

MATCHING FINANCIAL CLOSENESS WITH SOCIAL DISTANCING: NETWORKING DIGITAL PLATFORMS WITHIN A CORPORATE GOVERNANCE ECOSYSTEM

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Abstract

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The Covid-19 - Coronavirus pandemic has rapidly spread around the world, demanding for social distancing measures as a strategy to soften contagion. Whereas social closeness proves dangerous, financial proximity is increasingly needed and can be guaranteed by FinTechs or applications, like digital platforms. Networking platforms may be represented by bridging nodes like Mobile banking (M-banking) hotspots. M-banking and FinTech applications are fully consistent with distancing prescriptions and ease financial inclusion, allowing for 24/7 operativity. This study proposes an innovative interpretation of the networking properties of digital platforms and M-banking that represent a new - virtual - stakeholder, showing how they improve corporate governance interactions. Due to their scalability, platforms foster cooperative value co-creating patterns, with deep albeit still under-investigated governance implications. Network governance is a novel approach to describe the stakeholders' ecosystem, and its value-adding physical and virtual interactions. The paper shows how to match virtual financial proximity with apparently contradicting social distancing. This study represents an advance in the literature, as it investigates about its smart (digital) extensions that can represent a shield against pandemic adversities, reducing transaction costs, and information asymmetries.

Keywords: Mobile Banking, Network Theory, Digital Platform, FinTech, Smart Corporate Governance, Covid-19, Coronavirus, Financial Inclusion, Bank Desertification

Authors' individual contribution: Conceptualization - R.M.-V. (Sections 3, 4 and 7), M.C.Q. (Sections 2 and 5), and M.B. (Section 6); Methodology - R.M.-V. (Sections 3, 4 and 7), M.C.Q. (Sections 2 and 5), and M.B. (Section 6); Formal Analysis - R.M.-V. (Sections 3, 4 and 7), M.C.Q. (Sections 2 and 5), and M.B. (Section 6); Investigation - R.M.-V. (Sections 3, 4 and 7), M.C.Q. (Sections 2 and 5), and M.B. (Section 6); Writing Original Draft - R.M.-V. (Sections 3, 4 and 7), M.C.Q. (Sections 2 and 5), and M.B. (Section 6); Writing - Review & Editing - R.M.-V. (Sections 3, 4 and 7), M.C.Q. (Sections 2 and 5), and M.B. (Section 6); Supervision - R.M.-V.; Project Administration - M.B.

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1. INTRODUCTION

The World Health Organization (WHO) on March 11, 2020, has declared the novel coronavirus (Covid-19) outbreak a global pandemic (Cucinotta & Vanelli, 2020). Coronavirus disease 2019 (Covid-19) is an infectious disease caused by severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2). It was first identified in December 2019 in Wuhan, the capital of China's Hubei province, and has since spread globally, resulting in an ongoing pandemic.

The Covid-19 pandemic represents the biggest test of the post-crisis financial system to date. The global financial system faces the dual challenge to sustain the flow of credit amidst declining growth and manage heightened risks (FSB, 2020). Central banks are expanding their provision of liquidity, as they normally do during massive crises.

In this context, technology has a tool called Mobile Banking services (M-banking) for all the payment and receipt transactions to maintain social distance and stay safe during Covid-19 (Girish & Manu, 2020). The pandemic fosters a fast increase in digital payments and a sharp rise in mobile app adoption. FinTechs are part of this disrupting game. The financial sector is constantly striving to find new ways to provide financial services to the world's population as the fact that banks play a key role in promoting online businesses. The FinTech industry seems to have filled the gap in the inaccessibility of financial services, facilitating accessibility for all entities to financial tools and services at reasonable costs (Boskov, 2019).

A comprehensive description of the effects of the Covid-19 is out of scope in this study. The main target, representing the research question, is to describe how M-banking (and, more generally, digital platforms) can reshape corporate governance interactions among physical and virtual stakeholders (represented by the platform itself), building up a shelter against contagion.

M-banking applications are part of a more comprehensive financial ecosystem that rotates around bridging platforms. The links among branchless banking nodes can be innovatively explained with network theory applied to corporate governance concerns.

The topic investigated in the paper is innovative and interdisciplinary and this is a consequence of extremely variegated literature streams. The current study bridges complementary issues to find out undisclosed governance patterns. Some peculiar topics that concern the impact of Covid-related issues, like social distancing, on banking activity, may be extended to more general applications.

