ДИГИТАЛНО ИЗОСТАВАЩ, НО ФИНТЕХ ЛИДЕР? НЕОБАНКИТЕ И ПАРАДОКСА НА ДИГИТАЛИЗАЦИЯТА В БЪЛГАРИЯ

DIGITAL LAGGARD, FINTECH FRONTRUNNER? NEOBANKS AND THE PARADOX OF DIGITAL ADOPTION IN BULGARIA





PLAMEN IVANOV

Assoc. Prof. Plamen Ivanov is reading Banking, Finance and Economics at the University of Insurance and Finance, Sofia Bulgaria, where he leads the MSc International Banking and Finance programme. He is also affiliated with Middlesex University, London (UK), and serves as a director at the ARBE. His research focuses on monetary economics, bank credit, financial geography, banking structures and post-Socialist economic transformation. His most recent research examines the institutional and spatial organization of banking, digital money, FinTech and the relationship between credit allocation, economic development and regional prosperity / inequality.

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Пламен Иванов[1]

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Abstract: This paper examines the co-existence of rapid social digitalization, limited internet banking use, and rapid penetration of mobile first banking platforms in Bulgaria. Drawing on post-Keynesian banking theory, FinTech research, and the literature on post-socialist banking transformation, it identifies a substantial gap between digital connectivity and digital financial participation, persistent regional unevenness, and functional unbundling of the banking relationship. The evidence suggests that neobanks first contest the transactional interface, while incumbent banks retain greater importance in deposits, income flows, and credit for the (real) economy. The paper interprets this as an emerging transformation and adaption of banking relationships in Bulgaria's post-socialist economy.

Keywords: neobanks, Revolut, digital banking & FinTech; Bulgaria.

JEL codes: E51, G21, G23, O33, P34.

The Second Unbundling of Banking in Bulgaria

Bulgaria presents an unusual case through which to examine the digital transformation of banking. The country is becoming increasingly connected to and integrated into the global financial markets through strategic acquisitions of local banks after the collapse of its banking system in the mid- to late 1990s (Ivanov, 2025). Concurrently, technological advancements are rapidly integrated into everyday personal and professional activities: smartphone use is widespread, electronic commerce continues to expand, instant payments have developed quickly, and the incumbent banking sector has invested heavily in digital channels (NSI, 2026; Trifonova, 2005). Yet, the use of internet banking remains well below the European Union (EU) average (NSI, 2026; Eurostat, 2026). If considered in isolation, this result would appear to place Bulgaria among the digital banking laggards in Europe. The interpretation becomes

[1] University of Insurance and Finance, Sofia, Bulgaria & Middlesex University, London, United Kingdom. p.ivanov@uzf.bg & p.ivanov@mdx.ac.uk*.

considerably less straightforward once the rapid penetration of mobile first financial platforms (e.g. Revolut, Wise) is considered.

In 2025, 86.5 per cent of Bulgarians aged 16 – 74 used the internet regularly (NSI, 2026) while 85.5 per cent accessed it through a mobile phone (NSI, 2026). Some 51.2 per cent purchased goods or services online during the preceding year. Internet banking, by contrast, stood at 31.1 per cent (NSI, 2025). The explanation cannot be reduced to digital skills alone (although these remain an important constraint). Only 38.3 per cent of the population possessed at least basic digital skills in 2025, with substantial differences by age and education (NSI, 2025).

The spatial structure is more striking still. In 2024, 67.2 per cent of the population of the EU used the internet to access banking services (Eurostat, 2025). In Bulgaria, every NUTS 2 region except for the Southwest region remained below one third. For the South-Central and Northwestern regions the recorded values were only 18.4 and 19.3 per cent, respectively. This places them amongst the three regions with the lowest use of internet banking in the EU (Eurostat, 2025). These outcomes co-exist with much broader internet access in the same regions.

At first sight, the rise of neobanks in the region appears inconsistent with this picture. Revolut, for instance, reported 670,000 retail customers in Bulgaria in October 2023, following a growth path of 47 per cent during the preceding 12 months. Publicly reported estimates subsequently passed one million customer registrations. Given the size of the Bulgarian retail banking market such a level of penetration cannot be dismissed as marginal or insignificant (Ivanov, 2025; BNB Statistics, 2025). Yet, it should not be interpreted as a direct measure of the number of customers who have replaced their incumbent bank with out-of-country headquarters (Haberly and Wojcik, 2022). A registered customer may use a platform daily, occasionally when travelling, or hardly at all. Customer penetration, active use, and primary bank status are distinct relationships and thus empirical concepts (Ivanov, 2026a; Dianosoupoulos et al., 2025).

This distinction exposes a broader problem in how banking digitization is often understood. Measures such as branch closures, mobile application users, digital payments, and registered FinTech users capture different dimensions of change. They do not necessarily reveal whether the customer has merely altered the channel through which a transaction is carried out, or has moved deeper financial relationship to a new “home”, including income generation, savings, and credit to another institution.

This matters because a bank cannot be reduced to its payment interface (McLeay et al., 2014; Rochon, 2025; Rossi, 2025). From a post-Keynesian perspective, commercial banks create new purchasing power through bank lending (Bundesbank, 2017; Banque de France, 2016). Bank lending, as an empirical study has shown (Werner, 2014a), simultaneously creates a bank asset (i.e. a loan) and a deposit liability (i.e. a customer deposit). It is, therefore, analytically different from the transfer of an existing deposit between two accounts (Moore, 1988; Rochon, 1999; Lavoie, 2014), and has, thus, different macroeconomic implications (Werner, 2014b). This distinction has remained central to the long-standing Currency vs Banking School debate and to subsequent work on the institutional nature of money and who should hold the "right to issue money" (Goodhart, 2017; Ivanov and Werner, 2022; Ingham, 2007, 2026).

This distinction is also relevant to the contemporary digital monetary system (Dianosoupoulos et al., 2025). New technology can transform payments, access, account management, and the customer experience without immediately shifting the institutional locus of money creation (Ivanov, 2026a). Ivanov (2025b, 2026a) makes a related distinction between technological innovation in the monetary interface and changes in the monetary architecture itself. Digital finance may alter the form through which money is accessed, while leaving the underlying capacity to create credit concentrated in licensed banking institutions (Werner, 2003, 2005, 2014; Ingham, 2007; Godley and Lavoie, 2007).

