

Datafied corporate metropolis: initial notes on fintech ecosystems in São Paulo's informational center

Caio Zarino Jorge Alves 

Universidade Estadual de Campinas
Campinas, São Paulo, Brazil
caiozja@unicamp.br

Adriana Maria Bernardes da Silva 

Universidade Estadual de Campinas
Campinas, São Paulo, Brazil
abernar@unicamp.br

ABSTRACT

This paper examines the socio-spatial restructurings resulting from the emergence of fintech ecosystems in São Paulo's Informational Center. Methodologically, we combine a critical literature review on financial platformization within *advanced producer services complexes* with a preliminary survey and systematization of secondary data from the Central Bank of Brazil and the Distrito Report 2024. Grounded in a methodological approach that highlights the spatially selective nature of modernization across the periphery and semi-periphery of the world-economy, we analyze fintech ecosystems in the São Paulo metropolis as functional manifestations of contemporary datafication. Accordingly, we propose a research agenda to investigate the new morphologies, specializations, and hierarchies arising from the interdependencies among startups, Big Techs, incumbent banks, investors, and state entities in shaping the corporate complex of São Paulo's informational metropolis.

KEYWORDS: financial geography; fintech ecosystems; São Paulo.

INTRODUCTION

Grounded in the methodological premise that modernizations linked to new vectors of capitalist production unfold partially, incompletely, and selectively across each “socio-spatial formation” (Santos, 1977), this article examines the structural transformations triggered by the recent emergence of fintech ecosystems (Langley & Leyshon, 2020; Lai & Samers, 2020; Wójcik, 2020a) as functional manifestations of “platform capitalism” (Srniczek, 2017; Langley & Leyshon, 2017) in Brazil, particularly within São Paulo’s informational metropolis (Santos, [1993] 2009).

By pairing new infrastructural capabilities with a novel business model (Van Dijck, 2014; Langley & Leyshon, 2017; Westermeier, 2020; Fernandez *et al.*, 2020), platform capitalism rests on a “political economy of datafication” (Sadowski, 2019) in which Big Techs control the cross-sectoral supply of products and services to states, corporations, and individuals. The financial sphere, in particular, adopted this platformization logic more intensely following the 2008 subprime mortgage crisis in the United States (Hendrikse *et al.*, 2018). In this context, the development and integration of digital technologies in financial services fueled fintech operations across various market niches (Table 1).

Table 1 – Latin America – Fintechs: division of financial labor based on digital technologies

Segment	Scope (services and products)	Examples
Payments Methods	Facilitating digital payment processing	Alternative payment methods, Point of Sale (POS), and processing
Digital services	Managing and executing digital banking services	Digital banks, accounts, and wallets
Backoffice	Automated corporate management	Digital infrastructure, open banking, and financial risk management
Foreign Exchange	Facilitating value flow across currencies	International transfers and currency exchange
Cards	Offering different card types	Credit and prepaid cards
Credit	Offering and granting technology-based credit	Consortia, direct credit markets, crowdfunding, and peer-to-peer (P2P)
Cryptocurrency	Applying blockchain technology to virtual currencies	Brokers, investments, and payments

Continued on the next page...

Segment	Scope (services and products)	Examples
Debt	Managing debt relations between creditors and debtors	Debt negotiation
Personal finance	Managing, monitoring, loyalty building, and financial education	Loyalty programs, financial education, and personal management
Investimentos	Platforms for investing in varied asset classes	Financial assets and investment management

Source: Distrito Report 2024. Accessed: April 28, 2025. Available at: <https://materiais.distrito.me/report/fintech-report-2024>.

Fintechs are strategically important to the platformization of economies, societies, and territories in the first quarter of the twenty-first century. They form distinct ecosystems by: a) securing capital allocations from institutional investors with risk-tolerant portfolios; b) integrating core foundational services provided by Big Techs (e.g., cloud computing and artificial intelligence); c) engaging with state regulatory bodies through sui generis institutional frameworks; and d) partnering with incumbent banks—whether through project incubators and funding, service delivery, or direct acquisition by established financial institutions.

Amid this multi-agent platformization of finance, evaluating the socio-spatial impacts of fintech emergence becomes essential given the sector's rising prominence, as highlighted by:

- a) The “Bali Fintech Agenda”¹, launched jointly by the World Bank and the International Monetary Fund in 2018, established twelve policy pillars for fintech development (including fostering technology-driven financial services, promoting market competition and financial inclusion, adapting regulatory frameworks and supervisory practices, and safeguarding financial system stability, integrity, and surveillance);
- b) “Fintechs: A new paradigm of growth”², a 2023 McKinsey & Company report detailing global industry trends, which notes that between 2019 and 2023, market capitalization for publicly traded fintechs doubled (reaching

1 World Bank Group; International Monetary Fund. The Bali Fintech Agenda: A Blueprint for Successfully Harnessing Fintech's Opportunities. 2018. Accessed: October 20, 2025. Available at: <https://www.imf.org/en/Publications/Policy-Papers/Issues/2018/10/11/pp101118-bali-fintech-agenda>.

2 McKinsey & Company: | Fintechs: a new paradigm of growth. 2023. Accessed: October 20, 2025. Available at: https://www.mckinsey.com/industries/financial-services/our-insights/fintechs-a-new-paradigm-of-growth#.

\$550 billion), while the total number of unicorn fintechs grew sevenfold³ (reaching 272 corporations valued at \$936 billion); by 2023, digital channels processed 73% of global banking transactions; and in 2022, global fintech net revenues ranged between \$150 billion and \$205 billion, with projections reaching \$325 billion to \$463 billion by 2028—with Latin America, the Middle East, and Africa expected to lead market expansion.

Given the growing significance of fintech ecosystems, this article analyzes how the recent establishment of these new actors in financial and informational hubs both relies on and generates new materialities, rationalities, norms, and actions.

Examination of the São Paulo metropolis reveals an established body of research on its corporate and fragmented character, as embodied in its advanced producer services complex (Santos, [1990] 2009; Santos, [1993] 2009; Cordeiro, 1993; Santos, [1994] 2009; Silva, 2002; Fix, 2007; Lencioni, 2008; Dias & Lenzi, 2009; Silveira, 2016; Nabarro, 2016; Contel & Wójcik, 2019). However, analyses of the new spatial dynamics imposed by contemporary datafication remain scarce. To bridge this gap, this study draws on: i) theoretical and empirical insights into São Paulo's regional and national centrality, projected through its informational center (Santos, [1990] 2009; Silva, 2002; Contel, 2024); and ii) the analytical framework developed within the Global Network on Financial Geography (FinGeo) on the rebooting, updating, and upgrading of financial centers under contemporary platformization (Hendrikse et al., 2024; Bassens et al., 2024a; Bassens et al., 2024b).

