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Financialised digitalisation, digitalised financialisation

The inseparability between technological domination and financial hegemony in contemporary capitalism

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While capitalism retains persistent general and abstract defining characteristics, it is not rigid or unchanging throughout history. Instead, it transforms and evolves. As the most revolutionary mode of production up to its time, capitalism thrives on constant self-revolution, as elucidated by Engels and Marx (2015), Schumpeter (2008), Polanyi (2001), and other thinkers. Mobilising typical aspects, processes, and structures of other modes of production is a resource that capitalism has historically utilised to perpetuate and reshape itself in response to contradictions and limitations. This does not alter the fact that labour exploitation remains a pervasive social reality, profit pursuit is an intrinsic goal, and the valorisation of value, as posited by Marx (1990), remains a central and structuring element of current economic and social dynamics. Nevertheless, while we persist within the capitalist mode of production, there are discernible and consequential shifts occurring that warrant careful examination, as they may signify a transformative phase, altering the organisation and disposition of capitalist relations. The new reproduces itself within the old, and vice versa. Comprehending the nuances of this dialectic process demands meticulous attention and intellectual rigour. This chapter seeks to contribute to such an effort, questioning discontinuities within continuities of capitalism. Adding to the impetus and rationale

for (re)theorising capitalism, it contends that we are witnessing a phase transition in recent decades. Capitalism is evolving into something markedly different from its previous incarnations.

Just as Keynesian-Fordist welfare capitalism differed from liberal capitalism, which, in turn, diverged from contemporary neoliberal and financialised capitalism, I hypothesise that we are now traversing another threshold into a distinct form of capitalism, still to be defined. This shift is fundamentally driven by the advanced digitalisation of social processes and interactions, suggesting an alternative qualitative mode of operation within socioeconomic relations. If this is to be the case, how and from where to investigate this new phase, moment, or configuration of capitalism? How can we concretely and empirically frame social relations that underpin it? How can we elaborate on the core transformations around digitalisation?

Addressing these questions, I first theoretically characterise capitalism based on two of its current fundamental dimensions, interpreted here through a macrosocial lens: financialisation (Fine, 2014, 2022) and neoliberalism (Harvey, 2005; Duménil and Lévy, 2011). My analysis is rooted in the intersection of these processes, facilitating a deeper understanding of the overarching context within which the phenomena of digitalisation (Matthess & Kunkel, 2020; Gradillas & Thomas, 2023) emerge. From this line of reasoning, I will define financialisation, neoliberalism, and digitalisation along the text in connection to each other. Conceptualising these processes in an interdependent fashion and exploring the theoretical consequences of such crossovers is the main contribution aimed by the text. Assessing these crucial phenomena will allow us to better visualise the complex interplay between technological dominance and financial hegemony in contemporary social (re)production, which in turn adds new elements to the investigation of the mentioned transition to a new stage within capitalism spearheaded by digital transformation.

Although building from and bringing attention to different empirical phenomena, this is essentially a theoretical text. The invitation is to engage in a relational and integrative rereading of contemporary capitalism, considering the overdetermination (Althusser, 2005) between financialisation, neoliberalisation, and digitalisation. Overdetermination, in Althusserian terms, serves as the anchor for the meso-level theoretical inquiry cutting across the entire chapter. It refers to how the contradictions within each social practice shape the overall social structure and, in turn, are influenced by it. This concept affects the dominance, subordination, antagonism, and non-antagonism among contradictions within the dominant structure of a society at any given time. Specifically, overdetermination means that a contradiction reflects its existence within the larger social context, including the influence of other contradictions within that context. It also reflects the uneven development of contradictions within the complex whole of society (Brewster, 2005, p. 253).

From this approach, the conceptual definition of financialisation, neoliberalisation, and digitalisation in relation to each other adds a more nuanced perspective to social science debates about capitalism, as per the objectives of this edited volume. This genetically interdependent conceptual development will then finally lead us to the

definition of financialised digitalisation/digitalised financialisation, delineating the inseparability between technological domination and financial hegemony in contemporary capitalism. In the later sections of the text, as an illustration of these theorisations, I engage in some reflections on the relationship between finance and technology, drawing from insights gleaned from recent financial innovations such as cryptocurrencies, blockchain, and NFTs—subjects I have investigated in recent years (Paraná, 2020; Campbell-Verduyn & Paraná, 2021; Rotta & Paraná, 2022). Finally, I will conclude by summarising the main arguments and how they contribute to the (re)theorising capitalism endeavour.