The study is structured as follows. Section 2 contains an interdisciplinary analysis of the literature, showing some research gaps. Section 3 is dedicated to the methodological assessment, with a reformulation of the research question. Section 4 examines digital platforms and M-banking through their networking interaction. M-banking operativity and the relationships among its stakeholders are examined in Section 5. Section 6 describes a bank-branchless society, whereas Section 7 is dedicated to the stock market comparison between FinTechs and traditional banks. A critical discussion (Section 8) precedes some concluding remarks (Section 9).

2. AN INTERDISCIPLINARY ANALYSIS OF THE LITERATURE

The literature streams that are considered in this study are extremely variegated, and, in many aspects, they are hardly interrelated. Reference to a selection of relevant papers is so preliminary to an attempt to identify some possible common denominators.

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The interacting strands of literature examined in this study concern M-banking, digital platforms, and network governance. Covid-19 literature is not reported in this study.

2.1. M-banking

M-banking is among the latest in a series of recent mobile technological innovations.

There are many definitions in the literature about M-banking. Shaikh and Karjaluo (2015) define M-banking as "A product or service offered by a bank or a microfinance institute (bank-led model) or MNO (non-bank-led model) for conducting financial and non-financial transactions using a mobile device, namely a mobile phone, smartphone, or tablet" (p. 137). According to the findings indicated by these authors in their literature review on mobile banking adoption "existing research is fragmented, constituted by various theoretical frameworks" (Shaikh & Karjaluo, 2015).

According to these authors, the digital mobile ecosystem comprises several applications, channels, and methods for conducting M-banking, as well as major services offered through M-banking channels.

Other authors underline that communication due to the constant development of mobile communication technology can be defined as every direct or also indirect monetary transaction made with a wireless telecommunication network (Mallat, Rossi, & Tuunainen, 2004; Sharma, 2011; Dwivedi, Rana, Jeyaraj, Clement, & Williams, 2017; Wu & Wang, 2005; Shih, Hung, & Lin, 2010).

In the same direction, also Fall, Orozco, and Akim (2020) point out that M-banking can be defined as a platform accessed by mobile phones to make payments, transfer funds, make deposits (withdrawals are unnecessary), and borrow money (overdraft allowed).

According to these definitions, it is possible to consider M-banking as a network based on digital platforms (Moro Visconti, 2020b, chapter 3) in which several stakeholders (banks, microfinance institutions, mobile network operators, and, obviously, users) can play interdependence roles.

Digital innovation changes the financial infrastructure and being mobile phone penetration strong and steadily increasing, financial service providers have made use of mobile money to fill the infrastructural gap (McWaters, 2016; Neumann & Plückebaum, 2017).

2.2. Digital platforms

As shown in Moro Visconti (2020a), digital platforms refer to a variety of complementary concepts that still need comprehensive systematization in the literature. A literature review on digital platforms is contained in Asadullah, Faik, and Kankanhalli (2018) and in Sutherland and Jarrahi (2018) that analyze sharing economy platforms. Spagnoletti, Resca, and Lee (2015) define a digital platform as “a building block that provides an essential function to a technological system and serves as a foundation upon which complementary products, technologies, or services can be developed” (p. 365). A socio-economic understanding of the “information society” is provided in Miller (2020).

Digital platforms are multisided digital frameworks that shape the terms on which participants interact. Digital platforms are also complex mixtures of software, hardware, operations, and networks (de Reuven, Sørensen, & Basole, 2018; Gawer & Cusumano, 2014; Gawer, 2014). They provide a set of shared techniques, technologies, and interfaces to a broad set of users; social and economic interactions are mediated online, often by apps (Kenney & Zysman, 2016). Business ecosystems can be improved by 24/7 platforms (Hyysalo, Kelanti, Sauvola, Liukkunen, & Sauvola, 2019).

2.3. From network theory to networked governance

Network theory (Bapat, 2011; Barabási, 2016; Caldarelli & Catanzaro, 2011; Erdős & Rényi, 1959; Estrada & Knight, 2015; Jackson, 2008; Van Steen, 2010) is the study of graphs as a representation of either symmetric or asymmetric relations between discrete objects. In computer science and network science, network theory is a part of graph theory: a network can be defined as a graph in which nodes and/or edges have attributes (e.g., names). An interdependent network is a system of coupled networks where nodes of one or more networks depend on nodes in other networks.

Networked (corporate) governance originates from the interactivity of network theory with corporate governance principles. The topic has been illustrated in Fenwick, McCahery, and

Vermeulen (2019) and Moro Visconti (2019) but, according to the authors, this connection is still under-investigated, showing a literature gap.