Combining a critical literature review in economic and financial geography with a preliminary analysis of secondary data from the Central Bank of Brazil and the Distrito Report 2024, we present provisional findings across three core sections. The first section ("The Emergence of Platform Capitalism: Toward a Political Economy of Datafication") outlines the structural foundations of the contemporary period: digital platforms operating as sociotechnical systems that combine physical and digital infrastructure with new business models led by Big Techs. The second section ("Fintech Ecosystems: Restructuring Informational Centers Under Financial Platformization") details the new synergies generated by this sector, bringing together startups, investors, incumbent banks, and state institutions into new morphologies, specializations, and command-and-control hier-

³ A term applied to startups that achieve a market valuation of \$1 billion prior to an initial public offering (IPO).

archies. Finally, the third section ("Fintechs in São Paulo's Informational Center: Preliminary Notes") offers a preliminary synthesis of empirical data outlining the geographic configuration resulting from these new ecosystems within the São Paulo metropolis.

THE EMERGENCE OF PLATFORM CAPITALISM: TOWARD A POLITICAL ECONOMY OF DATAFICATION

According to Srnicek (2017), digital platforms generally combine four defining attributes: a) an intermediary function: providing the core infrastructure through which diverse user groups (customers, advertisers, developers, and digital service providers) interact; b) network effects: as user groups interact within the platform's digital environment, they generate data that feeds back into cash-flow monetization and reinforces rapid growth toward monopoly (where a larger user base drives higher profitability and platform valuation); c) cross-subsidization: by operating across varied market segments, platforms create accounting margins to balance loss-making niches with profitable ones; and d) rules and control: business practices and rules designed to maximize user engagement.

The interplay among these defining attributes shows that digital platforms are not merely passive conduits for exponentially growing information flows (Van Dijck, 2014; Sadowski, 2019). Beyond this quantitative dimension, platformization marks a profound qualitative shift, as platforms "induce, produce and program circulations" (Langley & Leyshon, 2017, p. 19).

By refining data management as part of this new *modus operandi*, digital platforms function as emblematic sociotechnical systems in today's world. As such, they combine, on the one hand, infrastructures capable of accessing, storing, and processing large volumes of data and, on the other hand, "business models" based on wealth extraction via algorithmic data management (Langley & Leyshon, 2017; Hendriske et al., 2018; Fernandez et al., 2020; Bassens et al., 2024b).

Consequently, the platformization of economies, societies, and territories marks a new phase of digitalization. A distinctive feature of this contemporary manifestation of the centrality of the informational variable is the articulation between new potentialities enabled by the expansion of the capacities to collect, store, and process data and new forms of extracting value and income guided by data intermediation, coordination, control, and management (Sadowski, 2019; Langley & Leyshon, 2020; Westermeier, 2020).

This political economy of datafication operationalizes data as a form of capital (Sadowski, 2019) by integrating high finance into production and consumption tied to social reproduction through platforms (Pessanha, 2020). To achieve this, digital platforms deploy a business model built on three core dimensions: a) regular revenue streams, categorized as direct and/or indirect; b) a capitalization model that aligns the interests of venture capital funds (on the supply side) and platform corporations (on the demand side); and c) the formation of ecosystems in which specific platforms reach “hyperscale” status (Bassens et al., 2024b) as a prerequisite for coordinating data monetization and consolidating market dominance.

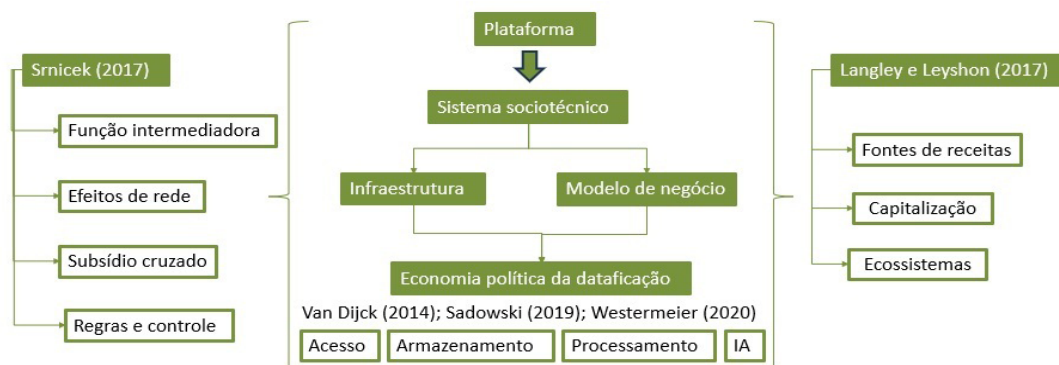
The first dimension concerns establishing regular revenue streams, divided into direct and indirect sources. Direct revenue streams involve charging fees and service costs for digital offerings users access. Conversely, indirect revenue streams monetize the digital footprints users generate across virtual platform environments, treating user data as an input that is aggregated and processed through algorithms. As Fernandez et al. (2020, p. 47) note, indirect sources matter because “it is not the production of goods that yields revenue, but the ownership of the platform attracting a vast user ecosystem whose digital footprints can be monetized.”

The second dimension involves the platform capitalization model, characterized by the convergence of venture capital portfolio profiles and the structural timeline required for platform consolidation. Venture capital funds allocate capital across diverse asset portfolios, expecting that massive returns from a few breakout firms will offset losses from failed investments. Within this logic, digital platforms attract capital because they must scale rapidly and lock in a vast user base, generating the direct and indirect revenues needed to extract monopoly rent. While most early-stage startups fail, a select few achieve market hegemony in their niches. As Langley & Leyshon (2020, p. 22) argue, “platforms thus become legitimate objects of capitalization [...] because they promise returns on capital.”

Finally, “platform ecosystems” (Van Dijck, 2014; Langley & Leyshon, 2017) rely on synergies among a multitude of diverse actors who extend beyond simple buyer-seller transactions, building complex interdependencies through cooperation and competition. Rather than analyzing digital platforms as individual firms that internalize information to deliver services directly, we must view them as part of multi-actor arrangements that range from regulatory agencies and state supervisors to institutional investors. As Hendrikse et al.

(2018, p. 19) state, “the concept of an ‘ecosystem’ [...] refers to a set of actors—entrepreneurs, developers, customers, governments, etc.—who are (in)directly involved in platform valorization.”

Figure 1 – Political economy of platforms as sociotechnical systems



Source: Prepared by the authors.