Financialisation, neoliberalism, and digitalisation

The capacity of capitalism to transform itself to maintain capital accumulation can be illustrated by the massive structural changes it has notably undergone since the 1970s. As extensively explored by the literature¹, this period marks the exhaustion of the post-war dominant socio-economic paradigm, the Keynesian-Fordist accumulation regime, as described in the theoretical lexicon of French regulationism (Boyer, 1990). There has been much debate about these 30 golden years (1945–1975), their definition, meaning, rise, and fall, as well as the numerous crises that led to its demise (Chesnais, 2016): accumulation and profitability crises, fiscal crises, regulatory and governmental crises, crises of political and social legitimation, ideological crises (Streeck, 2011). This intricate process can be grasped by the image of a reservoir of transformations and contradictions that, amid intense disputes, will *conform* to a new type of capitalism in the coming decades. As crises are moments prone to (tragic) articulations of socio-economic dynamics, such exhaustion is later followed by a new reinvention of capitalism. No longer coordinated, planned, administered, or socially rooted as immediately before, the new capitalism evolved into increasingly flexible, with accelerated and deterritorialising flows (Deleuze & Guattari, 1983; Boltanski & Chiapelo, 2018).

If the institutional dimension matters, as is the case, the choice of the term *conformation* is here deliberate. It illustrates the joint and interrelated emergence of new political, regulatory, and sociotechnical forms characterising this new era of global capitalism. It is difficult to isolate which processes here are purely political, economic, institutional, material, or subjective. In practice, it is a multidimensional plot that articulates the local, national, and global, the subjective with the material, and the political and economic with the institutional. However, for the purpose of comprehensive organisation and method of presentation, it is convenient to focus on what seems particularly significant for the analysis I offer at this point: the global

¹ For Marxist regulationist perspectives on these structural socioeconomic changes, refer to Brunhoff (1986), Harvey (1989), and Jessop (2002). For an institutionalist perspective, see Blyth (2002).

productive restructuring and its correlation with the financialised rearticulation of capitalism beginning in the mid-1970s.

Importantly, this period underwent a new wave of technological advancement: the revolution of microelectronics, robotics, and information and communication technologies (Coriat, 1983; Lojkine, 1992). This led to increased mechanisation and automation of work processes and facilitated the emergence of networked companies, relocation and transnationalisation of production (Coriat, 1990; Shiller, 1999). These transformations were complemented by advancements in logistics, transportation, and particularly, the proliferation of corporate, governmental, and later, personal computing (Castells, 2010).

This is how the creative destruction associated with satellites, mobile telephony, computers and information networks began shaping the path along which the liberalisation of world trade, the establishment of new global value chains (Serfati, 2008; Sturgeon, 2009), financial and banking integration, and increasingly freely interconnected capital flows followed (Chesnais, 1996; Paraná, 2019). Moreover, this procession supported the dismantling of labour protections, capital controls, state discretion in various areas, and recurrent fiscal attacks against citizenship rights—for example in the practical form of austerity politics (Blyth, 2013; Fine & Saad-Filho, 2014).

We can now return to financialisation, defining it, beyond what has been mentioned, from digitalisation. This will enable us to further articulate technological domination and financial hegemony. Financialisation primarily involves unlocking the power of money and finance through the expansion of markets—viewed primarily as a domain of competitive discipline rather than free exchange—into broader areas of social life (Mollo et al., 2022; Bayliss et al., 2024). More abstractly, it refers to the relative autonomy of circulation from production, and the emergence of what Marx (1991) termed “fictitious capital.” For Marx, this process is not solely economic. The overall restructuring of capital accumulation to prioritise financial gain, meaning the alignment of the entire productive process with the goals, timelines, and operations of finance, carries far-reaching implications, influencing various aspects of social life, including culture, health, and education (Van der Zwan, 2014; Chiapello, 2017).² Developing from Marx’s conceptual logic, financialisation, as enhanced autonomisation of money from the productive process, indicates a highly advanced, unconstrained form of capitalism. Financialisation is the result of restrictions on and protections from capitalism being lifted.

