hayek, 2011). This is the worldview that underlies the entire Bitcoin architecture: the blockchain allows this means of exchange to be guaranteed by a system for verifying economic transactions that is, at the same time, the means of controlling the issuance of coins. Thus, users of the virtual community are allowed to maintain confidence in the payment system, without the need for a regulatory political authority. Therefore, its developers maintain that Bitcoin is an apolitical currency.

Besides the ideological issue, it is also decisive to note the existence of a communicational dimension: Bitcoin presents itself as a registration system

for archiving, transmitting and processing information – or rather, a *medium* (Kittler, 2017), whose materiality aims to replace politics. After all, it is the belief that the blockchain architecture can technically certify the existence of past transactions that makes the Bitcoin user community exist and challenge any attempt to regulate cryptocurrency.

This article aims to analyze Bitcoin as an integral part of fintech 3.0, in view of the spread of the governmentality of the *indebted man*. It is understood that cryptocurrencies are a privileged object to discuss the working logic of fintech 3.0, as it is a medium that translates into technology, in a unique way, the values of radical strands of neoliberalism. It is, therefore, an object that produces a convergence between political philosophy and media studies. On the one hand, I propose to think of Bitcoin as a medium, an information registration system to transform individuals' financial information – assets and debts – into data that can be traded on digital platforms. On the other hand, I defend analyzing how the materiality of this medium incorporates the values of the political philosophy that founded its development, presenting relevant political consequences.

The article is divided into three sections. In the first, I analyze cryptocurrency as a medium. Then I carry out a genealogy of the values that founded the development of Bitcoin. Finally, I discuss the place of fintech 3.0 within the broader framework of contemporary capitalism's transformations, supporting the thesis that it serves as a vector for the massification of the indebted man's logic. The final considerations are dedicated to aligning fintech 3.0 with studies on platform economics.

A CONTRIBUTION TO CURRENCY THEORIES: CURRENCY AS MEDIA

Capitalism is a monetary economy in which the intervention of currency is not functional (facilitating exchange, measurement, treasury), but political, as it expresses and sanctions power relations. (Lazzarato, 2017, p. 137)

Currency is a challenging phenomenon for any socio-economic science⁵. Although fundamental to the functioning of modern capitalism, its origins precede it. Even its current use has a number of dimensions that exceed the merely utilitarian capacity of explanation, since, if it is true that every currency is defined as a means of exchange and a store of value, it is also a system of signs, a system of objects, a political instrument and an agent of social relations.

Incredibly, it is the economic theories that present the most difficulties in dealing with the subject. For orthodox economic theory (classical liberal,

⁵ In this article, I use *money* and *currency* practically synonymously, although it is known that there are differences between these terms. In general, the word *money* is reserved to designate the modern currency of capitalist states, while the term *currency* refers to every means of exchange used throughout economic history. See Théret (2008).



⁶In their critique of the liberal theory of money, Gilles Deleuze and Félix Guattari (1972/1976) would label every theory of money that is based on the idea of exchange as *exchangiste*, a French term translated as “exchangist”.

neoclassical and neoliberal), it was established as an assumption that currency is only a means of exchange, a measure of value and a store of value. From this perspective, currency would have emerged as a more efficient instrument for carrying out exchanges based on the barter economy⁶. Currency would facilitate the exchange of goods, as its ability to represent goods would overcome the limitations of time and space inherent in barter. Thus, money would be a functional creation of the market, a public good resulting from the search of private agents to minimize the transaction costs inherent to the barter system. This conception leads to the conclusion that money has a double form of neutrality: logical and political (Dodd, 1997). Logical neutrality holds that money simply mediates the exchange of goods, being a more efficient substitute for commodities. Political neutrality means that, although the distribution of money generates inequalities of wealth in a society, it is never itself the cause of inequality. Such neutralities allow orthodox economic theories to elude both the social dimension of money and the role of the State in its functioning (money would therefore be apolitical) (Dodd, 1997; Metri, 2014).

In the 20th century, neoliberal economists would return to the assumption of money as an apolitical entity in order to stand against state economic policies. Fundamentally, the so-called *quantitative theory of money* is based on the hypothesis that substantial changes in the price level and nominal income are the result of changes in the nominal money supply, that is, the problem of inflation would be solely linked to the amount of money in circulation in the market. This axiom underlies Friedrich Hayek's (2011) argument that the best way to control the inflation problem would be the issuance of coins by private entities, which would compete with each other in the market. The competition would automatically control the amount of coins in circulation, keeping it at an optimal level.

With Milton Friedman monetarist thought reaches its peak. Briefly, Friedman (1984) defended that the issuance of money by the government should strictly follow pre-established and nominally unalterable rules, which would be updated according to the population growth rate. If the inflation problem is due to the amount of currency in circulation, the automatic control of market liquidity would be enough, instead of monetary policies decided in the political sphere. Friedman even stated that the US central bank, the Federal Reserve, should be replaced by a computer that would calculate the amount of currency needed at a given moment (Paraná, 2020).