The Bulgarian case is particularly useful because this technological transition is layered upon an earlier institutional transformation. Following the collapse of state socialism and communist economic planning techniques (Hanke, 1994; Miller and Petranov, 2001), Bulgaria moved from a state dominated banking structure towards a two-tier banking system with extensive privatization via foreign ownership and consolidation (Nenovsky, 1999; Sariiski and Rangelova, 2013). The process altered both the organization of the banking system and the governance of credit (Caporale et al., 2001; Djankov, 2014; Ivanov, 2025a). It was part of a wider Central and Eastern European transition in which ownership, efficiency, foreign bank entry and financial stability became the principal objects of research (Berglof and Bolton, 2002).

Contemporary digitization raises a different institutional question. The first transformation asked who would own and control the bank. The present-day transformation increasingly asks whether all components of the customer's banking relationship must remain within the same institution.

The international FinTech literature provides important foundation for this question, and its possible answers. Digital technologies reduce search and information costs, facilitate remote on-boarding, lower the marginal costs of providing some services, and permit new providers to enter selected parts of the banking value chain (Philippon, 2016; Gomber, Koch, and Siering, 2017). Chen et al. (2017) interpret the transition from traditional banking to mobile internet finance as a form of organizational innovation rather than a simple technological substitution. Drasch, Schweizer and Urbach (2018) similarly demonstrate that the relationship between banks and FinTech involves both competition and institutional cooperation. Wojcik (2021) broadens the issue further by showing that FinTech has implications for financial centers, regulation, stability, inclusion and governance. These effects cannot be reduced to improvements in the customer interface.

Trust also matters. Cojoianu et al. (2021) show that the emergence and financing of FinTech firms are related not only to technological knowledge but also to levels of trust in incumbent financial institutions. This is especially relevant in post-socialist economies, where financial behavior remains conditioned by relatively recent institutional disruptions and by uneven patterns of financial inclusion.

In Bulgaria, financial literacy is another important part of this institutional setting. Jolovski (2022, 2023a) documents weaknesses in financial knowledge and the gradual expansion of financial education. Jolovski and Delinesheva (2023) place these developments within the wider European policy framework, while Delinesheva and Jolovski (2021) identify important gaps in initiatives aimed at younger and vulnerable groups. More recently, Jolovski (2024) has connected the policy agenda on financial literacy directly with banking digitization, cybersecurity, and financial inclusion. These contributions suggest that technological availability alone cannot determine the pace or form of digital financial adoption.

Against this background, the paper examines three complementary hypotheses. H1, the Financial Conversion Gap hypothesis, proposes that rising digital connectivity in Bulgaria does not translate proportionally into digital banking use. H2, the Uneven Adoption Hypothesis, proposes that banking digitalization is more spatially uneven than basic digital connectivity, so regional technological convergence does not automatically produce convergence in financial behavior. Finally, H3, the Functional Unbundling Hypothesis, proposes that the rapid penetration of neobanks (e.g. Revolut, Wise) initially reallocates selected transactional functions rather than replacing the entire relationship (e.g. income, savings, loans, FX) with an incumbent bank.

The contribution is threefold. First, the paper shifts attention from the availability of technology to the conversion of digital capacity into financial behavior. Second, it shows that national averages obscure substantial regional differences. Third, it develops a more precise interpretation of neobank adoption by separating penetration of the banking interface from transformation of the monetary core of banking relationships. From this follows a broader proposition and what we call the second transformation of post-socialist banking. The first transformation changed the bank ownership and institutional organization of centrally-planned, publicly-owned bank systems. The second transformation, that we are observing unfolding in front of our eyes, is beginning to change how customers assemble the banking relationship itself.

Banking digitalization and post-socialist transformation.

From the banking channel to the banking function

The FinTech literature has correctly identified technology as an important source of structural change in banking. Digital systems reduce the costs of searching for, processing, and transmitting information. They permit remote customer identification, continuous access (without the physical branch), and rapid scaling of services without equivalent expansion of physical infrastructure (Philippon, 2016; Gomber, Koch and Siering, 2017). The development of cloud computing, application programming interfaces, data analytics, and mobile platforms has further lowered the cost of supplying some financial services and enabled new forms of competition (Feyen et al., 2021; Boot et al., 2021).

From the perspective of the customer, early technology adoption models emphasise perceived usefulness and perceived ease of use (Davis, 1989). Later models incorporate social influence, performance expectations, facilitating conditions and trust (Venkatesh et al., 2003). These mechanisms remain relevant to neobanking. Evidence from Hungary, for example, shows that trust and technology acceptance rate are important determinants of intended neobank use (Nagy, Molnar and Papp, 2024).

There is, however, an analytical limit to an approach centered on technology adoption. A bank is not simply an application through which financial claims are displayed and transferred (Bibi, 2025). Post-Keynesian monetary theory treats banks' lending as an endogenous source of liquidity creation for the rest of the economy (Goodhart, 2017). When a commercial bank grants a loan, it creates a new asset and a corresponding deposit liability (Ingham, 2007). The bank does not need first to receive an equivalent deposit from another customer before extending that credit (Moore, 1988; Lavoie, 2014). The Bank of England (BoE) economists explain the mechanism within the British banking system. Another set of BoE

economists, Jakab and Kumhof (2015), further demonstrate why the conventional loanable funds theory is unsuitable for describing how modern day monetary systems function in the real world. Werner (2014) has settled the theoretical disputes about how commercial banks operate with the first empirical study reaffirming the credit view of the banking firm.

This distinction, we underline, has direct implications for the analysis of digital finance and the entrance of neobanks in post-socialist Bulgaria (Dianosoupolos et al., 2025). A payment transfers an existing claim. A new bank loan creates additional purchasing power and thus has different macro-economic consequences for the real economy through production, consumption and the inflation dynamics in national polities as recent research by the IMF reaffirms (Podpiera, 2026) finds. This is a long-standing verity within post-Keynesian (Keynes, 1936, Minsky, 1986, Rochon, 2025, Kappes, 2025) and Schumpeterian (Bofinger et al., 2024) economics communities, formalized in the Quantity Theory of Disaggregated Credit (QTDC) by Werner (1997, 2005) (for details see Ivanov, 2025c).

This distinction is particularly relevant for Bulgaria. Sariiski and Rangelova (2014) argue that the economic consequences of banking depend not only on the total quantity of credit, but also on its allocation across economic activities. Ivanov (2026b) similarly argues that the post-Communist restructuring of the Bulgarian banking mechanism has produced a highly-concentrated banking architecture, with important consequences for the spatial and sectoral governance of credit. In a wider comparative setting, Duan, Ivanov and Werner (2024, 2025) show that institutional design and the decentralization of credit can, materially, affect the developmental role of bank credit in post-socialist economic life. Yet, Ivanov (2025c) warns that such a decentralization needs to be matched with the appropriate human resource management and the wider economic life as "bad" credit to the real economy may lead to wholesale loss of trust in the local currency unit.