Financialisation, is, furthermore, a process without which neoliberalism cannot be conceived, leading us another sensitive point. The successive rounds of privatisation, flexibility, austerity, and dismantling of regulations, protections and forms of political and social compensation, in different fields, are both the cause and consequence of this new social subjectivity. The subjectivity of the self-entrepreneur, who competes

² For numerous examples of such repercussions in Britain, refer to Bayliss et al. (2024). Furthermore, Cordilha (2021) addresses the financialisation of the public health system in the French case. For an extensive analysis of the financialisation of social policy in the Global South, see Lavinas (2020) and Lavinas (2017).

frenetically in physical or digital markets; of a “sacrificial subject,” as Wendy Brown (2015) put it, or the “indebted man” to recall the formulation of Maurizio Lazzarato (2012). The fact is that “neoliberalisation,” as David Harvey (2005) highlighted, “meant, in short, the financialisation of everything. This deepened the hold of finance over all other areas of the economy, as well as over the state apparatus and [...] daily life” (p. 33). Financialisation is, therefore, the material truth of neoliberalism as a phase of capitalism. Neoliberalisation and financialisation are, from this point of view, inseparable twins. Once again, this is a process that is both economic and political, something that is revealed with special clarity by its outcomes: a high concentration of income and wealth and, therefore, of social power in the hands of a few. It denotes an increase in inequalities and impoverishment of many, with consequent erosion of social cohesion and escalation of political conflicts (Chagas, 2023).

Financialisation, as the relative autonomy of the financial sphere from the productive sphere, is expressed in the corporate control over the monetary authority, the highly abstract and fictitious nature of the values created by financial markets,³ and the expansion of the power of financial operators to delimit the contours and directions of the economy by defining which agents, countries, or even what types of transactions can or cannot enter into financial globalisation. These processes cannot be conceived without the objective dismantling and subjective reprogramming of the world of work and collective political action. This is the bridge between neoliberalism as a rationale, practice of government, and subjectivation on the one hand, and neoliberalism as a form of management of the economic system on the other, as a regime of flexible accumulation. This advent, Pierre Bourdieu (2003) lamented early on, jeopardises the very condition of possibility for one of the most distinctive features of modern societies (and earlier forms of capitalism): the relative autonomy of the intellectual, cultural, and political fields. The neoliberalisation of social life subjects other social fields’ internal values and particular forms of legitimation to the tabula rasa of market discipline and the immediate economic profit drives (Silva et al., 2025 Forthcoming). In neoliberal-financialised capitalism, everything tends to level out through and from the economic field and its codes.

We can now delve into digitalisation and advanced automation, which stand out as characteristic features of our time. Amidst various catastrophes occurring in different domains, if there’s any dimension still holding onto hope for humanity’s future, surprisingly, it lies in technology. It would seem remiss to discuss contemporary capitalism without framing it as cognitive (Negri & Vercellone, 2008), digital (Shiller, 1999), informational (Castells, 2010), and more recently, as platformised (Boyer, 2021).⁴ Here, new sociotechnical imaginaries of crisis abound, with their ominous techno-

³ As evident in the emergence of new financial products, including financial derivatives, exchange-traded funds, high-frequency trading, and crypto assets (Paraná, 2019; Rotta & Paraná, 2022).

⁴ Thomas Poell, David Nieborg, and José Van Dijck describe platforms as “(re)programmable digital infrastructures that enable and influence personalised interactions among end-users and complementors, facilitated by the systematic collection, algorithmic processing, monetisation, and dissemination of data” (Poell et al., 2019, p. 3). Platformisation, on the other hand, refers to “the infiltration of platforms’ infrastructures, economic processes, and regulatory frameworks into various economic sectors and aspects of life. Drawing on the tradi-

political narratives, invoking both horror and fascination: from cryptocurrencies to private manned spaceflights, from artificial intelligence to scientific explorations on man-machine interface.