On the contrary, several economic models have been developed in the literature to explain how the diffusion of technologies takes place. Among them, technology adoption models with network externalities have been well studied (David, 1985; Farrell & Saloner, 1985; Katz & Shapiro, 1986), especially for the adoption of competing technologies, pointing out that technology is characterized by network externalities that occur when the benefit that an agent can obtain from his adhesion to a network is positively correlated to the number of members connected to the same network - besides the adoption models with “network externalities”, other models consist of the so-called “equilibrium” models (Battisti & Stoneman, 2003; David, 1991; Karshenas & Stoneman, 1993), or the “epidemic” models (Mansfield, 1961) - as described by Fall et al. (2020).

3. METHODOLOGY

The methodology of the study follows an IMRAD structure (Wu, 2011).

The literature survey illustrated in Section 2, as well as the literature survey, represents a methodological prerequisite for the study. The results are described in Section 4 (From networked digital platforms and M-banking networks), Section 5 (M-banking operativity), and Section 6 (Towards a bank branchless society?).

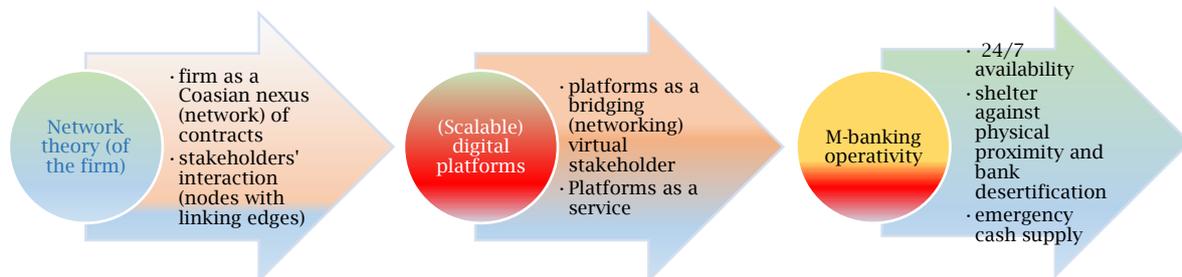
The discussion contains some critical remarks, whereas the conclusion synthesizes the main issues, and gives tips for further research.

As anticipated in the introduction, the research question is the following:

- to describe how M-banking (and, more generally, digital platforms) can reshape corporate governance interactions among physical and virtual stakeholders (represented by the platform itself), building up a shelter against contagion;
- to understand the impact of bank desertification, due to the decrease of “physical” bank branches.

The research question can be synthesized in the following graphical representation (Figure 1).

Figure 1. From network theory to digital platforms and networks of networks



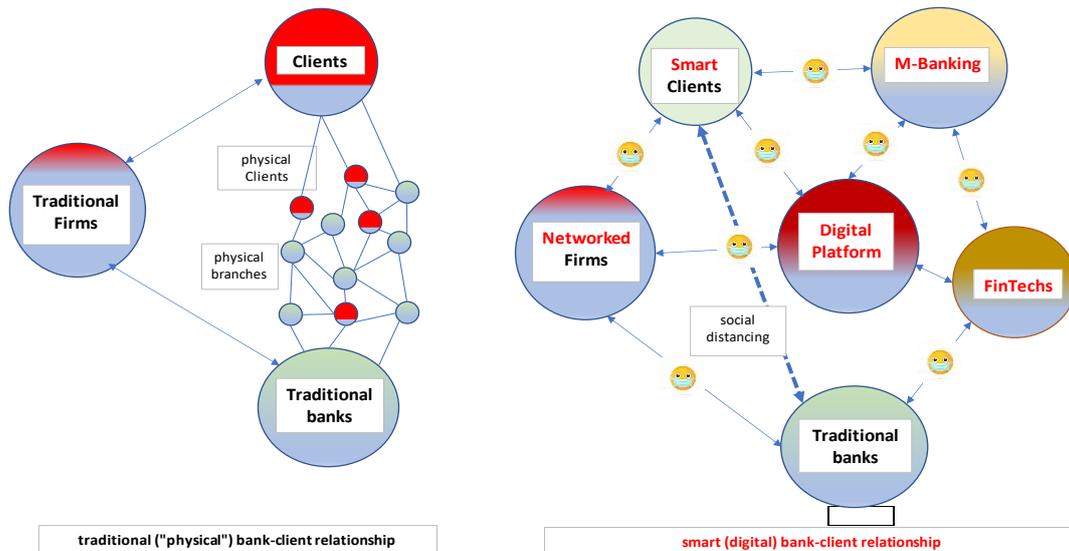
Source: Authors' elaboration.