The liberal conception of money has received important criticism throughout history. The best known is that of Karl Marx (1867/1983). By placing the labor force of the proletariat at the center of his theory of value, Marx diverges from

the economic theory of money in realizing in it not a mere articulator of the activities of independent producers, but a means through which labor is abstracted and commodified in order to be bought and sold in the labor market. There are, in this definition, two important implications. The first is that money takes the form of a commodity, albeit of a special nature. Note that Marx too perceives money as a development of the exchange system; not as a state production⁷.

Indeed, the dimension of sovereign power would only be added to theories of money by Georg Friedrich Knapp when he published, in 1905, the work *Staatliche Theorie des Geldes* (The State Theory of Money), which founded the Charlatist theory of money (Metri, 2014). Knapp's thesis is that the guarantee of the value of money would not reside in its parity with precious metals, but in the authority of the State, which grants legitimacy to a specific means of payment (currency) in a given territory, under a given legal framework (Metri, 2014; Weber, 1921/1999). This approach allowed the analysis of the institutional dimension of money (monetary policies, financial institutions etc.) as an endogenous element to its value, in opposition to the assumption of currency neutralities. As the State imposes its currency as a means of paying its taxes, it makes it circulate among the population, creating a debt ratio to be paid in sovereign currency. Money would be, first and foremost, an instrument of state power.

The twentieth century will witness a profusion of heterodox theories of money. A very influential approach is what might be labeled as *cultural*. In this perspective, the works of Georg Simmel and François Simiand stand out. Commentators insist that Simmel's (2004) philosophy of money can only be understood as a specialized application of his theory of modernity, which supports the uprooting of social relations, characterized by social mobility, expansion of social circles, individualization and autonomy of things, which come to be governed by their own laws (Dodd, 1997; Waizbort, 2000; Zelizer, 1994). Money appears as the perfect instrument, as its characteristic of abstraction and anonymity gives individuals the *freedom to do something*, that is, buy what they can, without pre-established social restrictions.

Money is conceived as an instrument of exchange, not containing any instituting capacity for domination, which reaffirms the concept of the political neutrality of money. Its value would result from the perception of individuals when evaluating and desiring certain objects, a fact that constitutes, as Leopoldo Waizbort (2000, p. 140) well observes, a psychological theory of value. François Simiand (2018) would, in turn, follow the program stipulated by Durkheim for economic sociology, studying money as a social fact (Steiner, 2018). In this sense, he develops the assumption that money expresses value and balances exchanges because the individuals who use it deposit a faith, a social belief in maintaining

⁷It is important to note, however, that Marx also follows the view that money is a symbol of the socio-economic contradictions immanent in capitalism, but not its direct cause. This assumption is visible, as Nigel Dodd (1997) underlines in his criticism of the Proudhonians about giving up the use of currency. It is precisely because he understands that money does not have intrinsic social values that Marx will disagree with the proposal to abolish the use of money as a way of achieving social equality.



its value, that is, the support to its existence lies in the power of collectivities. In these two cases, albeit in a different way, the question of individuals' *trust* in money is the pillar of explanations of the value of money.

The dimension of power immanent to money would be better developed, but through an approach that permeates philosophy and anthropology. His hypothesis is that the *raison d'être* of money resides not in the rationality presupposed by liberal theory, but in social relations based on the concept of *debt*. This thesis begins with Friedrich Nietzsche (1844/1908), in *The Genealogy of Morals*. As a form of criticism of the utilitarian argument of exchange as social cement, the philosopher argued that mnemonic techniques are developed to inscribe memory in individuals. Subsequently, the concept of debt would have metamorphosed into notions of guilt, punishment and compensation, thus functioning as a structuring force in social relations: hierarchical social relations are thus established, based on the fundamental division between *creditors* and *debtors*.

Decades later, Marcel Mauss (1950/2003) performed a reading that, in a way, echoes Nietzsche's polemic in his essay on the economy of gift, when he stated that exchanges in primitive societies followed the dialectic of give-receive-reciprocate, the founding link of social ties in these societies, moving away from the utilitarian conception of exchange. In this case, money becomes not a perfect instrument of exchange, but an entity that contains within itself a power of social agency. This heterodox reading would be taken up by authors from fields of knowledge as distinct as philosophy (Deleuze & Guattari, 1972/1976; Lazzarato, 2017), economics (Théret, 2008) and social anthropology (Graeber, 2011). It will be discussed in detail in the third section of this article.

At the moment, it is necessary to recognize that the profusion of theories about money reveals the existence of at least three currency states, according to the Bruno Théret's formulation (2008, pp. 12-16):

- *Incorporated state*: the confidence of individuals in the stability of the monetary system. Currency is a symbolically organized means of communication – or rather, a specialized language that allows people to communicate with a view to establishing economic relationships;
- *Institutionalized state*: this is the currency and regulation, or even the institutional dimension of the currency that forms a payment community, and sovereign power is what determines the currency's validity;
- *Objectified state*: monetary instruments, means of payment and current currencies. Such technologies are “the purest expression of currency... not expressing itself anymore... as a language, but through a system of objects” (p. 15).