Moving forward, it is necessary to consider the unique encounter between financialised neoliberal capitalism and the informational revolution, manifested in the digitalisation and expanded platformisation of economic activity (Srnicek, 2017; Poell et al, 2019), particularly in the services sector. This facilitates the formation of financial-informational conglomerates, the so-called Big Techs, among the most highly market-valued companies globally. A notable novelty is that, for a significant portion of these technological giants, the bulk of profits arises from share price and financial assets appreciation rather than direct economic exploitation through their innovative business models. This not only reinforces the trend towards monopolisation but also necessitates these companies becoming monopolies in order to survive and function (Pagano, 2014; Rikap, 2021). Speculation underpinning these mega-corporations, alongside technological leverage, derives precisely from the control power amassed through vast consumer and worker information and their economies of scale—often associated with the network effect (McIntyre & Srinivasan, 2017) and the winner takes all model (Valente, 2021). That is, as the number of users increases, the system becomes even more valuable which, in turn, tends to attract more users, creating structural impediments to new entrants to the market.

Despite representing massive shifts within economic and political power relations, contrary to popular belief, digitalisation, platforms, and advanced automation, while impactful, have not yielded substantial gains in labour productivity or sustained economic growth (Benanav, 2020). Despite financial innovations amplifying financial valorisation, they seem incapable of much else. The so-called fourth industrial revolution (Schwab, 2016) has not ushered in the brilliant future promised in its rhetoric. Instead, digitalisation and platformisation, particularly in the services sector, have become the backbone of intensified exploitation, precariousness, and growing informality in the labour market—a realm marked by high technology paired with low quality of work and life (Scholz, 2016; Tubaro et al., 2020). It turns out that the new digital stage of capitalism is defined by the intensification of its exploitative nature through the lifting of protections and restrictions and the expansion of capital accumulation into new areas.

It is crucial to understand that digitalisation and financialisation are complementary dimensions of the same macrostructural change within capitalism in recent decades (Sadowski, 2020). Recognising this aspect enables us to see beyond low rates of global economic growth, sluggish productivity gains, deepening inequalities, and what is immediately apparent in the so-called secular stagnation (Rawdanowicz et al, 2014; Summers, 2015; Blanchard, 2023)—a context where, paradoxically, the power of money appears immense yet insignificant. Immense in prolonging and sustaining financial

tion of cultural studies, it represents the restructuring of cultural practices and perceptions around platforms" (Poell et al., 2019, p. 5).

profits but insignificant in driving employment, consumption, and production in the real economy.

The digital economy

Having established these broader (macro level) connections, we can now better characterise, at a middle or meso level, what is meant by the term digital economy. The term is somewhat ambiguous, having been defined in diverse ways, often contradicting each other.⁵ Considering the context provided earlier, the digital economy, as I refer to it here, encompasses a series of major transformations that have unfolded since the 1970s and 1980s, culminating in the first two decades of the 21st century. Specifically, I highlight the consequences of the revolution brought about by information and communication technologies (ICT), within a context marked by industrial-productive restructuring and the expansion of finance's power over production (financialisation). Adding to that, one can mention other significant political-institutional and cultural transformations related to the neoliberalisation of public life, as discussed earlier. It is within this framework that a new international division of labour emerged, alongside the intensification of economic globalisation, resulting in the establishment of new global value chains and their subsequent geopolitical consequences—such as the re-articulation of American hegemony (Panitch & Gindin 2013), the economic and political rise of China (Majerowicz & Paraná, 2024), and the formation of new geoeconomic blocs. Therefore, characterising the digital economy—this so-called new age of the global economy—focusing solely on the emergence of new technologies, without considering these structural dynamics and their evolution, is insufficient and erroneous.

With that in mind, we can now discuss information and communication technologies and their role in shaping this new phase of the world economy. More so than earlier technologies, ICTs are 'cognitive' technologies (or technologies of cognition). While this description could apply to nearly all technologies, ICTs are particularly effective in reshaping the spatial-temporal dimensions central to individual and social experiences (Harvey, 1989; Paraná, 2019). These technologies condense space into time, facilitating the acceleration and compression of flows, which, in turn, give rise to sociotechnical structures like digital networks and platforms. This enables the increasing codification of human interactions into binary data and information, further deepening the financialisation of social life (Zuboff, 2019). By enhancing control and surveillance, these arrangements make possible the technical decentralisation of nearly everything: work, production, circulation, consumption, financial, and communication flows (Paraná, 2024). However, such technical decentralisation only superficially and momentarily leads to the disintermediation of

⁵ For surveys and discussion of different definitions of the Digital Economy, refer to OECD (2020) and Williams (2021).