The implication is straightforward. Digitisation should be analyzed at more than one level. At the first level, technology changes the operation (Dianosopolous et al., 2025; Bibi, 2025). A paper transfer becomes electronic (Rossi, 2025). At the second level, technology changes the delivery channel (Wojcik et al., 2024). A customer moves from the branch to internet / mobile banking. At the third level, technology changes the banking relationship (Nagy et al., 2024; Ivanov, 2025b). Salary income, significant deposit balances, savings, and borrowing do not, necessarily, move from one institution to another but become "sliced-and-diced" across multiple institutions. These changes can occur at different speeds. A radical change in the first two does not necessarily imply an equivalent transformation in the third.

The distinction we are drawing out also qualifies some of the more optimistic interpretations of FinTechs. Wojcik (2021) argues that FinTech must be considered not only through innovation and inclusion but also through questions of governance, regulation, institutional power and, not least, geography. The fusion of finance and technology can alter access while leaving important forms of institutional concentration intact (Ivanov, 2025d). Ivanov (2026c) reaches a related conclusion through the spatial structure of banking. Physical proximity and financial command are not equivalent. Digital access may reduce the first without necessarily decentralizing the second (Allesandrini et al., 2009).

Preliminary balance sheet evidence supports his caution. The European Central Bank identified around 60 digital only banks in the Euro area at the end of 2025. Together, they accounted for only 3.9 percent of the banking assets, up from 3.1 per cent in 2019. Around 80 percent of their funding came from retail deposits, but average deposits were smaller than in traditional banks. The ECB associates this partly with the smaller proportion of customers who use digital banks as their primary institution. Some digital banks have developed substantial lending operations whilst others remain as digital warehouses (using the Currency School prism of the transformation of banking to 100% reserve institutions). That is to say, some neobanks retain a high proportion of assets in liquid instruments (central bank reserves and/or government bonds), whilst maintaining a relatively limited credit franchise (Garcia et al., 2025). Ivanov (2025c) comes to a similar set of conclusions about the British-based neobanks in the local banking mechanism. Thus, consumer salience can be high while balance sheets' salience remains low. This is the central distinction for our H3.

Bulgaria: From electronic banking to institutional platforms

The Bulgarian literature allows the process to be placed in a longer historical perspective. Trifonova (2004) examined electronic financial services in Bulgaria at a stage when online banking remained primarily a technological extension of the existing branch-centred banking service. The technology changed the infrastructure, but not the integrated model in which most financial services were supplied through a single incumbent bank, and her (nationwide) network. Trifonova's (2012) further work on banking information systems and cloud computing extended the analysis from delivery channels to the technological infrastructure of the bank itself.

A decade later, Zhelyazkova and Angelakis (2014) analysed internet banking, mobile banking, ATMs, and other technologies as alternative distribution channels in the Bulgarian banking industry. This was an important shift. The physical branch was increasingly contested,

but the new channel remained part of the same incumbent institution. The change was therefore from electronic augmentation towards channel substitution.

More recent research shows that digitalization has moved further into the organizational structure of Bulgarian financial institutions. Zahariev et al. (2023) demonstrate how digital transformation has become intertwined with human resource management, corporate social responsibility, and organizational adaptation. This evidence is important for several reasons. It challenges a simple explanation for the growth of neobanks. Revolut, for instance, cannot be understood merely as a digital credit institution competing against technologically passive banks. Banks operating in Bulgaria, we must recognize, have themselves undergone substantial digital change.

The very same point emerges from the development of domestic payment infrastructure. Vichev (2024) documents the rapid development of instant payments in Bulgaria through the BISERA6 infrastructure and the adoption of the European SCT Inst standard. By the end of 2023, 28 payment providers could receive instant payments, 17 could initiate them, and the annual number of instant payments had risen sharply. This infrastructure has supported the development of services such as ‘blink’ and demonstrates that digital payment innovation is not confined to neobanks. The resulting competition is therefore more subtle. It increasingly takes place between different architectures of digital banking.

The first architecture can be described as bank-led digitalization. The incumbent bank digitizes an existing customer relationship (Trifonova, 2004). The institution remains the same, but an increasing proportion of interactions move to mobile and online channels.

The second is consumer-led platformisation. The customer adds another provider and reallocates selected financial functions. The platform does not need initially to capture the whole banking relationship. It can enter through the functions where price, convenience, interface quality, or cross border usability provide the clearest advantage. The importance of this distinction becomes apparent and clearer when placed within the longer post-Communist transition. The early literature on banking transformation in Central and Eastern Europe focused on the creation of two-tier banking systems (Nenovsky, 2001; Miller and Petranov, 2001) through privatization (Kostov, 2019), foreign ownership, regulatory reform, efficiency and stability (Caparole et al., 2001; Pistor et al., 2000; Andrianova et al., 2012; Djankov, 2014). Bonin et al. (2005a, 2005b) analyse the relationship between ownership and bank efficiency. De Haas and van Lelyveld (2006, 2010) examine foreign bank behaviour, credit stability and the internal capital markets of multinational banking groups.

Bulgaria represents an especially pronounced version of the first transformation. The crisis of 1996 – 1997, the introduction of the currency board (Miller and Petranov, 2001), subsequent bank privatization, and extensive entry by foreign banking conglomerates (Caporale et al., 2001) have fundamentally changed the structure of domestic banking. Banking, indeed, stabilized but control over credit became concentrated within a smaller number of large institutions (similar to what is being observed within the wider global capitalist system see Dimsky et al., (2024)). The resulting structure remains spatially and organizationally centralized (Ivanov, 2026). The central question of the first transformation was therefore who owned and controlled the (surviving) banks.

The digital platformisation introduces a new, different question. Must all financial functions of the customer remain with the same bank?

Three broad stages can consequently be identified. During electronic augmentation, digital technology supplements the branch. During channel substitution, a growing number of operations move from the branch to internet and mobile banking. During institutional platformisation, an individual financial function can migrate to a different provider.

The third stage is qualitatively different. Competition no longer occurs only between the channels of one bank. It increasingly occurs between institutions at the level of individual financial functions.

Digital Convergence without Financial Convergence

The availability of technology does not guarantee uniform financial behavior. Digital skills, financial literacy, age, education, trust, and income all affect how consumers adopt and use financial technology (Venkatesh et al., 2003, Ferilli et al., 2024).