The objectified state stands out for being the least theoretically developed. This is because, to some extent, the conception of the materiality of money brings the burden of the metallist theory of money⁸. In general, this theory ended up being restricted to justifying the use of gold (because of its divisibility and rarity) as a base for modern currencies. With the end of the gold standard in 1971, metallism became an obsolete explanation.⁹ Unfortunately, its decay also dampened interest in thinking about the materiality of money as a system of objects.

In this article I proposed to resume the analysis of the materiality of money, considering it as *media*. By media we adopt Friedrich Kittler's definition (2017) for all technology that performs archiving, processing and transmission of data, constituting a registration system (*aufschreibesysteme*). In this sense, it is worth thinking about how the technological structure of currency influences the formation of its value and its circulation in society. This approach does not dispense with other currency states, but aims to make the debate more complex by proposing something more than a hermeneutic and/or institutional theory of currency. Currencies also have a materiality that, in different ways, underlies their applicability as a means of exchange and store of value: whether they are shells, precious metal, paper money or bits, each of these materials plays a role in the way people use money and, therefore, in the way money structures the relationships between people and goods.

Cryptocurrencies have revived interest in the materiality of currency as an information system. After all, one of the decisive points of its novelty lies precisely in the Blockchain's ability to create an artificial rarity in the digital environment and generate a set of rules (a deflationary monetary policy, in fact) that determine the uses and assessments (trust) about Bitcoin.

Interest in the materiality of money should not be limited, however, only to the physical qualities of each technology. Such an approach must be coupled with another level of analysis, in which one seeks to understand currency as part of a complex of financial technologies (economic policies, taxes, financial institutions, among others), forming an *axiomatics*, in the sense proposed by Gilles Deleuze and Félix Guattari (1972/1976), that is, utterances, catch words, commands (axioms) and corresponding devices (realization of the axiomatics) designed to convert the decoded flows of desire into new abstract forms of value (Guéron, 2017; Lazzarato, 2017). In other words, it is necessary to conceive currency as part of a technical machine that involves people and things in specific ways, generating different forms of subjectivation and social relations. Therefore, it is necessary to analyze the values that lead to the adoption of a certain technology as currency.

⁸Title created by Knapp in order to criticize theories that maintain that the value of currency is determined by the purchasing power of the commodity upon which it is based. The fundamental problem with this perspective would be to fail to understand that the value of gold itself is ultimately determined by (1) cultural principles and (2) political institutions (Metri, 2014).

⁹Strangely enough, cryptocurrencies attempt to rescue the metallist theory of currency through the constant analogy their developers make to gold. The adoption of terms like gold (in the case of the Bit-Gold experiment) and coin mining is notable. In the paper by Satoshi Nakamoto (2008, p. 4), it is literally said that "The steady addition of a constant amount of new coins is analogous to gold miners [emphasis added] expending resources to add gold to circulation". Some authors even speak of some digital metallism as a theory of currency among cryptocurrency developers (Maurer et al., 2013; Paraná, 2020).



CYPHERPUNKS AND ANARCHO-CAPITALISM: THE GENEALOGY OF MORAL OF BITCOIN AND THE MODUS OPERANDI OF FINTECH 3.0

Liberalism has always left it to the socialists to produce utopias, and socialism owes much of its vigor and historical dynamism to this utopian or utopia-creating activity. Well, liberalism also needs utopia. (Foucault, 2004, pp. 218-219)

Bitcoin analysis cannot do without the genealogy of values that mobilized the early developers of cryptocurrencies. The effort to build a complex information system capable of mimicking the money issuance process in order to compete with fiat currencies responds more to political philosophy than to technical imperatives of the financial market. After all, most of the money that circulates in the global economy today is digital, as noted by Edemilson Paraná (2020). Thus, Bitcoin should be seen as a disjunctive media insofar as it gives concrete form to a supposedly apolitical currency.

A close look at cryptocurrency developers reveals that they position themselves as members of the cypherpunk movement. The neologism refers to an insurgent political movement, of anarchist inspiration (hence the reference to the punk musical genre), which uses cryptography (cypher) as an instrument of social and political transformation. The so-called anarchist ethos refers to the fierce opposition to the State, seeing in it merely an agent of coercion to individual freedom, understood as the capacity to carry out economic actions. As the authors of the book *Cypherpunks* (Assange et al., 2012) state: “Recall that states are the systems which determine where and how coercive force is consistently applied”, which, given the new world promoted by digital networks, “would prevent the independence we had dreamed of, and then, squatting on fiber optic lines and around satellite ground stations, it would go on to mass intercept the information flow of our new world” (pp. 3-4). To prevent the State from affecting individual freedom, cypherpunks present themselves as a political vanguard that seeks to monitor and thereby limit the power of States through disjunctive digital technologies (Paraná, 2020).