economic practices favouring supposedly distributive, self-governed, and cooperative sharing-economy models. Within a capitalist leitmotiv, the digital economy enforces a brutal concentration of processed information and its political-economic effects. The so-called disruptive processes of digital transformation, where third parties and middlemen are removed from information transaction processes, in fact, rapidly replace old economic and social actors for new ones, reintermediating what was just previously disintermediated (Langley & Leyshon, 2021; Hendrikse et al., 2024). The historical evolution of the internet from a decentralised, non-monetary commons-based communication system into an enclosed webspace controlled by tech giants and big corporate platforms serves as the supreme example (McChesney, 2013).⁶

As I have argued before (Paraná, 2024), the informational co-presence and the rapid acceleration of flows connecting production, circulation, and consumption create a convergence between the pressures of technical-operational decentralisation and the increasing concentration of economic, political and sociotechnical power. This results in a growing divide in the labour market and the expansion of monopolistic tendencies within the platform economy, driven by scale and network effects (Valente, 2021). More specifically, digitalisation supports the growing independence of finance from production, a key aspect of financialisation. By linking various locations and social spheres, speeding up processes, and capitalising on economic opportunities from data and information, digital technologies infuse every socio-economic process they engage with financial speculative dynamics. This process gives rise to numerous social tensions. That includes increased inequalities, disruptions in the labour market due to advanced automation, data privacy and data security issues, challenges to technological, fiscal, and financial-monetary sovereignty of nation-states, frictions in global value chains, transformations of the public sphere with its disorganising political impacts, and geoeconomic conflicts.

Once characterised the main features of the digital economy, we can now delve into the strategic resources of this new techno-economic paradigm (Perez, 2010). These are the computational processing capacity, production, storage, and cataloguing of data on an exponential scale, connectivity technologies and the effective combination of these factors through algorithms, programmes, and applications. Equally important is the vast physical infrastructure supporting it: fibre-optic cables and networks, antennas, satellites, routers, microchips, mechanical components, data and processing centres, and new energy sources, comprising a large “global system of machinery” (Majerowicz, 2021), distributed across different sectors, companies, and countries. These sociotechnical infrastructures, without which global society is no longer able to function properly, demonstrate that even in a supposedly virtual world,

⁶ As I elaborate on in the following section, the internet is currently transitioning from a previous non-corporatised commons-oriented stage to a stage dominated by platformisation, which intensifies its monetisation. In simple terms, capitalist appropriation is expanding into areas that were previously not subject to such appropriation. Just as private property encloses common lands, the digital economy is undergoing a similar process. The same is true for cryptocurrencies: while some enthusiasts may have initially viewed them as a democratic tool, they have evolved into a realm where exploitation, speculation, and consequently financialisation are dominant.

the spatial and territorial dimensions of power remain central (Graham, 2018; Qiu, 2023). These evolving developments extend rapidly across various fields—civil and military, productive, financial, entertainment, and communication—leading some (Schwab, 2016) to characterise it as a new industrial revolution, where boundaries between the online and offline worlds, and between physical, biological, and digital spheres, become even more blurred.

Cementing already existing international division of labour and global value chains, the global south enters a dependent position into this dynamic (Jin, 2013; Couldry & Mejias, 2019). Let us take Brazil, a significant emerging power, as an example. Despite having the sixth-largest population in the world and ranking as the 9th-largest economy, the country represents the world's fourth-largest consumer market for digital goods and services (Pochmann, 2023). Brazilians are primarily (and disproportionately big) consumers of digital services and providers of cheap information, data, and digital labour. For this reason, even with such a thriving digital market, they have inserted themselves into this dynamic in a still subordinate manner, at the expense of the growing economic complexity and other economic opportunities that this new economic paradigm could bring them.

Some developments in the digital economy considering the relationship between finance and technology

Having understood that, we can now return to our guiding questions: How and from where to investigate this phase, moment, or configuration of capitalism broadly and abstractly defined here? How can we concretely and empirically frame the relationships between neoliberalism and financialisation? How, within this framework, to elaborate on the transformations around digitalisation?