The synthesis of regular revenue mechanisms (direct and indirect sources), capital allocation (venture capital), and ecosystem formation (environments to achieve hyperscale) corroborates analyses linking the rise of digital platforms to processes of ‘re-intermediation,’ ‘capitalization,’ and ‘consolidation’ (Langley & Leyshon, 2020). As a result, the success of platformized corporations reflects a ‘winner-takes-all’ logic (Fernandez et al., 2020, p. 11). A small set of dominant firms becomes the ‘infrastructural core’ (Hendrikse et al., 2021; Bassens et al., 2024b) of platform capitalism, acting as an ‘obligatory passage point’ (Fernandez et al., 2020, p. 47) for a wide range of enterprises that depend heavily on these technologies, infrastructures, and sociotechnical systems.

Known as Big Tech and led by the two national states competing for contemporary geopolitical and geoeconomic dominance (the United States and China), these hyperscaled platforms (Bassens et al., 2024a) offer core digital services—such as cloud computing, artificial intelligence, financial services, the Internet of Things (IoT), network infrastructure, e-commerce, data centers, search engines, app stores, and social networks. In the US, they are captured by the GAFAM acronym (Google/Alphabet, Amazon, Facebook/Meta, Apple, and Microsoft), while in China they correspond to BATX (Baidu, Alibaba, Tencent, and Xiaomi). Beyond locating dominant firms within the US and Chinese innovation systems, Big Tech dominance is also highlighted by the “Magnificent 7”: a group of seven technology corporations that rank among the ten largest publicly traded companies worldwide by market capitalization. In addition to Google/Alphabet, Amazon, Facebook/Meta, Apple, and Microsoft, this group includes Nvidia and Tesla.

As proposed by Hendrikse et al. (2021), the origin of Big Techs as the “hard core” of platform capitalism unfolds across two primary periods linked to waves of information and communication technology diffusion. The first period, termed the “installation period,” comprises three technology-driven phases: a) the hardware phase in the 1970s, featuring the microprocessor as a key invention (1971) and the founding of Microsoft (1974) and Apple (1976); b) the software phase in the 1980s, marked by Microsoft’s expansion via the Windows operating system (released in 1985); and c) the platform phase in the 1990s, driven by commercial internet adoption (1995) and the founding of Amazon (1994), Google/Alphabet (1998), Tencent (1998), Alibaba (1999), and Facebook/Meta (2004). Thus, the “Big Tech Bang” occurred during the late twentieth and early twenty-first centuries, marking the transition from installation to deployment.

While the installation period focused on technology adoption within the tech sector, the second period featured data-driven platformization extending far beyond the tech industry. It also comprises three phases: a) the surveillance capitalism phase in the 2000s, shaped by the dot-com crash (2000), the September 11 terrorist attacks (2001), and the 2008 financial crisis, with impacts amplified by the smartphone (2007); b) the rapid growth phase of the Chinese economy in the 2010s, characterized by widespread smartphone adoption, expansion of cloud storage, and the rise of artificial intelligence; and c) the “big techification” phase during the COVID-19 pandemic, marked by the spread of sociotechnical systems that pair informational infrastructure with platform business models based on value extraction via algorithmic data management.

In this genealogy, the culmination of “big techification” signals the deep penetration of platform business models and sociotechnical systems across economies, societies, and territories, reshaping finance—as a key variable of the contemporary period—through new informational capacities. The next section examines how platform capitalism and Big Tech interact with finance through fintech ecosystems (Hendrikse et al., 2018; Lai & Samers, 2020; Wójcik, 2020a; Langley & Leyshon, 2020; Ioannou & Wójcik, 2022; Bassens et al., 2024b).

FINTECH ECOSYSTEMS: RESTRUCTURING INFORMATIONAL CENTERS UNDER FINANCIAL PLATFORMIZATION

While Big Techs constitute the “lubricating core of contemporary capitalism” (Hendrikse et al., 2021; Bassens et al., 2024b), this role fundamentally depends on broader, diverse ecosystems of “satellite” platforms. Orbiting

foundational Big Techs, these platforms both drive and are driven by the overarching process of platformization. Cooperative exchanges and complementarities between Big Techs and sectoral digital platforms emerge when: a) ride-hailing, delivery, e-commerce, and short-term rental applications (such as Uber, iFood, Mercado Livre, and Airbnb) rely on the digital infrastructure of mapping platforms (such as Google Maps); b) audiovisual streaming platforms (such as Netflix and Spotify) depend on cloud computing services (such as Amazon Web Services, Microsoft Azure, and Google Cloud); and c) algorithmic data processing and artificial intelligence models (ChatGPT/OpenAI, Claude/Anthropic, Gemini/Google), hosted in data centers, operate across sectors to deliver digital services to a client base of individuals, nation-states, and corporations.

Consequently, Big Tech hegemony (e.g., Google, Amazon, Microsoft) relies on connections with sectoral platforms that plug into their infrastructure to access core services, capture niche markets, and secure monopoly or oligopoly positions through the “algorithmic management of territory” (Tozi, 2020). Beyond Big Techs and emerging startups these ecosystems depend on interactions among at least four other groups of actors (Pessanha, 2020): a) banks, investment funds, venture capital firms, and shareholders; b) state entities across executive, legislative, and judicial branches at local, regional, and national scales; c) corporations and individuals acting as consumers and clients; and d) relevant stakeholders and civil society organizations, including foundations, research centers, trade associations, and labor unions.

Given these overlaps engendered in the context of platform capitalism, we will focus more closely on the conformation of fintechs as ecosystems that represent a new manifestation of the synthesis generated “by the intersections of the finance and technology sectors” (Lai & Samers, 2020, p.2) today.

Starting from the premise that “finance has always been at the forefront of adopting and using technology intensively,” the expectation that “it was only a matter of time before the two words were combined” (Wójcik, 2020a, p. 2) must be qualified by the specific conditions that produced the “Fin-Tech-State triangle” as the foundational framework of fintech ecosystems. Although a long-term interplay between finance and information runs throughout the historical geography of capitalism—assuming distinct forms across different eras—this combination has reached unprecedented complexity and sophistication today (Arroyo, 2021). Thus, systematic analysis becomes imperative, beginning with a clear empirical delineation of the actors that define and ma-

terialize this nexus between finance and information technology in the first quarter of the twenty-first century.

As noted in the Introduction, the term “fintech” blends the words “financial” and “technology,” and its historical trajectory is linked to two primary contexts (Contel, 2024). First, fintechs trace their origins to Citicorp’s launch of the Financial Services Technology Consortium (FinTech Project) in 1993, followed by the development of digital payment systems by US corporations such as eBay (1995) and PayPal (1998). Second, fintechs expanded more robustly after the 2008 subprime mortgage crisis, which was also centered in the United States. At the convergence of these two moments, fintech ecosystems emerged as a response to the cyclical imperative to channel technological innovations into new financial products capable of generating returns through accumulation by dispossession (Harvey, [2003] 2013). To this end, they absorbed both idle surplus capital seeking yield through new financial applications and skilled labor—analysts, managers, and tech-finance operators displaced by the post-crisis downturn.