The anti-state spirit of cypherpunks stems from a radical strand of neoliberalism, anarcho-capitalism, or libertarianism. The term gives name to the political philosophy that advocates the complete abolition of the State, assuming that private agents, communally associated, would be able to provide all the necessary conditions for the survival of individuals through the defense of private property and free competition (Morriss, 2008; Rothbard, 2013). According to this theory, all public goods and services should be privatized, as free competition between private agents would result in the offer of the best

possible service at a fair price – including in the case of money. Without the State, taxes would not be necessary and, thus, currencies could be supplied through a free banking system, competing with each other, which would guarantee control of the volume of money available, thus avoiding inflation (Hayek, 2011).

Cypherpunk believes in technological innovation as creation strategy of a society against the State. As well noted by Michel Foucault (2008, pp. 317-319), the neoliberal conception of human capital allows us to reread technological innovation as a lever for social development, giving new impetus to the Schumpeterian conception of creative destruction¹⁰ (Schumpeter, 2010). From a libertarian perspective, innovation is seen as an escape line for entrepreneurs in relation to the State: the continuous technological innovation carried out by civil society would prevent politics from intervening to control the pace of social change. The creation of cryptocurrencies tries to realize this libertarian worldview: the creation of a currency technically capable of guaranteeing the trust of the user community would be the perfect substitute for a sovereign currency linked to taxes, economic and monetary policies, in short, to the State (Ulrich, 2014).

¹⁰Term that refers to the phenomenon of introduction of an *innovation* (which can be a new work method, product or production technology, among other possibilities) by a differentiated agent within the market, the entrepreneur, which causes such a disjunction of traditional knowledge, techniques and commercial practices that it would create a new market.

Cryptocurrencies began to be developed in the 1980s, when programmer David Chaum proposed an anonymous system for digital payments. Over the next decade, developers Nick Szabo and Wei Dai tried to implement two cryptocurrencies that would work through a decentralized peer-to-peer (P2P) sharing system, Bit-Gold and B-Money (Cannucciari, 2016; Paraná, 2020). Bitcoin was, however, the first successful experience, as it was guaranteed by a distributed transaction verification system, the blockchain (Nakamoto, 2008).

Blockchain is a registration system that works like the accounting ledger (where debits and credits of an account are registered), that is, it is a shared digital accounting technology that records all transactions between users of cryptocurrency. Transactions are not, however, visible to users a priori. Therefore, the work of the so-called *miners* is needed, who check the validity of registered transactions and, in doing so, receive as a form of prize (*proof of work*) a certain amount of new coins. Note that the blockchain mechanism was therefore developed to set in motion a true automatic monetary policy. Its *modus operandi* avoids the problem of *double spending*, that is, using the same coin more than once in different transactions (fraud in the exchange system). The transaction file guarantees that a Bitcoin unit used in a transaction is withdrawn from the market until its receiver uses it in a new trade. This creates an artificial rarity for the cryptocurrency. At the same time, Bitcoin's algorithm expressly controls the issuance of coins over time. As the user community grows, mining becomes more difficult. Thus, the issue of coins is slowed down and market liquidity is



proportional to the community population. Here, the influence of the quantitative theory of money on cryptocurrencies is revealed: as a true fulfillment of the Friedmanian dream, the Bitcoin-based algorithm is programmed so that, in the year 2140, there will invariably be an offer of 21 million Bitcoins in the digital market (Paraná, 2020; Ulrich, 2014).

The publication date of the article that starts Bitcoin, the year 2008, is emblematic because it is part of a moment of crisis in the financial market and of questioning the capacity of states to avoid economic crises. The mortgage financial crisis had at least two important immediate consequences for the financial market. From the start, there was a large amount of layoffs from investment agencies and large banks, pouring a highly qualified workforce into the labor market. At the same time, the economic crisis marked a moment of popular criticism of the financial market and its products, notably derivatives. Movements like *Occupy Wall Street*, which repeated themselves around the world under the name *Indignados*, revealed extreme popular dissatisfaction with neoliberal policies and finance capital (Harvey et al., 2012). That moment was even considered as the end of neoliberalism and the resumption of more interventionist economic policies or those with a neo-Keynesian or socialist matrix. However, instead of making efforts to produce some *euthanasia of the rentier*, taking up the famous expression of Keynes, the measures taken were paradoxically aimed at accelerating neoliberal recipes.

To increase liquidity in the financial markets, certain governments decided to focus on facilitating the population's access to credit granted by private entities. The best example was the US government's effort to redesign its financial system. While measures were taken to control the issuance of derivatives by large banks and finance companies, efforts were made to develop ways to offer access to financial products at low cost and in the simplest possible way.

In 2012, the government launched a plan called Jumpstart Our Business Startups Act. Its main objective was to encourage startups that offer financial services, with minimal bureaucracy to a broad audience, or, precisely, "to increase American job creation and economic growth by improving access to the public capital markets for emerging growth companies" (cited by Arner et al., 2015, p. 17). In fact, the government wanted to achieve two goals in one blow. On the one hand, it was expected that such companies would generate occupations for the various professionals specialized in finance who were unemployed. On the other hand, they wanted to provide credit to a large number of people whose living conditions were precarious, not through the State's social programs, but through the financial market itself, which, at that time, had low liquidity.