4. FROM NETWORKED DIGITAL PLATFORMS TO M-BANKING BRIDGING NODES

The main consideration behind this study is that traditional banking activity, performed through

“physical” branches, eases social proximity, and may favor the spreading of viruses. The interaction of M-banking with complementary digital platforms and FinTechs substantially improves the situation. An example is shown in Figure 2.

Figure 2. From traditional to digital bank-client relationships



Source: Authors' elaboration.

A compared analysis of the two networks shows at first sight that digital platforms, operating under M-banking and FinTech applications, reengineer the traditional bank-client relationship, making social distancing possible.

The added value of a digital ecosystem may be estimated using a with-or-without methodology (consistently with the International Valuation Standard 210 (IVSC, 2016, § 80.1)), by comparing two scenarios: one in which the business uses the subject intangible asset (here represented by the digital platform/M-banking device) and one in which the business does not use the subject intangible asset (but all other factors are kept constant).

M-banking allows traditional banks to become internet-only (web) banks, with a switching value that is perceived by the clients (Su-Ji & Chae-Bogk, 2018).

5. M-BANKING OPERATIVITY

M-banking operativity can be examined considering the collaborative relationships of stakeholders like banks, mobile network operators, and microfinance institutions that shape their corporate governance patterns and the advantages of M-banking users.

5.1. Relationships between banks, mobile network operators, and microfinance institutions

Mobile money is a technological instrument that enables customers to use mobile phones for financial services, referring to the entire range of mobile-money-enabled financial products. Mobile payment systems require multi-institutional cooperation and interplay between different regulators.

Mobile banking is the fastest-growing channel of banking as a result few people are walking into bank branches nowadays. Banks now need to remain relevant by catering to the needs and expectations of the customers and the technology advancements, providing better services and products that customers can utilize. The role of IT in the banking

sector can be divided into two categories: Communication and connectivity, and individual and business transactions. IT enables sophisticated products to be developed with better frameworks, execution of dependable strategies, and help with communication to connect with people from different countries, businesses across the globe, geographical distance, and diverse markets (Cavus & Christina, 2016).

The player who dominates this relationship will tend to determine the kind of business model that emerges:

1) At one extreme, the mobile network operator can dominate or own the whole value chain. The resulting business model may be open to more banking institutions but will almost certainly exclude other network operators.

2) On the opposite side, when the banking institution dominates, the resulting model tends to be more open to other network operators, but less for banking institutions.

3) The middle ground might involve a partnership of almost equal responsibility by both partners and even an independent third part.

These interrelations have important corporate governance consequences on the composite stakeholders that rotate around the M-banking ecosystem.

A well-designed mobile payments solution has the potential to benefit all interested stakeholders: network mobile operators will increase traffic on their networks and hence profits from usage fees; banking institutions may get the opportunity to service a larger population, many of whom were unreachable before because of the costs of serving them exceed expected return on investment.

It is possible also to point out the usefulness of M-banking services for banking and microfinance clients that are complementary between the banking and microfinance services, on one part, and the M-banking services, on the other. This result is also observed because of the greater maturity of customers of the banking system, compared with those who are not mature. Such customers have

a better understanding of M-banking services because their financial knowledge is higher than that of others, which explains their greater propensity to adopt the technology to bridge the gap between rural development and financial inclusion (Agwu, 2020; Wieser, Bruhn, Kinzinger, Ruckteschler, & Heitmann, 2019).

Greater integration of M-banking from banks and microfinance institutions is recommended (Fall et al., 2020). As Kumar, McKay, and Rotman Parker (2010) argue, the integration of M-banking by microfinance institutions can enable them to reach new geographical areas and improve the service they provide. It is necessary also to consider the importance to encourage the promotion of financial education, to induce greater adoption of M-banking services. Financial education can lead individuals to make greater use of M-banking through a better understanding of this kind of technology and its usefulness.

Since the rise of the mobile money market in 2007, if we consider for instance the African market, it is possible to notice that mobile network operators (MNOs) are still dominant, although FinTechs and some banks are gaining power. Consequently, in these countries most mobile services were and now are offered as a partnership between a dominating MNO cooperating with a bank as the holder of funds and customer accounts.

Chironga, De Grandis, and Zouaoui (2017) emphasize that mobile money providers managed to take advantage by offering superior customer service: mobile money services are easy to access and they can offer transactions and even more advanced financial services with less effort, requirements, and transaction costs compared to conventional banks. Besides, MNOs can profit from network effects and economies of scale. Transaction costs have important agency and governance consequences (Nguena, 2019).