A promising approach involves identifying research objects strategically positioned within such connections to investigate the tendencies and countertrends they uncover. That is, research objects characterised by an especially contradictory or paradoxical nature. The idea is that these objects, situated at the frontier or limit, may be less obvious in terms of their definitions and characterisations, enabling us to pose new questions and make new discoveries, thereby deepening our understanding of capitalism in our time. More objectively, the plasticity of the reconfiguration of the circuits of capital in the face of the role of credit, on the one hand, and of scientific-technological development, on the other, as sources, at the same time, of expansion and crisis of the capitalist system in the face of the limits that its development imposes on itself, appear, at this juncture, as a particularly fruitful research endeavour.

Marx says in the third volume of *Capital* (1991) that “capitalist production constantly strives to overcome these [its] immanent barriers, but it overcomes them only by means that set up the barriers afresh and on a more powerful scale” (p. 358). In this regard, credit and finance, on the one hand, and science and technology, on

the other, perhaps configure the two main levers of contemporary capitalism. This has been particularly evident since the great financial crisis of 2008,⁷ when a massive influx of cheap money into the beleaguered banking sector bolstered tech-oriented venture capital (Srniczek, 2017). Finance and technology are ways to discount the future in the present, of expanding the limits and barriers to valorisation, of recomposing, reorganising, and advancing productive forces (Marx, 1991; da Motta e Albuquerque, 2023). Hence, it is basically around this articulation that I first investigated what I called Digitalised Finance (the relationship between the development of information and communication technologies and the process of financialisation of the world economy), the digitalisation of capital markets and their social consequences (Paraná, 2019), and then the digitalisation of money and monetary-financial innovations such as Bitcoin (Paraná, 2020).

Cryptocurrencies may serve as illuminating examples of this development. Bitcoin, which came into existence in 2009 (Golumbia, 2016), is likely the most recognised and established cryptocurrency. As reviewed by Rotta and Paraná (2022), “the consensus in the extant scholarship is that Bitcoin is neither money nor currency with general social acceptance but is rather an asset mainly used as a vehicle for speculative investments” (p. 3). It also functions as a limited medium of exchange. Due to its strong demand for transferring payments and settling transactions across international borders, as well as its use in online transactions, speculation, tax evasion, wealth protection, and ransomware payments, Bitcoin has steadily gained importance in the modern economy. Cryptocurrencies also embody the technological and financialised aspect typical of the new form of digital economy. But are cryptocurrencies really innovative and significant when it comes to retheorising capitalism more deeply, and if so, how?

The starting point for such an understanding is the correct characterisation of its nature. Cryptocurrency is not money and there is nothing to indicate that, if its current configurations are maintained, it will be. Money, in the full sense of the term, is the socially accepted and recognised vehicle for abstracting wealth, the general equivalent, the universal mechanism for representing and realising value (Brunhoff, 2015). As such, it implies political, social, and economic prerequisites that no cryptocurrency is or will be able to meet in advanced capitalism, at least not in its current form of existence: private, restricted, unregulated, environmentally unsustainable, and highly volatile (Paraná, 2020).

Cryptocurrency is, at heart, a digital commodity, that is, an artefact produced digitally to be exchanged on the market for profit.⁸ The significant point, however,

⁷ For further discussions of the 2008 crisis as a watershed moment in the contemporary economy, refer to Blyth (2013) and Tooze (2018).

⁸ For a conceptualisation and discussion of cryptocurrency as a commodity, refer to Rotta and Paraná (2022). By extending the Classical Political Economy approach and the New Interpretation of the labour theory of value (and rent) to the domain of digital commodities, we demonstrate that Bitcoin is a digital commodity with value but no value-added. We show that both the production of and speculation in Bitcoin draw from the existing global pool of value-added. We argue that Bitcoin mining is an automated reproduction process that requires no direct (living) labour and, as such, generates no new value. Across sectors, Bitcoin mining redistributes

is how this digital commodity is produced, the mechanism that allows it to conform to this variant of a digital thing. Here lies the main novelty that this technological innovation brings about: the technical feasibility of an operationally solid form of private ownership of digital things without the need for direct legal action by the state. That is, the possibility of reproducing in the virtual world the rivalry of use and ownership—as well as the eventual scarcity—typical of physical goods. It is, therefore, a technology of disintermediation (meaning the elimination of monetary and financial intermediaries, third parties, or middlemen), which allows information goods to be locked up and privatised in a completely new way. All its other functions, uses, and forms of existence are subject to this technical feature—as a means of exchange in restricted spaces, as a speculative asset, as financial innovation, and as an enabler of illicit businesses, among others.