In practice, the aim was to leverage the financial market through the little money of thousands of new investors. It was no coincidence that, since then, we have witnessed the growth of digital platforms that deal with financial products of different natures: crowdfunding platforms, digital banks, credit and debit payment machines for small entrepreneurs, equity investment platforms (day trade), cryptocurrencies, tokenization, among other services offered to individuals. Taken together, such companies would characterize a new financial market sector, fintech 3.0 (Arner et al., 2015; Nicoletti, 2017).

To understand the specifics of fintech 3.0, I sought to access Bitcoin users through comprehensive individual interviews¹¹. In effect, this research technique helped me understand the role that financial firms' application interfaces play in directly connecting individuals to the complex financial market.

To buy Bitcoins, for example, one just needs to open an account on an exchange (digital platform for buying and selling cryptocurrency) through a website or a smartphone application. By completing a brief registration, the blockchain produces a digital identification of the user's wallet, who can purchase the cryptocurrency by transferring national currency directly from their bank account to their digital wallet.

In an interview for this research, Laura appears as a typical investor at fintech 3.0: a middle class woman around 40 years old, living in a large urban center in Brazil, with little experience in the financial market¹². Her willingness to invest in Bitcoins was due to the knowledge she had through a friend who speculated with this asset. She described her interaction with the digital platform through which she invested in Bitcoin:

I used both the mobile app and the *exchanges* site ... but I preferred the sites because they have more thorough information. The graphics they show can have different complexities, from beginners to professionals, there are various settings. (Interview given on June 11, 2020)

Transactions are monitored by the investor through the exchange's website and/or application. Transactions are automatic, made by platform algorithms, which assume the role of financial market agents (*brokers*), as described by the same investor:

Quotations and transactions are automatic. On the site there are people wanting to buy and people wanting to sell, and these people carry out transactions between them, through buy or sell orders. The platform earns from the fees it charges for each transaction, but users have no contact with miners, for example. (Interview given on June 11, 2020)

¹¹Between June 11, 2020 and April 10, 2021, fifteen comprehensive one-on-one interviews were conducted with Bitcoin users. The objective of the interviews was to know the practices of using cryptocurrency and users' impressions about their interaction with the financial market. As postulated by Jean-Claude Kaufmann (2013, p. 47), the comprehensive interview is a qualitative research method and aims to understand the rationality of social actors, how they organize and justify their actions; there is no search for some truth of the acts behind the speeches they utter. Despite the desire to have carried out a closer monitoring of the practices of Bitcoin users, the research period coincided with the Covid-19 pandemic, which made closer contact with the interviewees, to say the least, technically and ethically impracticable. The interviews followed a semi-structured script and were conducted through email or remote meeting applications (Zoom, Google Meet or WhatsApp). In order to protect the identity of the interviewees, fictitious names were used in the quotes.

¹²In the interviews carried out for this research, 60% of the interviewees had no experience in financial investments (except for the purchase of foreign currency for occasional trips abroad). A percentage of 30% had as their only experience the purchase of public bonds from the Brazilian State through the *Tesouro Direto* system. The rest had some experience in the financial market, especially in the stock exchange (stocks).



Commenting on how her friend traded bitcoins, Laura stressed:

My friend was a self-employed investor, he invested his own money on several different platforms and spent his days (nights and sometimes early mornings) buying and selling these coins. It's like the stock exchange, yes. Today the Bitcoin variation is closing at -5.34%, it's a lot for 24 hours. If you make the right moves you can make a lot of profit. (Interview given on June 11, 2020)

The description is interesting in that it points to a typical fintech 2.0 man-machine assemblage, as described in the work of Karin Knorr-Cetina and Urs Bruegger (2000) when talking about market makers (derivatives selling agents) of Swiss Bank. As they described, these agents worked coupled to five television screens to monitor market information:

Most conspicuous, however, are the up to five computer screens confronting each trader, displaying the market and serving to conduct trading. When traders arrive in the morning they strap themselves to their seats, figuratively speaking, they bring up their screens, and from then on their eyes will be glued to that screen, their visual regard captured by it even when they talk or shout to each other, and their body and the screen world melting together in what appears to be a total immersion in the action in which they are taking part. The screens in turn capture the market, which exists only on screen, where it comes as close as one can get to the ethnomethodological sense of a locally produced phenomenon. (p. 146)

This quote makes it possible to understand an important specificity of fintech 3.0: by becoming an *investor* through their personal communication devices, each individual resembles financial market professionals, who connect with information technologies all the time so as not to miss opportunities of profit. In other words, fintech 3.0 reproduces, on the individual's scale, the practices and values of the global financial market. Thus, a way of living is incorporated into individuals' daily lives and, ultimately, a fundamental ethics to the legitimacy of financial capital through information technologies.