The Bulgarian financial literacy literature is especially relevant here. Jolovski (2022) shows that financial and accounting concepts have become increasingly embedded in formal education, but remain unevenly developed. Jolovski (2023a) reviews the evolution of financial literacy in Bulgaria and identifies persistent weaknesses in both knowledge and institutional provision. Jolovski and Delinesheva (2023) assess the Bulgarian competence framework within the wider European policy architecture, while Delinesheva and Jolovski (2021) identify gaps in initiatives aimed at building financial and entrepreneurial skills among younger people, especially those in vulnerable groups.

The literature points to an important distinction between access and capability. A customer may possess a smartphone and a reliable internet connection, but may still lack the financial confidence, knowledge or trust required to use more complex digital financial products. Jolovski (2024) makes this connection explicit. He places financial literacy alongside

digitalization and cybersecurity as a strategic challenge for the Bulgarian banking sector. As financial products become easier to access digitally, the ability to use them safely and effectively becomes more, rather than less, important.

Cojoianu et al. (2021) provide a related international perspective. Their analysis across 21 OECD countries and 226 regions finds that FinTech emergence is affected by the regional production of technological knowledge and by trust in incumbent credit institutions. Low trust can create market-entry opportunities for neobanks, but persistently weak institutional trust can also constrain investment and adoption. The relationship is therefore non-linear.

Bobeva (2021) offers a useful analogy through her distinction between nominal, structural and real convergence. Formal and institutional convergence does not guarantee the same rate of convergence in actual economic outcomes. The argument can be extended to digital finance. Bulgaria may converge in broadband access, smartphones, payment standards, and banking applications without converging at the same rate in banking behavior.

The central question then becomes not whether the country becomes digital. It clearly has. The more useful question is how far general digitalization is converted into financial digitalization, where this conversion remains the weakest, and whether the expansion of neobanks represents substitution or functional complementarity within the existing banking architecture.

Data and methodology

The paper uses a descriptive longitudinal case study design based on triangulation across official statistical, regulatory, institutional and corporate sources. The objective is to establish the structure of the Bulgarian digital banking paradox. The analysis does not claim causal identification where the available aggregate data does not permit it.

The principal source for general and financial digital behavior is the annual survey of information and communication technology usage in households and by individuals, produced by the Bulgarian National Statistical Institute (B-NSI) and harmonized with Eurostat. The regional analysis uses NUTS2 data from Eurostat and the B-NSI. Evidence on digital only banking is drawn from the European Central Bank (ECB). Corporate disclosures from Revolut are used to examine platform penetration into the Bulgarian banking market as a proxy. The Bulgarian banking sector and payment infrastructure evidence is drawn from a variety of institutional sources, including the Bulgarian National Bank (BNB), the Association of Banks in Bulgaria (ABB) and BORICA.

Two methodological distinctions are essential. First, internet banking in the official statistics includes mobile banking. An active Revolut user should, therefore, not be placed

conceptually outside the broad statistical category of internet banking. Second, the customer count reported by a company does not measure the same phenomenon as survey-based activity. A registered account does not establish how recently or intensively the account has been used. Nor does it establish whether the institution acts as the customer's main bank. Thus, we express it in the following manner:

Registered account ≠ Active user ≠ Primary bank customer

The paper therefore avoids treating neobank (i.e. Revolut) customer numbers and official internet banking usage as competing estimates of the same variable.

For H1, the analysis uses a simple descriptive indicator:

$$DFCG_t = RIU_t - IBU_t$$

Where *RIUt* is the share of regular internet users and *IBUt* is the share of internet banking users. The resulting Digital-to-Financial Conversion Gap, or $DFCG_t$, does not measure the probability that a specific internet user will become an internet banking user. The underlying series are aggregate. Their purpose is narrower. They show whether the spread of general digital participation is accompanied by a proportionate spread of digital banking participation.

H2 is assessed by comparing regional patterns in internet use, household connectivity, electronic commerce, and internet banking. Electronic commerce provides a useful robustness comparator. If residents of a region participate in online economic transactions but remain relatively unlikely to use internet banking, a simple explanation based on digital isolation becomes less convincing.

H3 is assessed through triangulation between three sets of evidence. The first is the high consumer penetration, in particular, of Revolut Bank Europe. The second is the balance sheet structure and primary account evidence for digital only banks. The third is the parallel development of digital services within incumbent banks and the domestic payments infrastructure. The hypothesis receives support if widespread platform adoption co-exists with more limited migration of primary account and credit functions.

This design has clear limitations. Most importantly, aggregate data do not permit the same individual to be observed across incumbent mobile banking, neobank adoption, income, age, education, and geography. The paper therefore does not claim to demonstrate individual

technological leapfrogging. That mechanism remains plausible, but it requires microdata and should be treated as a subject for subsequent research.

Results

H1: Digital Connectivity does not automatically become digital banking

The evidence from 2023 to 2025 reveals a substantial and persistent difference between general internet use and internet banking. In 2023, 79.8 per cent of Bulgarians used the internet regularly, while only 23.4 per cent used internet banking. In 2024, the two indicators rose to 81.9 and 31.3 per cent respectively. In 2025, regular internet use accelerated to 86.5 per cent. Internet banking remained virtually unchanged at 31.1 per cent (NSI, 2023, 2024, 2025).

Table 1. Digital connectivity and internet banking in Bulgaria

Indicator	2023	2024	2025
Regular internet use, in %	79.8	81.9	86.5
Internet banking, in %	23.4	31.3	31.1
DFCG, in %	56.4	50.6	55.4

Source: NSI and own calculations.

The change between years is more informative than a comparison of endpoints. Between 2023 and 2024, internet banking increased by 7.9 percentage points, while internet use rose by only 2.1 points. The DFCG narrowed from 56.5 to 50.6 percentage points. This suggests a period of banking catch up.

The pattern, yet, did not continue in 2025. Regular internet use increased by another 4.6 points, while internet banking declined marginally (by 0.2 percentage points). The gap therefore widened again to 55.4 points.

The three year period is too short to infer any causality or structural break. Sampling variation (by the NSI) may also account for part of the annual change. Yet, the evidence is sufficient to reject a simple assumption of automatic conversion. If lack of internet access were the dominant constraint, a continued increase in connectivity would be expected to coincide with at least some continued increase in banking use. This did not materialize in 2025.

Other forms of digital economic activity reinforce the point. In 2025, 51.2 per cent of the population had bought goods or services online, compared to 31.1. per cent using the internet banking channels. Thus, a substantial share of the population is willing to make economic decisions and payments online without reporting comparable engagement with internet banking.