Intangible products, such as information and knowledge, are challenging to fully encapsulate within the framework of market logic and private property. This challenge arises because, once created, the barriers to access and the costs of reproducing these goods are typically minimal (Rotta & Paraná, 2022). Since the widespread adoption of the internet, digital enterprises have grappled with this issue, experimenting with various models and, where possible, relying on state intervention to enforce private property rights over intellectual, cognitive, or informational assets. This ongoing conflict sees new forms of control constantly met with corresponding acts of resistance. The platformisation of the internet, which confines it within corporate-controlled spaces of flows and interactions, along with the rise of asset tokenisation,⁹ represents significant strategic advancements—especially when combined—towards the necessary enclosure and privatisation required to fully extend the logic of capital into the digital-information realm (Paraná, 2024).

It is true that cryptocurrencies, due to their anonymous and unregulated nature, represent an attractive vehicle for illegal and criminal activities, currency evasion, and tax avoidance, contributing to reinforcing the parallel economy of wealth hiding and tax havens that has advanced enormously in the last decades (Zucman, 2015). It would be equally correct to characterise them as another form of speculative asset, which, in the context of the financialisation of everything, rises and falls in price to the taste of the search for quick and deterritorialised profits, in a global macroeconomic situation that encourages and supports such kinds of economic behaviour. Nor would it be a mistake to characterise it as another technical-institutional innovation in the financial world, with important impacts on it, even with regard to the role of financial

pre-existing wealth and value-added, while miners with greater computational power compete to appropriate mining profits within the blockchain. The Bitcoin blockchain thereby creates rivalry in both the ownership and use of the digital commodity through non-legal mechanisms. This approach, we believe, can be further extended to the broader domain of automated digital commodities that are reproducible without the expenditure of direct, living labour.

⁹ Asset tokenisation involves converting the ownership rights of an asset into a digital token, which can then be stored, sold, and exchanged on a Blockchain. These tokens represent the ownership of the original asset. Asset tokenisation enables direct peer-to-peer trading of conventional and non-conventional assets, eliminating the need for intermediaries.

institutions and states in monetary-financial dynamics. However, for this all to be valid, cryptocurrencies must first be a new form of technical-operational support for the private ownership of digital products. While the aforementioned aspects are certainly important, this is the central element. Here lies the fundamental milestone of this new round of technological leverage in the digital economy: the search for new businesses, new frontiers for the private appropriation of what tends to be captured with greater difficulty by commodification processes, that is, art, knowledge and information—also encompassing software and platforms, games and networks.

The creation of spurious new forms of digital products can be additionally illustrated by the rise of the NFT—the Non-Fungible Token (Sadowski & Beegle, 2023; Crandall, 2023), that can be directly related to cryptocurrencies. NFTs are cryptographic assets residing on Blockchain networks, serving as digital representations of unique items such as artworks, digital media, or content. Each NFT functions as an immutable digital record verifying ownership and authenticity of the associated asset, whether tangible or digital. These tokens possess inherent features, including cryptographic validation, exclusivity, and seamless transferability. The process of NFT creation, known as minting, entails executing a blockchain transaction detailing token specifications, which subsequently triggers a smart contract function to instantiate the token and assign it to its owner. NFTs can represent a diverse array of assets, spanning digital art, collectible items, multimedia content, and event tickets.

It is crucial to understand how the digital process of enclosure and commodification unfolds in practice, particularly concerning bitcoins and NFTs. This process is enabled by Blockchain, a pivotal technology in cryptocurrencies. Blockchain facilitates collaborative, technically decentralised, public, and auditable recording of information, removing the need for a central transaction settler and bookkeeper. This distributed and collaborative self-management within a network, based on the computing power of its participants, forms the basis for cryptographically recording certain digital information as unique—such as a unit of Bitcoin being non-reproducible. This capability allows for the proliferation of tokens and cryptoassets, transforming almost anything into a unique and transactional symbol. As a result, one of the primary features of this innovation is its ability to commodify intangible objects by assigning them some monetary value. Blockchain technically allows for conferring unique and transactional value upon virtually anything.