As part of this process, fintechs are propelled by a “psychosphere” (psicosfera) (Santos, [1996] 2008) that links digital technologies to lower operating costs, efficiency gains, enhanced competitiveness, reduced fees, and streamlined financial procedures. In core countries of the world-economy (the Global North), *fintech* expansion promises an improved consumer experience by digitizing and informationalizing financial institutions and transactions. In peripheral and semi-peripheral countries (the Global South), the sector frames its growth as a project of disintermediation, democratization, and financial inclusion for vast populations historically excluded from the formal banking system.

Although critical research must evaluate these institutional narratives of financial democratization against the actual socio-spatial impacts of fintech ecosystems in peripheral economies like Brazil, technology-driven finance clearly reshapes daily operations. Indeed, “financial practices and dynamics framed as innovative and disruptive [...] are changing how firms and consumers make payments, lend, borrow, and invest” (Lai & Samers, 2020, p. 2). Across multiple scales (global, national, metropolitan), actors (startups, banks, investors, state entities), and dimensions (economic, political, spatial), this rapid expansion of digital financial services informs literature that conceptualizes fintech along three distinct dimensions.

The first dimension defines fintech as the firm itself, whose disruptive character stems from delivering financial services through new products and

instruments enabled by intensive information technology adoption. In this sense, fintechs represent “startups and tech-focused new market entrants” that “create new platforms, products, and services beyond those currently provided by the traditional financial industry” (Lai & Samers, 2020, p. 2). Here, fintechs leverage a supportive psychosphere that portrays them as democratizing agents facilitating access to contemporary financial networks. Framing their operations around institutional deregulation, operational efficiency, and rapid R&D-driven innovation, fintechs contrast their model with traditional intermediation by incumbent banks—which they characterize as bureaucratic, slow, rigid, and exclusionary.

The second perspective defines fintech as the application of information technology to financial activity itself. This marks a notable shift from the first approach: from a firm-centric focus to an activity- and function-centric analysis shaped by intensive digitalization, new instruments, and novel attributes. This perspective encompasses computerized financial solutions, products, services, and operations as part of a “bundle of innovations” (Wójcik, 2020a, p. 3). In other words, this approach focuses on digital technologies that connect *back-end* solutions (hardware capabilities: artificial intelligence, big data, machine learning, data centers, and cloud computing) with front-end applications (software interfaces: search engines, digital identity services, app stores, apps, and mobile financial services/MFS) to deliver computerized financial services. These include digital payments and processing, internet banking accounts and services, digital infrastructure, credit provision, cross-border remittances, and debt restructuring. Within this framing, information-dense technological innovation drives new socio-spatial relations across individuals, states, and diverse corporations. However, relying solely on this approach risks promoting a “technosolutionist” rhetoric (Morozov, 2018) that isolates technical phenomena from the political economy that governs them.

Finally, the third perspective conceptualizes fintech as an “economic sector” (Wójcik, 2020a, p. 3) with a “focus on applying newly developed digital technologies to financial services.” This framing understands fintech as ecosystems comprising not only financial startups and technological innovations, but also their interdependencies with investors, incumbent banks, Big Techs, and state regulatory, supervisory, and development agencies. We argue that this perspective offers the most robust analytical framework for evaluating the complex ways finance and information intersect today. By prioritizing social and institutional relations, it captures multiscalar interactions

across varied actors and dimensions. In doing so, it moves beyond narrow, functionalist approaches (centered on individual firms or discrete technologies) to embed them within broader structures and processes. Consequently, this approach frames fintech not as a set of entirely novel, disruptive features that seamlessly displace older mechanisms, but as an expansive institutional arrangement marked by mediations, nuances, and alignments among venture capital providers, incumbent banks developing or acquiring solutions, Big Techs delivering foundational infrastructure, and state institutions overseeing regulation, supervision, and market development.

Through these interdependencies, fintech ecosystems embody the “Fin-Tech-State triangle” (Hendrikse et al., 2020; Wójcik, 2020a; Lai & Samers, 2020; Bassens et al., 2024a) as a hybrid synthesis of financial services, digital technologies, and state mediation. Thus, fintech ecosystems drive the “digital transformation of financial services [...] through the diffusion of information and communication technology in the financial realm” (Hendrikse et al., 2018, p. 16). Within this dynamic, a segmented division of financial labor (Langley & Leyshon, 2020, p. 4) organizes specialized operations: digital banking, online payments and transfers, credit scoring and lending, automated financial planning, savings, and algorithmic asset management via robo-advisors⁴, alongside business-to-business transaction infrastructures. A wide range of supporting institutions and mechanisms link these separate activities across the three key areas: finance, information technology, and the state.

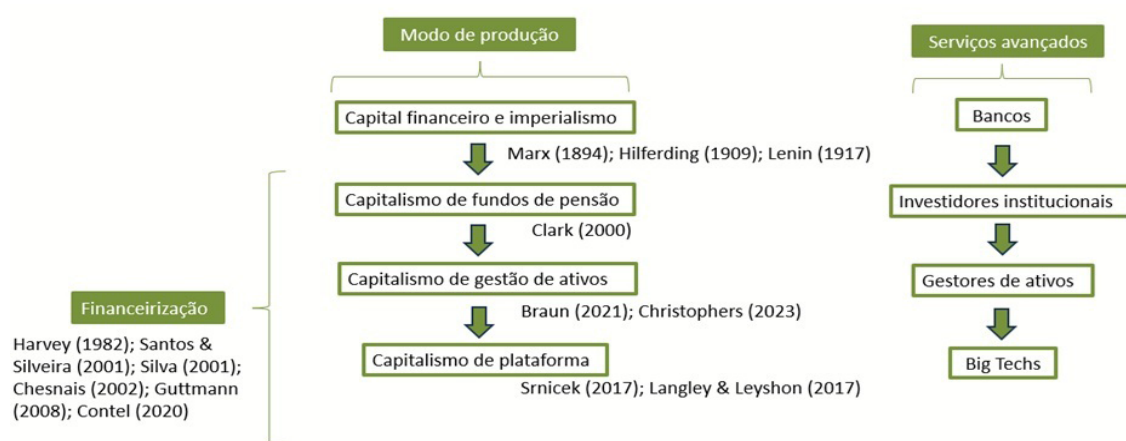
From this framework, we understand that fintech ecosystems update and intensify the synthesis between finance and information, whose roots lie in the “long duration” (Braudel, [1979] 1996; Wallerstein, 1974; Arrighi, 2008). Through this lens, fintech ecosystems update and intensify the long-term historical synthesis of finance and information rooted in the *longue durée* (Braudel, [1979] 1996; Wallerstein, 1974; Arrighi, 2008). In each successive modernization cycle, specific actors emerge to centralize command and control functions within financial and informational centers: commercial banks during the genesis of finance capital and fictitious capital underlying nineteenth-century industrialization (Marx, [1894] 1974; Hilferding, [1909] 1985; Lenin, [1917] 2011; Harvey, [1982] 2013); advanced producer services (transnational consultancies, accounting, advertising, corporate law, and finance firms) supporting late-twen-