It is true that the implementation of Bitcoin would end up exposing the aporias of the ideology that led to the development of cryptocurrencies (Paraná, 2020). The use of bitcoins for illegal activities, such as the purchase of drugs and weapons through alternative computer networks, and fraud, with the bankruptcy of the MT Gox platform being the most emblematic case, called into question the objective of using such technology as an effective currency competitor to sovereign currencies¹³. Nevertheless, the proliferation

¹³For some economists, cryptocurrencies should not even be considered currencies properly, as they do not have the capacity to settle contracts in a national jurisdiction (Gala, 2018; Paraná, 2020). It would, therefore, be an asset for the purpose of mere financial speculation.

of new cryptocurrencies and extreme appreciation of Bitcoin in recent years reveals both the strength of social mobilization of anarcho-capitalism and the penetration capacity of FinTech 3.0 in certain sections of the population.

FINTECH 3.0 AND THE MASSIFICATION OF THE INDEBTED MAN

It shows, besides, that you are mindful of what you owe; it makes you appear a careful as well as an honest Man; and that still increases your Credit. (Franklin, cited by Weber, 1920/2004, p. 44)

In a word, money – the circulation of money – is the means for rendering the debt infinite. (Deleuze & Guattari, 1972/1983, p. 250)

The expansion of the offer of financial market products through digital platforms has consequences beyond the generalized access to credit and the consequent increase in the economy's liquidity. It also presents itself as a device of subjectivation (ethics) and creation of social relations (governmentality), since, as certain aspects of social theory sustain, capitalism is not restricted to utilitarian commercial exchange operations, but produces its own modes of subjectivation and circuits of affections that promote the functioning and reproduction of the system. Heir to this line of thought, Maurizio Lazzarato (2017) advances the hypothesis that the model of subjectivity of contemporary financial capitalism, or even the new spirit of capitalism, is the *indebted man*.

His thesis takes up the discussion by Deleuze and Guattari (1972/1976) on debt as a structuring force in social relations. This hypothesis is based, in turn, on the rereading that these authors made of Nietzsche. In *The Genealogy of Morals*, Nietzsche (1887/1998) opposed liberal economic theory by looking at the origin of responsibility – for what is good or bad, for guilt – the foundation of the idea of *value*, which would only later be appropriated by economic discourse¹⁴. Contrary to the liberal assumption that man would naturally be prone to exchange and trade, the philosopher would point out the *debt* and the inherent *morality* as the pillars of subjectivation and, by extension, of social relations. Notably in his second dissertation, he maintained that in the supposed original societies – what he called the *prehistory of man* – the milestone of evolution that separated man from other animals was the development of memory inscription techniques in individuals (mnemonic techniques), thus creating a relationship of collective responsibility.

This made man “an animal that can make promises” (Nietzsche, 1887/1998, p. 47), that is, a being whose promise is the retribution for the *debt* that represents

¹⁴As Lazzarato (2017) reminds us, “the political economy that ‘appropriated’ the category of ‘value’ by making it derive from exchange, To criticize economic and moral values, it is necessary that ‘the very value of these values must be called into question’ [Nietzsche’s quote]. It could not be further from Adam Smith’s theory” (p. 81).



his existence to the ancestors of time immemorial and their representatives among the existing ones (spirits, plants, totemic animals). To do so, however, it was necessary to create a mnemonic technique for inscribing the memory of debt on the individual's body itself. In oral societies, the memory of debt is inscribed on the body through pain – lacerations, tattoos, scars, a system of cruelties that makes memory indelible – which generates in the psyche a relationship of reverence, or rather, hierarchical relationships between *creditors* and *debtors*¹⁵ – the equivalence between damage and pain that is transmuted into submission by the debtor to the creditor.

¹⁵This understanding is what makes Deleuze and Guattari (1972/1983) state that “Society is not exchangeist, the socius is inscriptive: not exchanging but marking bodies, which are part of the earth.” (p. 208).

¹⁶As translators and commentators on Nietzsche's work underline, it is essential to observe the play on words that the author uses, since in German, *schuld* means both *guilt* and *debt*, just like its derivative adjective, *schuldig*, means both *guilty* and *indebted*.

Nietzsche (1887/1998) would also add that, in European society, Christianity had taken this logic to a second stage: with the invention of writing, it was possible to internalize the memory of the existential debt, through guilt (*schuld*, in German) for the original debt (*schuld*, in German)¹⁶. Max Weber (1920/2004) would deepen this idea, connecting Protestant ethics to what he called the *spirit of capitalism*, that is, the need to internalize a historically specific normative disposition to justify the systematic accumulation of money through rationalized labor.

In *Anti-Oedipus*, Gilles Deleuze and Félix Guattari (1972/1976, pp. 241-244) resumed the Nietzschean thesis, recalling that, if in primitive societies debt determined side alliances between different lineages or clans, it was extinguished every time marriage or *contradom*, initiating a new debt. The debt would thus be *finite*. With the advent of the State, however, the debt shifts. This would be controlled by a despotic machine that would impose on its subjects a debt in relation to the despot, who presented himself as a transcendent being to that society. Debt was thus transmuted into *infinite* and *transcendent*, to be paid no longer to the earth, but to a transcendent being through a sovereign currency that flows through taxes¹⁷.