There are examples in African countries of mobile money that can create further opportunities that range from integrated, cross-MNO, and cross-border transactions via compatibility with service providers of worldwide cash transfers. Market integration is fostered by mobile money as it facilitates transfers and payments across different MNO operators and borders.

The market has become more connected as cooperation between MNOs emerged throughout Africa, with the effect to increase interoperability between different providers. One example of this is the joint venture between MTN and Orange, called Mowali (mobile wallet interoperability), which was announced in November of 2018 (Orange, 2018). Furthermore, both market leaders (M-Pesa in Kenya and MTN in South Africa) signed an agreement in 2018 to ensure the compatibility of transactions between the systems in 19 countries (Disse & Sommer, 2020).

Mobile money is also compatible with international cash transfer systems: some MNOs are expanding their system through cooperation with internationally operating cash transfer systems (Western Union, for example, or PayPal) to enable customers to move funds between the different accounts for a modest fee, which holds promising potential for remittance flows.

Traditionally, until recently, the mobile telecommunication industry and financial industry

have been completely separated, each with a different, clearly defined sector and market. Nowadays, however, mobile technologies have become more and more sophisticated, and new forms of payment have become a hot topic. Near Field Communication (NFC) mobile payment is a phenomenon that enables users to convert their smartphones into digital wallets. Before, paying in stores came down to using cash or cards, whereas modern payment methods enable customers to pay using their mobile phones with the help of NFC technology. This recent development of NFC technology enabled the emergence of services for mobile phone payments (Pham & Ho, 2015). Consequently, there is a growingly intensive collaboration between MNOs and banks, to offer new products and new kinds of payment services (Tomic & Stojanovic, 2018).

Mobile money technology allows users to conduct financial operations through mobile networks where cash-in cash-out services are provided by small business outlets better known as agents. The mobile money account can, therefore, be accessed without having an account at a financial institution but mobile money users who already possess a bank account can connect both accounts.

If there are challenges for financial institutions to compete with FinTech firms, there are also opportunities for collaboration. A recent and growing literature is starting to observe just the cooperation between banks and FinTech firm, that may entail several benefits: for banks, this partnership may give them the possibility to develop new customer segments, products, services, and new capabilities too; in return, FinTechs may benefit from bank reputation and also from a new source of finance and infrastructure (Asongu & Nwachukwu, 2017).

5.2. M-banking users' advantages

The rapid growth and adoption rate of mobile phones in developed and, overall, in developing countries, has resulted in an exponential increase in mobile services (Donner, 2008; Suri & Jack, 2016). The wide use of mobile phones is increasing low-income households' access to a large range of services and one of these services is M-banking (Moro Visconti & Quirici, 2014; Asongu & Nwachukwu, 2018).

Mobile financial services embody all of the opportunities given for digitalization: they have far lower transaction costs at every stage of the process, allow for better screening and credit assessment, allow lowering risk and default, remove collateral requirements, overcome high costs for financial services including application processes, and increase customer convenience and simplify service provision (Disse & Sommer, 2020). Consequently, digital innovations, and mobile money, gives a new impetus to the banking sector to improve its relationship with customers and increase performance (World Bank Group, 2019).

Progress in mobile devices development, and a synergy of three components - mobile devices, telecommunication networks, and financial services - have led to a growing number of M-banking users (Liébana-Cabanillas, Marinković, & Kalinić, 2017). This growing trend enables banks to distribute their services cheaper and timelier to

clients. Potential security deficiencies in M-banking have been minimized and come down to users' errors. Almost all M-banking applications use a PIN code when initializing; it is created by the user and it is necessary for making transactions via mobile devices, which improves the security of M-banking (Tomic & Stojanovic, 2018).

Considering in particular the developing countries, the mobile financial technology, that is virtually accessible to anyone with a mobile phone, holds the promise to leapfrog the provision of banking services thanks to the comparatively high penetration of mobile phones in contrast to the low density of banking infrastructure. It allows banks to leverage innovative and less costly business models to serve unbanked or underbanked people by overcoming existing market inefficiencies and reducing the prohibitive cost of maintaining physical bank branches in rural locations (Sharma & Al-Muharrami, 2018).

Evidence suggests that mobile phones are creating new income opportunities for the marginalized social segments in developing countries and SMEs (Donner, 2008; Esselaar, Stork, Ndiwalana, & Deen-Swarray, 2007). The actual unprecedented usage of mobile phones creates an opportunity for the massive population who own a mobile phone but no bank account to be connected to the financial system. In other terms, mobile payments can be leveraged to bring-in many people that are outside of the traditional banking system. In this way, the mobile network gets an opportunity to include more people marginalized by current non-cash solutions, helping more economic activity and hopefully positive development.