⁴ A digital tool powered by algorithmic data processing and artificial intelligence.

tieth-century globalization (Sassen, 1991; Taylor, 2001; Rossi & Taylor, 2005); institutional investors (mutual funds, pension funds, insurers) and asset management firms anchoring financialization at the turn of the twenty-first century (Braga, 1993; Santos & Silveira, 2001; Clark, 2000; Chesnais, 2002; Guttmann, 2008; Braun, 2021; Christophers, 2023); and, finally, fintech ecosystems driven by contemporary financial platformization (Langley & Leyshon, 2017, 2020; Wójcik, 2020a; Lai & Samers, 2020).

Although these dominant actors take distinct spatial and institutional forms, they share core characteristics that align them with “advanced producer services” (Sassen, 1991; Silva, 2002; Waiengnier *et al.*, 2019; Bassens *et al.*, 2020), the “upper tertiary sector” (Labasse & Rochefort, 1965), the “quaternary economic sector” (Gottmann, 1961), the “upper circuit of the urban economy” (Santos, [1975] 2008), or the “transactional sector of the metropolitan corporate complex” (Cordeiro, 1986–1987, 1993; Alves, 2018, 2019, 2025). Shared across these actors is a *modus operandi* grounded in: gathering, interpreting, and broadcasting high-level corporate information (Silva, 2002); face-to-face interaction for strategic decision-making over large, volatile capital allocations (Törnqvist, 1968; Dicken, 2009; Lencioni, 2008); and agglomeration economies (Scott *et al.*, 2001; Mattos, 2006) through which command and control functions operate in “centers of territorial management” (Corrêa, 1989).

Figure 2 – Advanced services in the historical geography of capitalism



Source: Prepared by the authors.

Thus, amid ongoing shifts in the structural “territorial porosity” (Arroyo, 2006) of the world-economy, select locations worldwide serve as strategic command nodes coordinating the “world city network” (Taylor, 2001) across successive historical periods: moving from global production networks to global financial networks (Wójcik, 2020; Lai & Samers, 2020), and

culminating in contemporary global digital technology networks⁵ (Bassens et al., 2024).

Although integrated through new dynamics, the world city network anchors its nodes within the specific conditions of each sociospatial formation, shaped by material infrastructures and regulatory legacies inherited from past territorial divisions of labor. We must therefore examine how *fintech* ecosystems linked to platform capitalism materialize within peripheral, semi-peripheral, and Global South contexts (Wójcik, 2020b; Ioannou & Wójcik, 2022; Gibadullina, 2023), including Brazil. Accordingly, the following section offers preliminary observations on the spatial development of *fintechs* in Brazil, focusing specifically on São Paulo's informational metropolis and its metropolitan corporate complex.

THE FINTECH ECOSYSTEM AT THE INFORMATIONAL CENTER OF SÃO PAULO: INITIAL INSIGHTS

Throughout the *longue durée* of Brazilian territorial formation, the country's subordinate, dependent, peripheral, and semi-peripheral integration (Wallerstein, 1974; Arrighi, 2008) into the international division of labor has shaped a national urban network dominated by São Paulo's polycentric metropolis. Amid sociospatial restructurings driven by growing fragmentation and accelerating capital accumulation cycles, São Paulo has consolidated its position as the command-and-control center of the national territory—and its primary intermediary with the world economy. Through central nodes within its metropolitan corporate complex, each successive wave of modernization has concentrated key actors responsible for strategic decision-making on large, volatile investments. These decisions rely on selective access to, analysis of, and dissemination of sophisticated information, which materialize elsewhere as “verticalities,” “hierarchical happenings,” and “organizational solidarities” (Santos, [1996] 2008; Silva, 2002).

Combining territorial command-and-control functions with an intermediary role between the national economy and regional/international spheres, São Paulo developed as a primary “management center” through sequential specializations in decision-making among dominant actors (Cordeiro, 1993):

5 Within the specific literature of Economic Geography and Financial Geography, this debate unfolds around Global Production Networks (GPNs), Global Financial Networks (GFNs), and Global Digital Technology Networks (GDTNs).

I - The Historical/Traditional Center (early twentieth century): concentrated import/export houses and banking establishments, vitalizing urban social relations and fostering labor and consumer markets driven by the coffee economy of Western São Paulo state; II - the Paulista Center (from the 1970s onward): housed corporate headquarters emerging from late, import-substituting industrialization; III - the Berrini and Faria Lima / Southwest Quadrant Center (late twentieth century): clustered internationalized advanced producer services (consulting, accounting, corporate law, advertising, marketing, and finance) as engines of globalization; and IV - the expanded Southwest Quadrant (early twenty-first century): attracted headquarters of institutional investors and asset managers.

Figure 3 – The emergence of informational centers



Source: Prepared by the authors.

Fintechs now intersect with these historical legacies embedded within São Paulo's polycentric informational center. As emblematic agents of datafication, both *fintechs* and Big Techs drive the *update*, *upgrade*, and potential *reboot* (Hendrikse et al., 2024) of territorial command-and-control functions in informational hubs.

Figure 4 – The fintech ecosystem at the Informational Center of São Paulo



Source: Prepared by the authors.

The interdependencies generated by platform-mediated digital services point toward new morphologies (emerging spatial vectors and platform nodes within the metropolis); new specializations (complementarities and cooperative arrangements with existing clusters dense in advanced producer services); and new hierarchies (repositioning the informational center within the wider urban network through shifts in market power driven by digital platforms).

Across this historical trajectory, preliminary empirical data reveal the emergence of *fintech* ecosystems as key actors operationalizing contemporary platform capitalism within the semi-periphery of the world-economy, the Brazilian socio-spatial formation, and the urban fabric of São Paulo's informational metropolis.

Preliminary data on the Latin American *fintech* market (Table 2) illustrates the sector's rapid growth: active fintechs expanded from 827 in 2013 to 2,712 in 2023. Between 2014 and 2024, the sector raised \$15.6 billion across 1,679 transactions, peaking during the COVID-19 pandemic (\$5.7 billion across 363 transactions in 2021 alone).