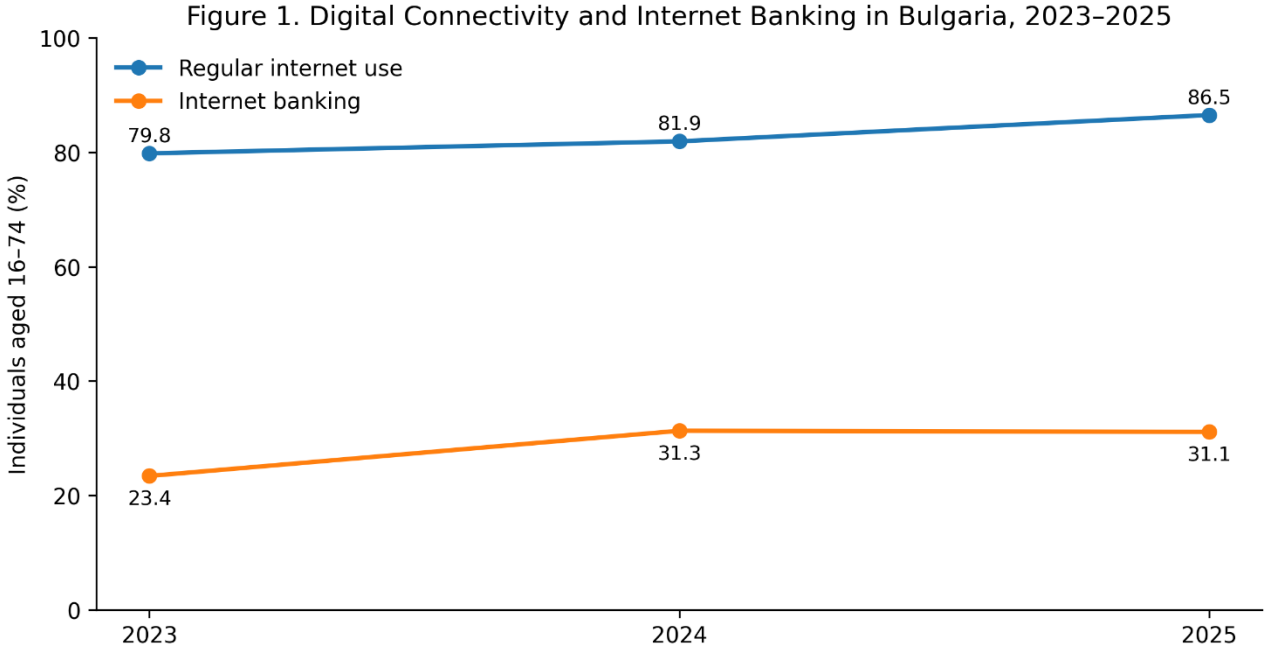
The conclusion is not that digital capabilities are irrelevant. They remain a substantial constraint. Only 38.3 per cent of Bulgarians possessed at least basic digital skills in 2025.

Among people with higher education, the figure jumps to 65.7 per cent. Amongst those with basic or lower education, it fell to the meagre 14.4 per cent. Age differences were equally pronounced. Some 56.6 per cent of the 25 to 34 age group possessed at least basic digital skills, compared with only 9.5 per cent among those aged 65 to 74 (NSI, 2025) (through this prism we can also test a further hypothesis about the interlink between migration of working age individuals and internet / banking use by older generations).

These figures are consistent with the Bulgarian literature on financial capability. Jolovski (2023a) identifies persistent deficiencies in financial literacy and significant differences in preparedness across groups. Jolovski and Delinesheva (2023) reaffirm this view and showcase that the institutional framework for financial competences has advanced, but important gaps remain between policy objectives and the systematic development of practical financial capability. The issue is therefore not simply whether a consumer can access the internet. It is whether technological capability, financial knowledge, trust, and perceived usefulness combine to support a financial decision.

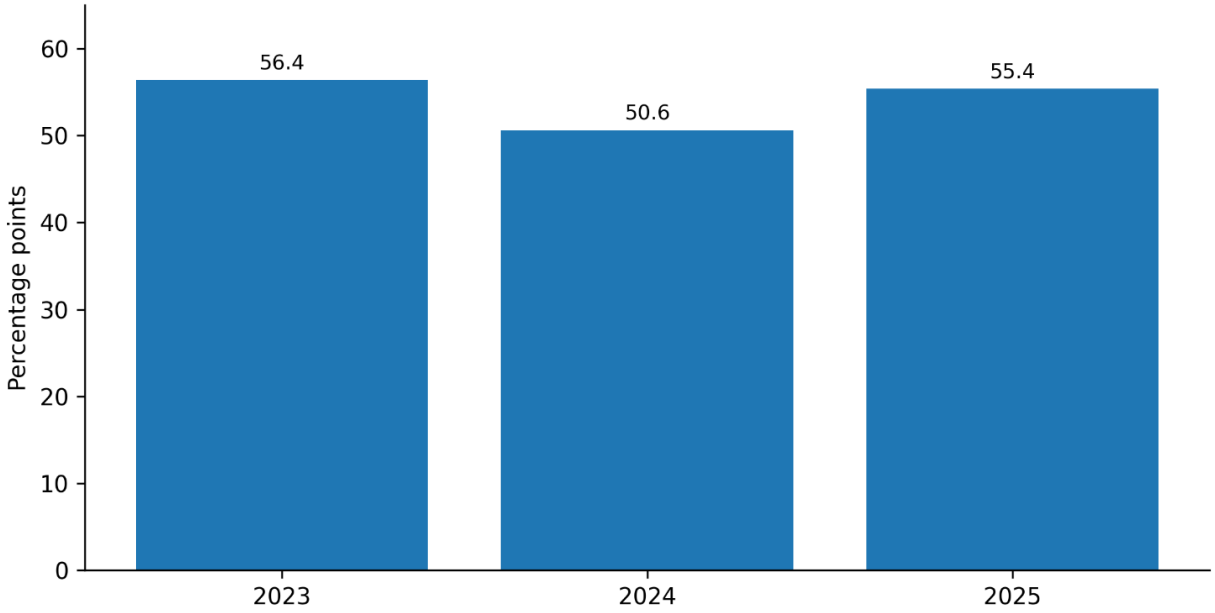
This distinction strengthens the first hypothesis. Bulgaria increasingly displays a financially specific conversion gap, rather than a digital divide that can be explained solely by basic connectivity issues.

Figure 1. Digital Connectivity and Internet Banking in Bulgaria, 2023–2025



Source: Author calculations based on NSI ICT Usage in Households and by Individuals, 2023–2025.
Note: Internet banking includes mobile banking.