The developments and consequences that cryptocurrencies have been producing since their appearance mainly stem from this effect—the emergence of their public and distributed cryptographic registry technology. From the new local and alternative digital currencies to the elaborations around the new central bank digital currencies, from fintech and open banking to the new NFT markets, here lies the engine and vector of the centrifugal force of disintermediation (which does not mean the same as deconcentration—in fact, it could be just the opposite of that) and, above all, commodification (or tokenisation, assetisation, if you will) that the cryptographic world imposes on the space that crosses, in an increasingly intricate way, finance and technology in contemporary digital capitalism. This is how, strictly framed in a

systemic reading, the study of an object like Bitcoin, among many other challenging analogous developments, can help us see something more about what emerges as fundamental around the relationships established contemporaneously between technological domination and financial hegemony.

Financialised digitalisation and the (re)theorisation of capitalism

Capitalism evolves by circumventing contradictions through the creation of new contradictions, perpetuating the hegemony of capital as a social relation. This entails the valorisation of value through labour exploitation, driving social (re)production and distribution towards endless accumulation, extraction, and expropriation of social and natural environments to the point of exhaustion. Furthermore, this process instigates structural changes in other social relations and the overall economy, underscoring the historical nature of capitalism's perpetual transformation. This is its revolutionary form alluded to at the beginning of this chapter. Yet, these transformations are underpinned by continuities or adaptations of core exploitation relations, allowing for variances in the capitalist mode of production across space and time, each shaped by historical, cultural, and geographical particularities. When *(re)theorising capitalism*, it is crucial to scrutinise structural discontinuities within continuities and vice versa.

This chapter has examined global capitalism from an abstract and macro perspective, illuminating the interconnectedness of neoliberalisation, financialisation, and digitalisation in defining its current phase. Emphasising the overdetermination of these transformations, the primary argument posits that the system is entering a new stage propelled by digital transformation, where the convergence of intensified technological domination and financial hegemony assumes particular significance. Understanding such a convergence is vital for comprehending the revitalisation of capitalism in the digital age, here conceptualised as financialised digitalisation (or digitalised financialisation).

Regarding the investigation of transitions within capitalism and this specific phase transition, I proposed focusing on the interplay between finance and technology as a strategic entry point since these are powerful means of expanding the limits and barriers to valorisation, spearheading the reorganisation of productive forces within capitalism. I then moved to more concrete manifestations of this proposal by highlighting how research objects such as digital finance, cryptocurrencies, and NFT can serve as valuable starting points for gathering empirical evidence about current capitalist contradictions.

In addressing the financialised technologisation of social life characteristic of this contemporary form of transitional capitalism, I underscored some of the overarching trends emerging from the examination of such phenomena, including social acceleration tied to the compression of spatiotemporal flows, the escalating strategic significance of property over production and products, and the growing

social influence of data and information. In essence, a new configuration, increasingly pervasive, facilitating the utilisation of technical decentralisation for economic and political concentration. That is why, following these trends, particularly since the mid-2000s, it is no longer feasible to discuss financialisation without considering digitalisation (or platformisation) and vice versa.

When it comes to the social consequences of these transformations, the compulsive anticipation of the future in the present—a hallmark of capital valorisation anchored in property title possession, where value primarily depends on speculative future profitability—establishes a state of economic exception, a perpetual crisis, constantly teetering on the brink of imminent collapse. This imposition of finance's short-term, deregulating, and deterritorialising temporality across all economic domains forcefully constrains the horizon of capital accumulation and, consequently, the horizon of social possibilities, including the potential for social and political imagination concerning alternative futures, making the case for reimagining society beyond capitalism even more pressing.

These are not inevitable forces. Pertaining to the objects examined in this chapter, ongoing disputes, such as emerging new configurations of digital, community, state, or individual sovereignty persist (Campbell-Verduyn & Paraná, 2021). The same applies to the role of digital and cryptographic technologies in debates over individual and collective, public and private coordination, privacy, and transparency (Nardelli et al., 2023).

In summary, alternative possibilities can emerge from the distributive force of the digital world without privatisation, individualisation, and commodification of everything becoming the sole viable path, though this seems unlikely at present. Nevertheless, achieving this necessitates a rigorous understanding of the situation and steadfast political action in favour of new egalitarian, democratic, and public-oriented progressive configurations for such technologies and their applications (Dyer-Whiteford, 2020; Woodcock, 2021). For this reason, attaining a thorough understanding of the principal trends in today's capitalism is a crucial first step in this direction.

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