Categorizing *fintechs* by product, service, and technology shows that credit platforms account for the largest share of *startups* (477 of 2,710, or ~17%). In contrast, digital services dominate in capital allocation (\$5.3 billion of \$15.7 billion, or 34%).

Table 2 – Latin America: Active Fintechs (2012–2023)

Year	Count	Funding (US\$ billions)	Deals
2013	827	N/A	N/A
2014	974	0.1	29
2015	1,160	0.4	42
2016	1,380	0.2	47
2017	1,627	0.2	71
2018	1,916	0.6	152
2019	2,214	1.6	201
2020	2,448	2.3	242
2021	2,622	5.7	363
2022	2,694	2.8	307
2023	2,712	1	142
2024	2,712	0.8	83
TOTAL	23,286	15.7	1,679

Source: Distrito Report 2024. Available at: <https://materiais.distrito.me/report/fintech-report-2024>.

Within Latin America's expanding *fintech* landscape, Brazil's regional primacy is evident: the country concentrates nearly three-fifths of all fintechs (58.7%) and captures the majority of sectoral investments (Table 3). Between 2014 and 2024, Brazil absorbed \$10.4 billion across 1,034 transactions—representing 66.6% of total regional funding and 61.5% of all deals.

Brazil leads both key segments of Latin America's fintech division of labor—namely 'credit,' which dominates by entity count, and 'digital services,' which leads in investment volume. Of the 477 credit startups across Latin America, 298 are based in Brazil (62%); likewise, Brazil concentrates 119 of the subcontinent's 287 digital services entities (41%).

Table 3 – Latin America: fintechs by country (2024)

Country	Count	%
Brazil	1,592	58.7
Mexico	561	20.7
Argentina	175	6.5
Chile	118	4.4
Colombia	102	3.8
Peru	59	2.2
Puerto Rico	39	1.4
Costa Rica	26	1
Ecuador	18	0.7
Bolivia	8	0.3
Panama	7	0.3
Nicaragua	5	0.2
TOTAL	2,710	100.2

Source: Distrito Report 2024. Available at: <https://materiais.distrito.me/report/fintech-report-2024>.

Reflecting the expanding footprint of platform finance, the National Monetary Council (CMN) introduced a regulatory framework in 2018, establishing two legal categories for credit fintechs: peer-to-peer lending companies (SEP - Sociedade de Empréstimo entre Pessoas, intermediating loans between borrowers and lenders) and direct credit companies (SCD - Sociedade de Crédito Direto, issuing loans exclusively with proprietary capital). While the CMN does not classify them as fintechs, Payment Institutions (IP - Instituições de Pagamento, regulated under Law No. 12,865/2013) also share close functional convergences with fintech ecosystems.

According to Central Bank of Brazil data from February 2025, São Paulo's informational metropolis demonstrates clear spatial dominance, concentrating approximately 58% of all SEPs (7 of 12), 36% of SCDs (43 of 120), and 53% of IPs (87 of 165). Furthermore, São Paulo is the sole Latin American city featured in the Cambridge Centre for Alternative Finance (CCAF) global Top 30

Fintech Hubs ranking (2018)⁶. In the Global Financial Centres Index 37 (GFCI⁷, March 2025), São Paulo leads Latin America, ranking 78th of 119 financial centers overall and 66th of 115 specifically in fintech competitiveness.

The historical formation of São Paulo's informational center—driven by overlapping waves of command-and-control centralization—combined with this preliminary empirical overview indicates that fintech emergence repositions the metropolis within global urban networks. Consequently, future research must examine how these new actors and spatial practices transform São Paulo's informational center across urban morphologies, specializations, and hierarchies. In view of this finding, it is worth advancing a research agenda that details how these new agents and actions point to transformations in São Paulo's informational center in terms of morphologies, specializations, and urban hierarchies.

CONCLUDING REMARKS

Without seeking to offer definitive conclusions regarding the fully formed socio-spatial restructurings generated by fintech ecosystems in São Paulo's financial and informational center, this article frames the broader problem-atic. It outlines theoretical and methodological approaches to analyze it.

To this end, we examined how contemporary datafication stems from the dominance of digital platforms functioning as sociotechnical systems. These platforms combine physical and digital infrastructures for data access, storage, and processing with new business models centered on rent extraction via algorithmic data management. From this process, Big Techs achieve dominance through hyperscale digital services that operate across states, corporations, and individuals. Through multi-actor synergies linking Big Techs, institutional investors, startups, incumbent banks, and state entities, fintech ecosystems deliver financial services by embedding these digital innovations.

Relying on agglomeration economies and informational externalities tied to strategic decision-making, the rise of fintech ecosystems acts as a catalyst reshaping the morphologies, specializations, and hierarchies of financial

6 The Cambridge Centre for Alternative Finance (CCA). Global FinTech Hub Report – The Future of Finance is Emerging: New Hubs, New Landscapes. Cambridge: University of Cambridge/Judge Business School, 2018. Accessed: October 20, 2025. Available at: <https://www.jbs.cam.ac.uk/faculty-research/centres/alternative-finance/publications/2018-global-fintech-hub-report/>.

7 Z/yen Group. The Global Financial Centres Index (GFCI). Accessed: October 20, 2025. Available at: <https://www.zyen.com/publications/professional-articles/the-global-financial-centres-index-37/>.

and informational centers. In Brazil, the primacy of São Paulo's informational metropolis is being reconfigured under financial platformization. Shaped by material infrastructures and regulatory frameworks inherited from past territorial divisions of labor, its metropolitan corporate complex enters a new phase of data-driven restructuring.

As part of an ongoing international research agenda examining the reboot, upgrade, and update of financial centers in the Global North, substantial analytical ground exists to extend these inquiries to the Global South—specifically focusing on fintech emergence and Big Tech interdependencies in São Paulo's Informational Center. This article provides a foundation for this agenda by delineating a geographical condition to be tackled across three interrelated dimensions: a) the political-institutional framework: How do national regulatory and institutional norms within the Brazilian sociospatial formation shape this process?; b) the spatial configuration of São Paulo's informational center: How do its urban morphologies shift in response to new spatial structures, sectoral compositions, and territorial functions?; c) Business practices and organizational structures: How do intra- and inter-firm relations transform through emerging modes of cooperation, competition, and corporate alliances? ●

BIBLIOGRAPHICAL REFERENCES

ALVES, Caio Zarino Jorge. A formação do complexo corporativo metropolitano de São Paulo baseado na distribuição das sedes dos bancos de investimento (1996-2013). **Geosp – Espaço e Tempo**, v. 22, n. 1, p. 096-114, 2018.