Figure 2. Digital to Financial Conversion Gap in Bulgaria, 2023–2025



Source: Author calculations based on NSI data.
Note: DFCG = regular internet use minus internet banking use.

H2: Regional catch up without regional convergence

The regional evidence reveals an even stronger divergence between connectivity and banking behaviour. In 2025, regular internet use ranged from 83.2 per cent in the Southeast region to 90.4 per cent in the Northeast region. A marginal difference of about 7.2 percentage points. Household internet access ranged from 87.3 per cent in Northwestern Bulgaria to 95.9 per cent in the Southwestern region. At the level of basic connectivity, regional differences therefore remain important but are no longer extreme.

Internet banking displays a different spatial structure. In 2021, only 8 per cent of the population of the Northwestern and the South-Central regions used internet banking. By 2023, the figures had risen to 14.7 and 13.7 per cent respectively. In 2024, they reached 19.3 and 18.4 percent respectively. Over the same period, the EU average rose from approximately 58 per cent to 67.2 per cent (Eurostat, 2022, 2024, 2025).

Table 1. Internet banking in two peripheral Bulgarian regions

Region	2021	2023	2024	Change 2021 to 2024
Northwestern	8.0	14.7	19.3	+11.3 pp
Central South	8.0	13.7	18.4	+10.4 pp
EU	58.0	63.9	67.2	9.2. pp

Source: Eurostat regional yearbooks.

The result is more nuanced than a simple account of regional stagnation. Both Bulgarian regions more than doubled their internet banking rates. In absolute point terms, they grew

slightly faster than the EU average. Yet, the extremely low starting point meant that faster growth did not produce meaningful convergence in levels. This process is thus best described as a catch up without convergence.

The Southwestern region illustrates the opposite side of the same national structure. Between 2019 and 2024, internet banking use increased by 33.6 percentage points, among the largest regional increases in the EU. The same national banking system thus contains, paradoxically, one region undergoing exceptionally rapid digital adaptation and several regions that remain close to the bottom of the EU distribution.

The comparison with e-commerce provides a robustness check / proxy. In 2025, about 47.5 per cent of residents in the Northwestern region had purchased goods or services online. The corresponding figure for the Central North region was 47.6, and the Central South region reported 45.2 per cent (NSI, 2025). These rates were materially higher than the most recent levels of internet banking in the same regions. This reinforces that the internet banking activity remains weaker despite the growth of e-commerce activity in these regions.

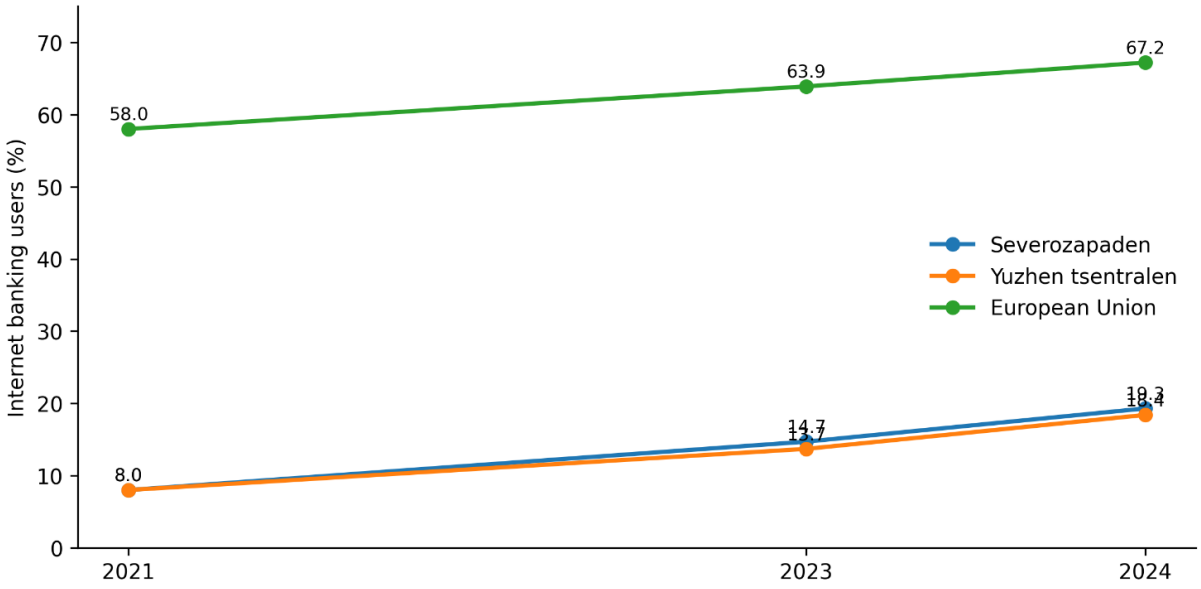
There are several plausible explanations of this observation. Demographic structure (alongside migration flows) is one. The Northwestern and the Central Northern regions are amongst the regions with the highest average / median age in the EU. Income and education are also likely to matter. Financial literacy, confidence and trust may provide further explanation but we need to collect primary data in order to claim this with more certainty. This is both a limitation to this study, as well as a pathway for further in-depth research in the topic. Yet, what the available aggregate data shows us are glimpses of those mechanisms.

The careful conclusion is therefore narrower than what appears at first glance. H2 receives support because banking digitalization remains more spatially uneven than basic digital connectivity. The gathered evidence, yet, does not establish a single causal mechanism.

This result, on one hand, is consistent with the broader geography of finance. Wojcik (2021) cautions that FinTech does not make geography irrelevant. Technology can transform the form in which distance matters without eliminating spatial differences in institutional capacity, knowledge and access. Ivanov (2026c) reaches a comparable conclusion in spatial organization of banking systems. Financial decision-making can remain geographically concentrated even when customers'wi access becomes increasingly digital(ized).

The examined Bulgarian case offers a further dimension to this train of thought. Technological convergence appears to be proceeding faster than behavioural financial convergence. This parallels Bobeva's (2021) distinction between formal and real convergence. Common infrastructure and regulatory integration are insufficient to ensure common outcomes.

Figure 3. Internet Banking in Two Peripheral Bulgarian Regions and the EU, 2021–2024



Source: Eurostat Regional Yearbooks 2022, 2024 and 2025.
Note: Persons aged 16–74 using internet banking during the preceding three months.

H3: Neobanks unbundle the banking relationship before replacing the bank

The third hypothesis concerns the economic meaning of rapid neobank penetration. Revolut reached 670,000 Bulgarian retail customers in 2023. Subsequent publicly reported estimates exceed the one million mark. On the scale of Bulgaria's population and banking market (without committing to approximate estimations), this represents a significant consumer penetration.