In all the technology adoption models with network externalities, users are heterogeneous, with different preferences for innovation, and they simultaneously decide whether to adopt or switch to new technology or not. In these users' perspective, M-banking can have network effects that could be considered a complementary service to exchange

money or to transfer money to other members of their network, such as family members or business partners, who do not have a bank account. Having an M-banking account, all individuals with a regular bank account can access a new network of relationships. Notably, even passive users benefit from M-banking because they can take advantage of promotions (from the mobile operator) or transfer and receive funds with other people in the same network at a very low cost (Jack & Suri, 2014). They can also receive micro-transfers of phone credits from family or friends belonging to the same M-banking network.

The use of technology to provide new and improved financial services is consistent with FinTech business models. M-banking allows users to access these services at lower costs (Ky, Rugemintwari, & Sauviat, 2019), also correcting information asymmetries in the market and eliminating unnecessary transportation as well as transaction costs. But cash payments are still the predominant means of settling transactions. Financial tools like cheques, debit cards, and electronic payment transactions are still in the provenience of big companies, government departments, and well-off individuals (Ashta & Biot-Paquerot, 2018).

Therefore, it is possible to point out that over the last decade, mobile payments, and M-banking in particular, have been disrupting traditional financial services and transforming the lives of hundreds of millions of people across developing countries, representing a key of financial inclusion (Lashitew, van Tulder, & Liasse, 2019; GSMA, 2019; Ozili, 2020; Hendriks, 2019; Chatterjee, 2020) and a prerequisite for successful mobile commerce in these countries too. This trend bears important governance implications.

M-banking can soften many financial bottlenecks, even related to pandemics, as exemplified in Table 1.

Table 1. Impact of M-banking

<i>Issue/Bottleneck</i>	<i>M-banking impact/solution</i>
Liquidity shock	M-banking provides immediate cash.
Distance from ATM or bank branch	M-banking eliminates physical distances.
Security	Digital money is cheaper to store, and more difficult to steal
Social distancing	Virtual transactions are contact-free

There are, however, some disadvantages, connected, for instance, to cyber-crimes and phishing.

6. TOWARDS A BANK-BRANCHLESS SOCIETY

Another bottleneck of the financial system is connected to the bank desertification issue. Physical branching is fading, and - wherever still present - is becoming increasingly expensive, so preventing or reducing financial inclusion. Consequences on weak and unbanked stakeholders, especially elderly and low-income people, are gloomy.

Since the financial crisis of 2008 ignited by the Lehman Brothers default, bank profitability has fallen significantly, only starting to recover in recent years but in most cases not reaching pre-crisis levels (Borroni & Rossi, 2019). The phenomenon is particularly evident in Europe, where regulators (European Central Bank - ECB and European Banking Authority - EBA) have for some

years now stressed the need for banks to implement a series of activities aimed at increasing a lasting ability to generate profits. Banks have adopted two main approaches to achieve this objective: a significant reduction in non-performing loans (NPLs) and a progressive improvement in cost efficiency. Nonetheless, at the time of the outbreak of the Covid-19 pandemic, European banks still had somewhat modest levels of profitability (average ROE of 5.9% at the end of 2019), well below those of US banks (9.5%) at the same date (EBA, 2020).

Almost certainly, in the period following the epidemic, the prospects for bank profitability will undergo further compression, due to both the economic recession deriving from the epidemic itself (with a resulting increase in non-performing loans), and to the continuation of a more generous monetary policy, necessary to deal with the impact of the recession. A recent estimate by the International Monetary Fund (IMF), based on a group