ALVES, Caio Zarino Jorge. Finanças, centros de gestão e complexos corporativos metropolitanos: análise dos fundos de investimento em Buenos Aires e São Paulo. *In*: COSTA, Wanderley Messias; VASCONCELOS, Daniel (orgs). **Geografia e geopolítica da América do Sul: integrações e conflitos**. São Paulo: FFLCH/USP, 2019. p. 152-17.

ALVES, Caio Zarino Jorge. Topologias financeiras em redes urbanas sobreestruturação espacial: lajes corporativas e agências bancárias dos fundos de investimentos imobiliários (FIIs) no território brasileiro. **GEOUERJ**, v. 48, p. 1-22, 2025.

ARRIGHI, Giovanni. **Adam Smith em Pequim: origens e fundamentos do século XXI**. São Paulo: Boitempo, 2008.

ARROYO, Mónica. Digitalização e financeirização do território: uma imbricação que se renova no capitalismo do século XXI. *In*: RENA, Natacha; BRANDÃO, Marcela; MEDEIROS, Daniel; SÁ, Isabel (orgs.). **Urbanismo biopolítico**. Belo Horizonte: Agência de Iniciativas Cidadãs, 2021. p. 143-156.

BASSENS, David; GUTIERREZ, Laura; HENDRIKSE, Reijer; LAMBERT, Deborah; WAIENGNIER, Maëlys. Unpacking the advanced producer services complex in world cities: charting professional networks, localization economies and markets. **Urban Studies**, 58 (6), 1286-1302, 2020.

BASSENS, David; HENDRIKSE, Reijer; LAI, Karen; VAN MEETEREN, Michiel (2024a). World cities under conditions of digitalization and platform capitalism: updating the advanced producer services complex. **Geoforum**, 152, 1-6, 2024.

BASSENS, D., Pazitka, V., & Hendrikse, R. (2024b). Banking in the cloud: mapping big tech's global digital technology networks. **Regional Studies**, 58(12), 2241-2255, 2024.

BRAGA, José Carlos. A financeirização da riqueza. **Economia e Sociedade**, n. 2, 25-57, 1993.

BRAUDEL, Fernand. **Civilização material, economia e capitalismo - séculos XV-XVIII**. São Paulo: Martins Fontes, [1979] 1996.

BRAUN, Benjamin. Asset manager capitalism as a corporate governance regime. *In*: HACKER, Jacob; HERTEL-FERNANDEZ, Alexander; PIERSON, Paul; THELEN, Kathleen

(orgs.) **The American Political Economy**: politics, markets, and power. Cambridge: Cambridge University Press, 2021. p. 270-294.

CHESNAIS, François. A teoria do regime de acumulação financeirizado: conteúdo, alcance, interrogações. **Economia e Sociedade**, v. 11, n. 1 (18), p. 1-44, 2002.

CHRISTOPHERS, Brett. **Our lives in their portfolios**: why asset managers own the world. London: Verso Books, 2023.

CLARK, Gordon. **Pension fund capitalism**. Oxford: Oxford University Press, 2000.

CONTEL, Fabio. **The financialization of the Brazilian Territory**: from global forces to local dynamisms. Springer: Cham, 2020.

CONTEL, Fabio. As fintechs no Brasil e a primazia de São Paulo: aspectos conceituais e empíricos. **Confinis** – Revista Franco-Brasileira de Geografia, 65, 2024.

CORDEIRO, Helena Kohn. Os principais pontos de controle da economia transacional no espaço brasileiro. **Boletim da Geografia Teórica**, n.16-17 (31-34), p.153-196, 1986-1987.

CORDEIRO, Helena Kohn. A 'cidade mundial' de São Paulo e o complexo corporativo do seu centro metropolitano. In: SANTOS, Milton *et al.* (orgs.). **O novo mapa do mundo**: fim do século e globalização. São Paulo: Hucitec/Anpur, 1993.

CORRÊA, Roberto. Lobato. Concentração Bancária e os Centros de Gestão do Território. **Revista Brasileira de Geografia**, 51(2), 1989.

CLARK, Gordon. **Pension fund capitalism**. Oxford: Oxford University Press, 2000.

DIAS, Leila Christina.; LENZI, Maria Helena. Reorganização espacial de redes bancárias no Brasil: processos adaptativos e inovadores. **Caderno CRH**: finanças, política e território, v. 22, n. 55, p. 97-117, 2009.

DICKEN, Peter. **Mudança Global**. São Paulo: Editora Artmed, 2009.

FERNANDEZ, Rodrigo; ADRIAANS, Ilke; KLINGE, Tobias; HENDRISKE, Reijer. **Engineering digital monopolies**: the financialisation of Big Tech. Amsterdam: The Centre for Research on Multinational Corporations (SOMO), 2020.

GIBADULLINA, Albina. The birth and development of Anglophone financial geography: a historical analysis of geographical studies of money and finance. **Geoforum**, v. 125, 150-167, 2021.

GOTTMANN, Jean. **Megalopolis**: the urbanized northeastern seaboard of the United States. New York: The Twentieth Century Fund, 1961.

GUTTMANN, Robert. Uma introdução ao capitalismo dirigido pelas finanças. **Novos Estudos CEBRAP**, n. 82, p. 11-32, 2008.

HARVEY, David **Os limites do capital**. São Paulo: Boitempo, [1982] 2013.

HENDRIKSE, Reijer, BASSENS, David; VAN MEETEREN, Michiel. The Appleization of finance: charting incumbent finance's embrace of Fintech. **Finance and Society**, 4(2), 159-180, 2018.

HENDRIKSE, Reijer; VAN MEETEREN, Michiel; BASSENS, David. Strategic coupling between finance, technology and the state: cultivating a Fintech ecosystem for incumbent finance. **Environment and Planning A**, 52 (8), 1516-1538, 2019.

HENDRISKE, Reijer, ADRIAANS, Ilke, KLINGE, Tobias; FERNANDEZ, Rodrigo. The Big Technification of Everything. **Science as Culture**, 31(1), 59-71, 2021.

HENDRISKE, Reijer, BASSENS, David, ROSSITER, Alex. Rebooting Amsterdam for the age of Big Tech: platform capitalism, reintermediation, and financial-center change. **Geoforum**, 148, 103894, 2024.

HILFERDING, Rudolf. **O capital financeiro**. São Paulo: Nova Cultural, [1909] 1985.

IOANNOU, Stefanos; WÓJCIK, Dariusz. The limits to FinTech unveiled by the financial geography of Latin America. **Geoforum**, 128, 57-67, 2022.

LABASSE, Jean; Rochefort, Michel. Equipements tertiaries supérieurs et réseau urbain. **Économie et humanism**, n. 159, p. 54-61, 1965.

LAI, Karen; SAMERS, Michael. Towards an economic geography of Fintech. *Progress in Human Geography*, 45(4), p. 720-739, 2020.