It does not, however, follow that incumbent banks have lost an equivalent number of (primary) customers. There are two (very good) reasons for caution.

The first comes from the wider European balance sheet evidence. Digital only banks accounted for only 3.9 per cent of euro area banking assets in 2024. Their retail funding base has, indeed, expanded, but average deposit remains smaller than those with conventional high-street / brick-and-mortar banks. The ECB associates this, in part, with the lower proportion of customers who use a digital institution as their primary bank. Moreover, while some digital banks have developed meaningful lending business, others hold a large share of their assets in reserves and other (highly) liquid financial instruments (Garcia, Grodzicki and Radulova, 2025). Similar observations are reported about neobanks in the UK though business models vary significantly across the board (Ivanov, 2025a).

The second reason is the rapid digitalization of incumbent banking itself. Bulgaria's traditional banks have not remained technologically static. The development of instant payments is an important example. Vichev (2024) shows how the domestic payment infrastructure was aligned with European instant payment infrastructure standards. As a result, instant payments are now becoming available around the clock and new consumer services, including blink P2P payments, are developing on top of that infrastructure. This illustrates a wider point. Digital banking competition in Bulgaria does not take place between a digital platform and an analogue banking system. It increasingly takes place between different institutional models of digital finance.

Thus, we must, here, highlight a new type of distinction between *consumer penetration* and *monetary penetration*. The former describes the ability of a provider to attract customers, transactions and attention. The latter refers to the extent to which the same institution captures deposit balances, regular income flows, and credit relationships.

Revolut, amongst other mobile-first digital platforms, provides early evidence of this distinction and transformation of the post-Socialist banking ecosystem in Bulgaria, at least. Its global customer base and customer balances have expanded rapidly, while lending has also begun to grow but from a much smaller base. The direction is very important. A platform that initially competed most visibly in payments and foreign exchange is gradually extending its financial services operations in deposit-gathering (i.e. deposit-taking), and credit (liquidity) creation in various countries where it enjoys the privilege of a banking license. This is not evidence the distinction between payments and banking has become irrelevant. It shows the sequence through which the distinction can eventually narrow.

This observed sequence can be, in our opinion, best understood as a step towards functional unbundling. The first functions to migrate are likely to be those for which switching costs are relatively low and require less efforts. These would include card payments, P2P transfers, foreign exchange, international transfers and travel-related spending. A customer can adopt another provider for any of these purposes without closing an incumbent current account or refinancing a loan / mortgage. In other words, the customer "shops around" for the best price in the (digital) marketplace in his "town" (i.e. the App store).

Yet, the next stage is deeper (and it is still in progress). Customers may begin to hold larger persistent balances with the platform. Salary and other regular income may then be redirected towards such platform providers. Credit represents a further stage because it establishes a new debtor-creditor relationship and links the customer to the balance sheet of the mobile-first digital credit institution.

Primary bank substitution should therefore be understood as the final stage of a multi-year process of building a bi-directional trust between consumers and providers, and more importantly we must emphasize it will be naïve to expect customers to switch right away to neobanks.

Our interpretation is consistent with the organizational innovation literature. Chen et al. (2017) show that mobile finance transforms banking through organizational as well as technological change. Drasch, Schweizer and Urbach (2018) demonstrate that FinTech does not simply replace incumbent banking. It also creates new combinations of cooperation between the two "organizational forms" of the banking business. Digital disruption can, thus, enter particular functions without immediately displacing the wider institutional relationship.

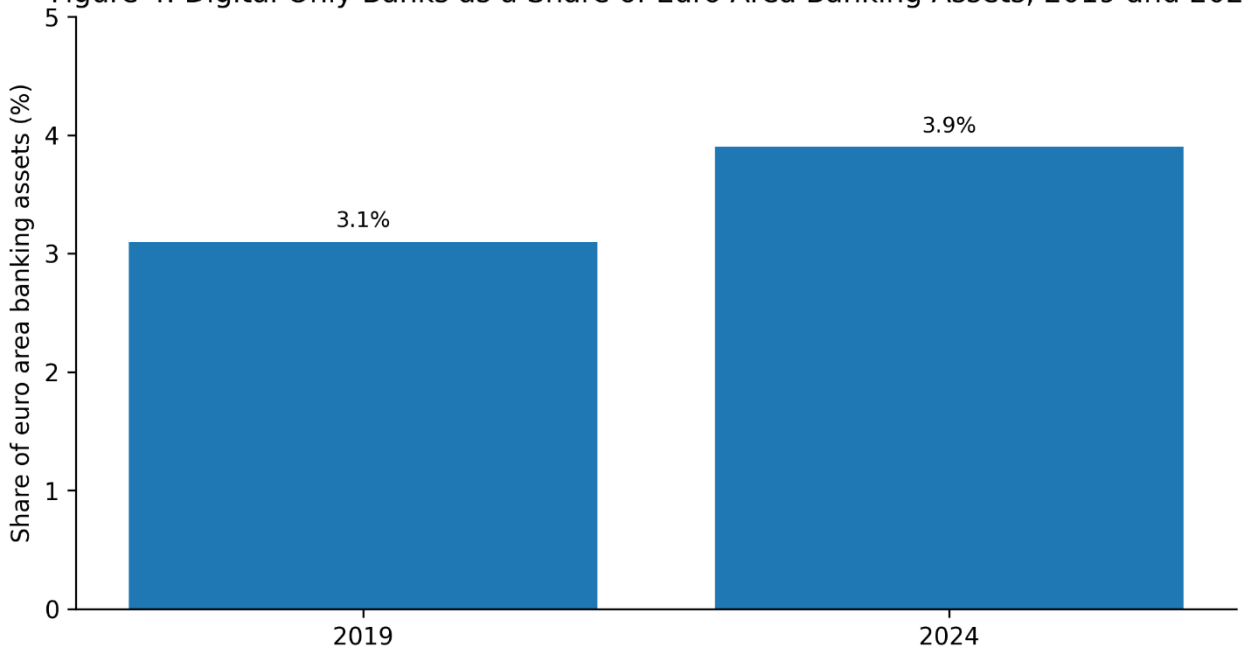
The appropriate unit of analysis consequently begins to change. Asking a consumer, "Which bank do you use?" becomes less informative when financial functions are distributed across providers in a multi-layered digital environment.