¹⁷Hence, the analysis of money cannot be isolated from taxes, as liberal theories do. As Lazzarato (2017, p. 32) observes: “if ‘money is always distributed by an apparatus of power’, its circulation and rotation, as well as the equivalence of goods/services/ money, are established through tax, which makes money a general equivalent.... Currency is inseparable not from trade and work, but from tax – an instrument of power that is foreign and independent of the market”.

With the advent of capitalism and its disenchantment with the world, the debt continued to be *infinite*, as citizens' lives seem to depend on the State's ability to provide security against some supposed state of war of all against all. Nevertheless, it becomes *immanent*, as the State no longer represents a transcendent entity, but a machine for managing the population's life so that it can be productive for capital. Here, what might be called Deleuze and Guattari's *theory of money* (Guéron, 2017) comes into play. For both authors, in capitalism, money would have a double dimension: at a fundamental level, it is a means of exchange that makes up the purchasing power of workers, but this dimension would be subordinated to another, in which currency is capital-money that determines the effective purchase value of the exchange-money and aims to produce more capital-money (Deleuze & Guattari, 1972/1976, pp. 372-375).

Coupled with taxes and monetary policies, it is the capital-money that installs the infinite debt to capital as the structuring force of social relations. Hence, it can be said that “credit money expresses ‘the power of capital’, while exchange money expresses the ‘impotence’ of wage earners” (Lazzarato, 2017, p. 117). Instead of freeing individuals from the nominal debt, capital-money imposes on the *socius* an infinite debt to capital, mediated by the welfare state: all the money generated with work flows back to the payment of taxes and consumption of goods and services, therefore, the reproduction of the system itself.

Deleuze and Guattari (1972/1976) dealt with the logic of the welfare state, which had a certain strategy of income redistribution in social policies, therefore, exercising the mediation between the interests of capital and labor. Maurizio Lazzarato (2017) would take up this thesis to think about neoliberal capitalism. He argues that neoliberalism represents another moment of capitalism, in which the ascendancy of finance capital over other forms of capital (industrial and commercial) took place, making the state’s stabilizing function obsolete and thereby the debt of the civil society would pass directly to finance capital. After all, the pillar of neoliberal economic policies resides in the privatization of public goods and services and the concomitant facilitation of private access to credit, which is debt, as a lever for social life, in place of the previous social policies that distributed income.

As several critics have argued, if there is anything new about the so-called neoliberalism, it is that it is characterized by abandoning the typical belief of classical liberalism that it would be enough to restrict the action of the State in social life for *Homo oeconomicus*, the rational subject in relation to purposes, naturally predisposed to commerce, materialized. For neoliberals, the willingness to *undertake* must be institutionally built, from the establishment of policies that encourage individuals to take *risks* to obtain greater profit possibilities or, in other words, it becomes necessary for each individual to conceive of themselves as a company for which he is responsible (Boltanski & Chiapello, 2009; Dardot & Laval, 2016; Foucault, 2008). Hence, institutional transformations take place in order to make individuals distrust the policy’s ability to solve their daily problems and seek a substitute in the market for their survival.

By carrying out this movement, individuals assume responsibility – or rather, blame (*schuld*) – for managing their finances. Conceiving oneself as a company that needs to innovate to triumph in a highly competitive market, each individual must seek credit to undertake (valuing their human capital) and, for doing so, assumes certain indebtedness (*schuldig*), which carries the risk of failure. It should be remembered that indebtedness always entails the interiorization of a moral, because, as Nietzscheanly reminds Lazzarato (2017), “the creditor/debtor



relationship expresses the activity of training and the formation of subjectivity, before having an ‘economic’ meaning in the modern sense of the term” (p. 82).

The proof of the subjectivation of morality established between creditor and debtor is found in the insistent axiom of defense of fiscal *austerity* for both the State and the families. As Mark Blyth (2017) insists, the fiscal austerity argument is a moral philosophy rather than an economic theory, as the state’s accounts are not equivalent to those of families – they cannot issue currency, set interest rates, collect taxes, launch bonds of their debts to finance themselves etc. However, such an argument serves to constrain the State to withdraw from its social functions while forcing individuals to adopt a budget policy to take care of their private accounts.

The growing indebtedness of individuals makes it necessary to incorporate risk management techniques into the domestic economy. Therefore, it is not surprising that the financial market is presented as an ideal model for managing social life. After all, its *raison d’être* is risk management. The result is the financialization of everyday life (Martin, 2002), whose paradigm is the derivative¹⁸.