LANGLEY, Paul; LEYSHON, Andrew. Platform capitalism: The intermediation and capitalization of digital economic circulation. **Finance and Society**, 3(1), 11-31, 2017.

LANGLEY, Paul; LEYSHON, Andrew. The platform political economy of fintech: reintermediation, consolidation and capitalization. **New Political Economy**, 26(3), p. 376-388, 2020.

LENCIONI, Sandra. Concentração e Centralização das atividades urbanas: uma perspectiva multiescalar. Reflexões a partir do caso de São Paulo. **Revista de Geografia Norte Grande**, v. 39, p. 7-20, 2008.

LENIN, Vladimir. **Imperialismo** – estágio superior do capitalismo. São Paulo: Boitempo, [1917] 2021.

MATTOS, Carlos. Modernización capitalista y transformación metropolitana em América Latina: cinco tendencias constitutivas. *In*: LEMOS, Amália Inês G. de *et al.* (orgs.). **América Latina: cidade, campo e turismo**. São Paulo: CLACSO, 2006.

MARX, Karl. **O capital: crítica da economia política**. Livro III/ V. 5. São Paulo: Abril Cultural, [1894] 1984.

MOROZOV, Evgeny. **Big Tech: a ascensão dos dados e a morte da política**. São Paulo: Ubu Editora, 2018.

NABARRO, Wagner Wendt. **O mercado de capitais no território brasileiro: ascensão da BM&FBovespa e centralidade financeira em São Paulo (SP)**. Dissertação de Mestrado em Geografia Humana (Faculdade de Filosofia, Letras e Ciências Humanas), Universidade de São Paulo, São Paulo, 2016.

PESSANHA, Roberto. Inovação, financeirização e *startups* como instrumentos e etapas do capitalismo de plataformas. *In*: Gomes, Maria; Tunes, Regina; Oliveira, Floriano. **Geografia da inovação: território, redes e finanças**. Rio de Janeiro: Consequência Editora, 2020. P. 433-468.

ROSSI, Eliana; Taylor, Peter. Banking networks across Brazilian cities: interlocking cities within and beyond Brazil. **Cities**, v. 22, n. 5, p. 381-393, 2005.

SADOWSKI, Jathan. When data is capital: datafication, accumulation, and extraction. **Big Data & Society**, 6(1), 1-12, 2019.

SANTOS, Milton. **O espaço dividido: os dois circuitos da economia urbana nos países subdesenvolvidos**. São Paulo: EDUSP, [1975] 2008.

SANTOS, Milton. Sociedade e Espaço: a formação social como teoria e como método. **Boletim Paulista de Geografia**, n. 54, p. 81-99, 1977.

SANTOS, Milton.; Silveira, Maria Laura. **O Brasil: território e sociedade no início do século XXI**. Rio de Janeiro: Record, 2001.

SANTOS, Milton. ([1993] 2009). **A Urbanização Brasileira**. São Paulo: EDUSP.

SANTOS, Milton. ([1996] 2008). **A Natureza do Espaço**. São Paulo: EDUSP.

SASSEN, Saskia. (1991). **The Global City: New York, London, Tokyo**. Princeton: Princeton University Press.

SILVA, Adriana Maria Bernardes da. **A contemporaneidade de São Paulo**: produção de informações e novo uso do território brasileiro. Tese de Doutorado em Geografia Humana (Faculdade de Filosofia, Letras e Ciências Humanas), Universidade de São Paulo, São Paulo, 2002.

SILVEIRA, Maria Laura. São Paulo: entre la regencia del território y los mercados metropolitanos. In: SILVEIRA, Maria Laura (org). **Circuitos de la economia urbana**: ensayos sobre Buenos Aires y São Paulo. Buenos Aires: Café de las Ciudades, 2016, p. 217-258.

SCOTT, A; AGNEW, J.; SOJA, E.; STORPER, M. Cidades-regiões globais. **Revista Espaço & Debates**, São Paulo, n. 41, p. 11-25, 2001.

SRNICEK, Nick. **Platform capitalism**. Cambridge: Polity Press, 2017.

TAYLOR, Peter. Specification of the world city network. **Geographical Analysis**, v. 33, n. 2, p. 181-194, 2001.

TOZI, Fabio. Da nuvem ao território nacional: uma periodização das empresas de transporte por aplicativo no Brasil. **Geosp – Espaço e Tempo**, v. 24, n. 3, p. 487-507. 2020.

TÖRNSQVIST, Gunnar. Flows of information and the location of economic activities. **Geografiska Annaler**, Series B, Human Geography, v. 50, n. 1, p. 99-107, 1968.

VAN DIJCK, José. Datafication, dataism and dataveillance: Big Data between scientific paradigm and ideology. **Surveillance & Society**, 12(2), 197-208, 2014.

WAIENGNIER, Maëlys.; VAN HAMME, Gilles.; HENDRIKSE, Reijer; BASSENS, David. Metropolitan geographies of advanced producer services: centrality and concentration in Brussels. **Tijdschrift voor Economische en Sociale Geografie**, p. 1-15, 2019.

WALLERSTEIN, Immanuel. **The modern world-system**: capitalist agriculture and the origins of the european world-economy in the sixteenth century. New York: Academic Press, 1974.

WESTERMEIER, Carola. Money is data – the platformization of financial transactions. **Information, Communication & Society**, 23(14), 2047-2063, 2020.

WÓJCIK, Dariusz. (2020a). Financial Geography I: Exploring FinTech – Maps and concepts. **Progress in Human Geography**, 45(3), 566-576, 2020.

WÓJCIK, Dariusz. (2020b). Financial Geography II: The impacts of FinTech – Financial sector and centres, regulation and stability, inclusion and governance. **Progress in Human Geography**, 45(4), 878-889, 2020.

AUTHOR CONTRIBUTIONS

Caio Zarino Jorge Alves: initial conception of the article, theoretical and methodological structuring, preliminary data systematization, initial drafting of the manuscript.

Adriana Maria Bernardes da Silva: initial conception of the article, theoretical and methodological structuring, critical review and final drafting of the manuscript.

ARTICLE EDITOR

Roberto Moraes Pessanha

Instituto Federal Fluminense

Campos dos Goytacazes, Rio de Janeiro, Brazil

robertomoraespessanha@gmail.com

Fábio Tozi

Universidade Federal de Minas Gerais

Belo Horizonte, Minas Gerais, Brazil

fabio.tozi@gmail.com

Beatriz Rufino

Universidade de São Paulo

São Paulo, São Paulo, Brazil

beatrizrufino@usp.br

Received: May 1, 2026

Accepted: May 20, 2026

Published: July 23, 2026