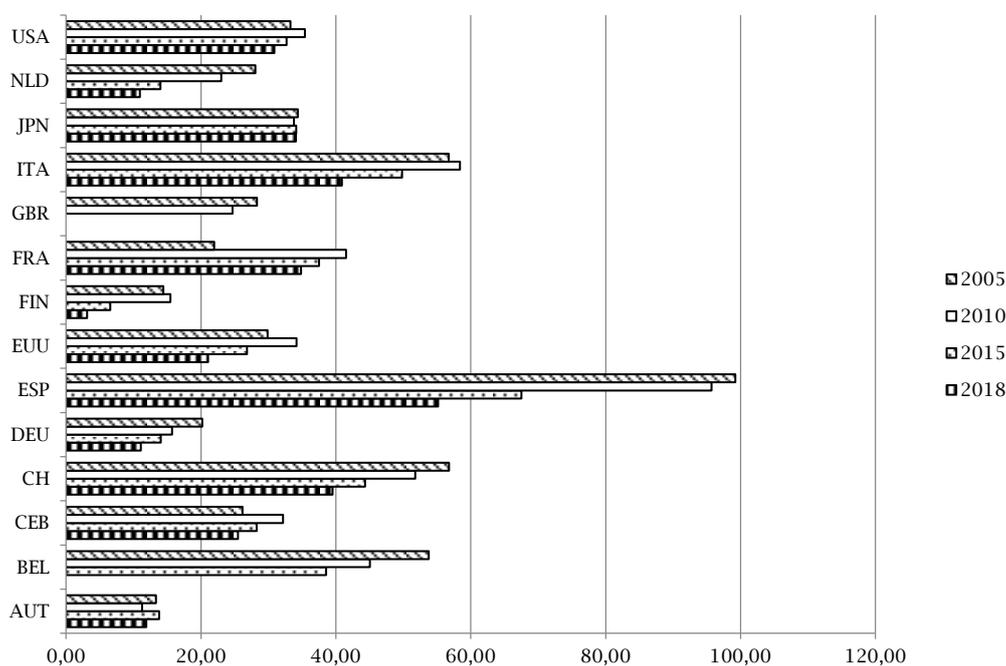
of nine advanced economies, shows that most of the banking sectors examined may not be able to generate sufficient profits to cover their cost of equity (IMF, 2020).

The aftermath of the pandemic could have a further negative consequence: many banks may be induced to delay the implementation of plans to reduce their operating costs given that organizational choices such as branch closures and staff reductions could generate reputational concerns as to the soundness of the banks themselves.

Nonetheless, it is reasonable to assume that the process of a progressive reduction in physical branches, which is now typical of all banking

systems in economically developed countries, will continue over time. Although the timing of starting point has differed, as has the speed of implementation, for a decade now there has been an increasingly marked downsizing of traditional “bricks & mortar” networks, including in countries where, at least until the early 2000s, a steady increase in the number of bank branches had occurred (Figure 3). The differences can be explained by a variety of reasons including countries’ digitalization rates, the existence of many local banks, the geographical aspects of areas served, and the characteristics of different economic and socio-demographic systems (Borroni & Rossi, 2014).

Figure 3. Commercial bank branches (per 100,000 adults) - selected countries (*)



Note: (*) Austria (AUT), Belgium (BEL), Central Europe and the Baltics (CEB), Switzerland (CH), Germany (DEU), Spain (ESP), European Union (EU), Finland (FIN), France (FRA), United Kingdom (GBR), Italy (ITA), Japan (JPN), Netherlands (NLD), United States (USA).

Source: Authors' elaboration on World Bank Data (World Bank, 2020a).

However, it is undoubtedly true that the ‘social’ consequences of Covid-19 (precautionary quarantining, social distancing) have generated a strong incentive for the use of online services by banking customers, including those previously accustomed to going to their branch. Even those banks most reluctant to reduce their branch networks could be induced to increase investments in online banking, thanks in part to the European Commission’s recent proposal to bring forward the non-deduction of prudently valued software assets (EC, 2020). This could generate some important repercussions. Firstly, a profound revision of the branch-centered distribution model: customer relations, both in-person and online, will continue to be managed by branches, supported by dedicated customer contact centers, especially for specialized activities, but bricks and mortar branch contact will play a secondary role compared to online services (Stewart, Soussan, Roussel, Dupas, Uribe, & Brugère, 2019). As a result, the traditional branch will undergo an important transformation in its

customary format as regards working hours (evening and weekend service, 24/7 online-only branches), location (mobile branch vehicles), and relations (partnerships with retailers for the sale of highly standardized products/services).