Contemporary derivatives are financial products created from mathematical formulas based on probabilistic theories. This turns them into a device that allows the risk associated with each contract to be decoupled from the underlying assets or future events that support the original documents (Bryan & Rafferty, 2014; Lépinay, 2011). Through Artificial Intelligence (AI), several insurance contracts are gathered, which are divided into numerous fragments, technically labeled as *attributes*, to then be condensed into financial products under various titles (CDO, Swaps, Options, among others) which, however, perform the same function: transferring the debts of others, promising low risk to creditors. As each financial product does not depend on compliance or non-compliance with a certain insurance, an idea is generated that the derivative is a risk product that does not contain risk for investors, since it became technically possible to transfer debts to third parties *ad infinitum* (Varoufakis, 2016). For creditors, the debt is never nominal, as it does not belong to them.

Some authors argue that the derivatives technique has given rise to new methods of labor management, something that has come to be called the *social logic of derivatives* (Arnoldi, 2004; Brayan & Rafferty, 2014; Martin, 2013). As neoliberal policies withdraw social rights, employment, housing, education or health contracts, among other traditional services, have followed the model of decomposing each agreement into attributes, which can be charged separately. Even the workforce is no longer sold entirely: the intermittent labor category allows the worker-enterprise to provide a service for a specified period of time to another legal entity. Such *fractalization of working time* (Berardi, 2018) implies

¹⁸Derivative is a type of risk insurance, being a contract in which future payments are established, whose values are calculated based on an underlying asset, such as the price of a stock, commodity, financial instrument or occurrence of an event. Its objective is to protect economic agents against price fluctuations over time. See Arnoldi (2004), Bryan and Rafferty (2014), Lépinay (2011), Martin (2013).

a whole new subjectivity on the part of the worker, who starts to be conceived as an asset, and new forms of social relations – social isolation.

Fintech 3.0 furthers the financialization of everyday life by offering financial services to individuals in an unprecedented way: through their own personal computer or *smartphone*, anyone can open a digital account, purchase and sell financial products and services, obtain a credit card or trade bitcoins. It is not necessary to go to a bank or exchange office to do business, thus escaping from the traditional bureaucracy of the great financial system and the collection of taxes by the government. However, unlike fintech 2.0 products, which dealt with large investors, trading debts of others with each other, fintech 3.0 is aimed at identifiable individuals. This is another decisive point: such information companies develop devices that link the debt incurred to individuals through their digital devices.

It is at this point that the materiality of digital media proves decisive. The memory capacity and its security systems serve to digitally record their debts in individuals. Commenting on the credit card, Lazzarato (2017) notes that:

The creditor/debtor relationship is inscribed on his credit card chip and, instead of disappearing, he carries it in his pocket, as if he were carrying his relationship to finance with him. Every purchase is a financial act that mobilizes credit and debt. The credit card opens the doors of the consumer society and, by requesting, encouraging and facilitating the purchase, it involves the consumer/debtor in the vicious circle of excitement/ frustration. The condition and consequence of the infinite repetition of the act of consumption is infinite debt. (p. 68)

Now the cell phone or notebook has become the bank branch of digital banks (Nubank, C6 Bank), connecting to digital wallets (PicPay) and financial education applications (Mobills, Wallet), which contain the financial data of each user. Digital platforms connect to each other, sharing each user's financial data. In this scenario, cryptocurrencies promise a deepening of surveillance over individual debt via blockchain: this registration system can generate perfect control over each transaction and each user's debt.

FINAL CONSIDERATIONS

Ultimately, it's not about predicting the future of Bitcoin. It could either consolidate itself as the main cryptocurrency in the market or be surpassed by competing technologies, such as Libra, of Facebook Inc., or, at the limit, it could even disappear in the near future. Such a cryptocurrency matters,



fundamentally, because (1) it has proven that cryptocurrencies are technically possible to operate according to strict political values and (2) it has developed a technology (blockchain) capable of allowing the creation of other financial assets, as it generates an artificial rarity in the digital environment. It is no coincidence that, despite the controversy surrounding Bitcoin, even central banks in some countries have presented guidelines for implementing their own cryptocurrencies¹⁹ and the blockchain is being used for various purposes, such as the production of smart contracts or tokenization (the replacement of real data by equivalent data, with the same format and protected by an encryption key).

¹⁹In mid-2021, central banks in the UK and Brazil introduced guidelines for implementing digital versions of their sovereign currencies.

The ability of cryptocurrencies to operate as a system for archiving, processing and distributing personal financial data proves to be decisive for contemporary capitalism. It should be remembered that the digital economy is an economy of exploitation of personal data (Srnicek, 2018). Currently, debit and credit flows can be stored on digital platforms, which monitor the level of individual indebtedness and, depending on the case, can offer either services from a credit company, in case of acute debt, or investment, in case there is liquidity in the user's account. Furthermore, such data can be traded on the financial market, in the form of derivatives. What is negotiated between digital platforms are, more than sums of money, individual financial movement information. Instead of waiting for demand to seek financial services, algorithms can offer platform users a variety of products, which entangle them in an ecosystem of financial products. That is why it is possible to state that fintech 3.0 becomes an individualized debt registration system. Far from being *disruptive* – to use a native term – in relation to financial market practices, fintech 3.0 promises to take you to heaven, extending its logic to each individual of an entire population. ■

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