In other words, a customer may receive a salary in one bank, hold a mortgage elsewhere, use a digital platform for everyday payments, another app for foreign exchange and maintain investment accounts with (a number of) platforms across space. This does not mean all relationships carry the same economic weight. It means, on the other hand, that the traditional integrated banking bundle has become more divisible.

From a post-Keynesian perspective, this boundary remains very clear. When a provider captures (some form of) payments by a consumer, the principal change concerns the movement, and management, of existing deposit receipts (i.e. commercial bank digital money) (Dianosoupolous et al., 2024). When the same institution begins to capture a significant share of household and business lending, it also begins to affect the creation and allocation of (new) purchasing power in the local economy. We see first glimpses of this. This is precisely where the digital disruption begins to become a monetary transformation.

H3 therefore receives support. High neobank penetration is compatible with continued incumbent strength because the banking relationship is being functionally unbundled. Different components become contestable at different speeds.

Figure 4. Digital Only Banks as a Share of Euro Area Banking Assets, 2019 and 2024



Source: European Central Bank, Financial Stability Review, May 2025.
Note: Digital only banks identified by the ECB in the euro area.

Discussion and conclusion

The Bulgarian digital banking paradox is real, but not in its simplest formulation. Bulgaria is not merely a technologically lagging economy in which a small group of younger consumers has suddenly bypassed traditional banking. Nor does rapid neobank / Revolut penetration demonstrate that official internet banking statistics are misleading. The evidence points to a more complex institutional configuration.

The first result is the persistence of a large Digital Financial Convergence Gap. In 2025, 86.5 percent of the population used the internet regularly, while only 31.1 percent used internet banking. General digitization has progressed much faster than digital banking. The difference cannot be explained solely by access to technology.

Financial and digital capabilities remain as important as ever. The large age and education gaps in digital skills demonstrate that the ability to use increasingly complex services remains uneven, in spatial terms too. The work by Jolovski and colleagues (see Jolovski, 2022, Delinesheva and Jolovski, 2021, and Jolovski and Delinesheva, 2023) is of particular interest here. Financial literacy is not a peripheral educational issue. As financial services become easier to access and more complex to compare, capability becomes part of the institutional infrastructure required for effective inclusion. Jolovski (2024) extends the point to digital

banking by linking financial literacy, cybersecurity and consumer protection (which in fact is foreshadowing a recent working paper by the BIS (2026)).

The second result is spatial. Basic internet connectivity has become relatively widespread across the Bulgarian regions, but banking behaviour remains much more uneven. The Northwestern and Central South regions show genuine catch up, yet remain among the EU regions with the lowest use of internet banking. The Southwestern region, by contrast, has recorded one of the strongest increases in the EU.

National averages therefore combine rapid metropolitan adaptation with persistent peripheral weakness. This matters because digitalization is often assumed to reduce the importance of geography. It certainly reduces some forms of distance. A consumer in Vidin, Ruse or Sofia can access the same mobile interface with transactions being executed with precision instantaneously. Physical proximity to the branch matters less for such routine payments and day-to-day services offered to the consumer.

Yet, the transactional proximity is not the same as financial decentralization. Credit decisions, bank headquarters (command-and-control functions), risk management and functions, data-rich models and infrastructure can remain highly centralized. Wojcik (2021) shows why financial technology needs to be analysed geographically even when the underlying financial services are digitized. Ivanov (2026c) offers a similar account of the geography of financial command-and-control despite widespread access to financial services (measured through branch access, accounts or other typical measures of financial inclusion). Digitalization, then, may alter the geography of banking without eliminating it.

The third initial evidence suggests and concerns the interpretation of neobanks in a post-Socialist context. Revolut, for instance, should not be treated as either as little more than a digital wallet or as evidence that conventional banking has already been displaced. The evidence is more consistent with a gradual process of functional unbundling (though more, primary and secondary, data) is needed to deepen the analysis. Customers, we currently observe, initially transfer a suite of functions for which convenience, price, speed, and interface quality offer a clear cut advantage over existing offers by incumbent banks. Balance, income, savings, and credit can, and still are, remain(ing) with an incumbent credit institutions.

The process helps reconcile what initially appears to be a contradiction. A country that can display low aggregate internet banking use, a rapidly growing mobile finance engagement, and highly digital incumbent banks at the same time. These outcomes describe different groups, different functions, and most importantly different depths of financial relationship between customers and service providers.

The broader implication concerns the nature of the post-Socialist banking transformation. The first transformation after 1989 (in particular the post-1997 restructuring) operated mainly from the institutional level downwards. It chaged ownership, regulation, and the organization of the banking system. In the Bulgarian context, the banking-turned-currency crisis led to privatization and consolidation of a banking landscape.

The current transformation operates differently, and at the seams as it stands. It increasingly emerges from the customer's ability to recombine financial functions across institutions and digital platforms. A new provider does not need to acquire a domestic bank, build a national branch network, or immediately replace the (full) incumbent banking relationship with consumers in order to become economically significant. It can enter the customer relationship function by function. This we call the second transformation of post-Socialist banking.

To wit, the first transformation changed the institutional DNA of the banking sector via ownership claims and market restructuring. The second is beginning to change the architecture of the banking relationship on the micro-level.

Yet, we must highlight that our interpretation must and should not be overstated. The present evidence is descriptive. It cannot (fully) establish the individual sequence through which a specific customer adopted a neobank, nor can it show conclusively whether platform use represents technological leapfrogging. A young, intensive neobank (e.g. Revolut) user may also be an equally intensive user of the mobile application of an incumbent bank. Aggregate data, that we are using, cannot distinguish those cases.

This limitation suggests a clear future research agenda. Future work should observe banking relationships at the individual level. It should identify which provider is used for salary income, everyday payments, savings, credit and investment. It should also distinguish registered platform users from active users and from customers who regard the platform as their primary bank.

Such evidence would permit a test of the sequence proposed in this paper. The crucial question is not simply whether consumers open neobank accounts. It is which functions migrate first, which remain institutionally sticky, and when a collection of the supplementary digital relationships becomes a genuine shift in the monetary structure of banking.

This distinction matters because the digital revolution becomes economically deeper when it reaches the core of the banking business – credit issuance. Payments, we contend, transform the customer experience. Credit transforms the purchasing power and the economic trajectories of local, national and international polities.

The examined case here, therefore does not show the end of the traditional bank. It shows the beginning of a more fragmented banking relationship in which the bank no longer enjoys an uncontested claim over every component of the customer's financial life.

A (r)evolution in the banking interface is not necessarily a revolution in banking. Yet, once the revolution reaches the creation and allocation of credit, then this core distinction between the two begins to narrow.

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