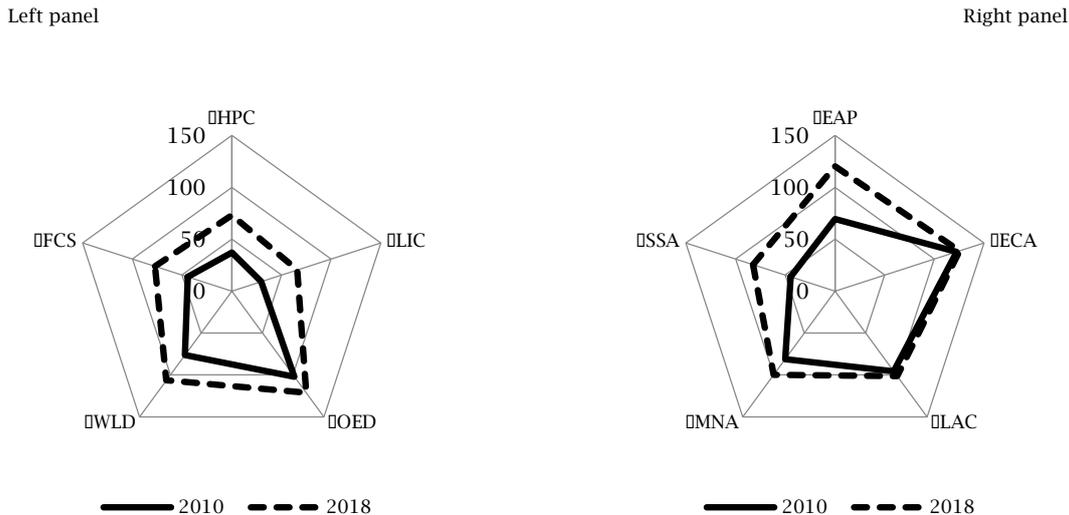
In this evolutionary process, an important role will be played by FinTech. Too often, bank investments have been focused on front-end aspects, i.e., on graphic interfaces, and not on the improvement of underlying operational (back-end) systems indispensable for improving and personalizing the customer experience, in real-time and based on data, an activity that represents the core business of BigTech and FinTech (Capgemini & EFMA, 2020). Among other things, as already mentioned above, this would favor an increase in the degree of financial inclusion of multiple subjects (people and businesses, especially small ones) who live in economically underdeveloped areas: according to the plan launched a few years ago by the World Bank (Universal Financial Access - UFA 2020), access to basic financial services in digital

form could make it possible to avoid the need for physical bank branches, increase opportunities for economic growth, and reduce the degree of relative poverty in many countries. Indeed, it should not be forgotten that despite progress made in the last decade, almost a third of adults worldwide are still without a basic transaction account (Demirgüç-Kunt, Klapper, Singer, Ansar, & Hess, 2020).

The main tool driving this process, in terms both of evolution in developed countries and of

growing financial inclusion, is represented by the mobile phone, through which multiple – and certainly the most used – banking services can be ensured. The choice of this device is consistent with its rapid spread over the last few years: even in economically less developed countries, characterized by economic fragility and widespread poverty, mobile phones are now available to large sections of the population, including in particularly difficult geographical contexts (mountains, desert areas, etc.), as testified by the data in Figure 4.

Figure 4. Mobile cellular subscriptions (per 100 people) (*)



Note: (*) Mobile-phone subscriptions are subscriptions to a public mobile telephone service that provides access to the PSTN using cellular technology. Left panel - heavily indebted poor countries (HPC), Low-income countries (LIC), OECD members (OED), World (WLD), Fragile and conflict-affected situations (FCS). Right panel - geographical areas (excluding high-income countries): East Asia & Pacific (EAP), Europe & Central Asia (ECA), Latin America & Caribbean (LAC), Middle East & North Africa (MNA), Sub-Saharan Africa (SSA).

Source: Authors' elaboration on World Bank Data (World Bank, 2020b).

A second positive aspect of this technological transformation could be avoidance, at least in part, of the creation of so-called banking 'deserts', i.e., areas where access to bank branches is impossible. This phenomenon, usually typical of economically underdeveloped countries, is also assuming growing importance in the USA, following the financial crisis of the last decade (Kashian, Tao, & Drago, 2018; Hegerty, 2020; Mende, Salisbury, Nenkov, & Scott, 2020), causing concerns among the control authorities (FDIC, 2018; Tranfaglia, 2018) because the poorest and most vulnerable minorities are concentrated in these areas, often already marginalized due to other socio-economic factors (level of education, unemployment rate, etc.). Even in Europe, similar phenomena of 'financial desertification' have already been observed, albeit for the moment only in rural contexts or in areas inhabited predominantly by older people (Burgstaller, 2017; Hasan, Jackowicz, Kowalewski, & Kozłowski, 2019). Although the presence of branches remains very important in certain customer relationships (especially with small and medium-sized enterprises, in terms of soft information, difficult to process by algorithms), the use of M-banking could, therefore, help to overcome the absence of physical points of contact with the bank, ensuring the availability of essential banking services and, after the further development

of technology, also of services with a higher level of customization. Mobile money technology acceptance represents a further issue to consider (Gbongli & Amedjonekou, 2019).

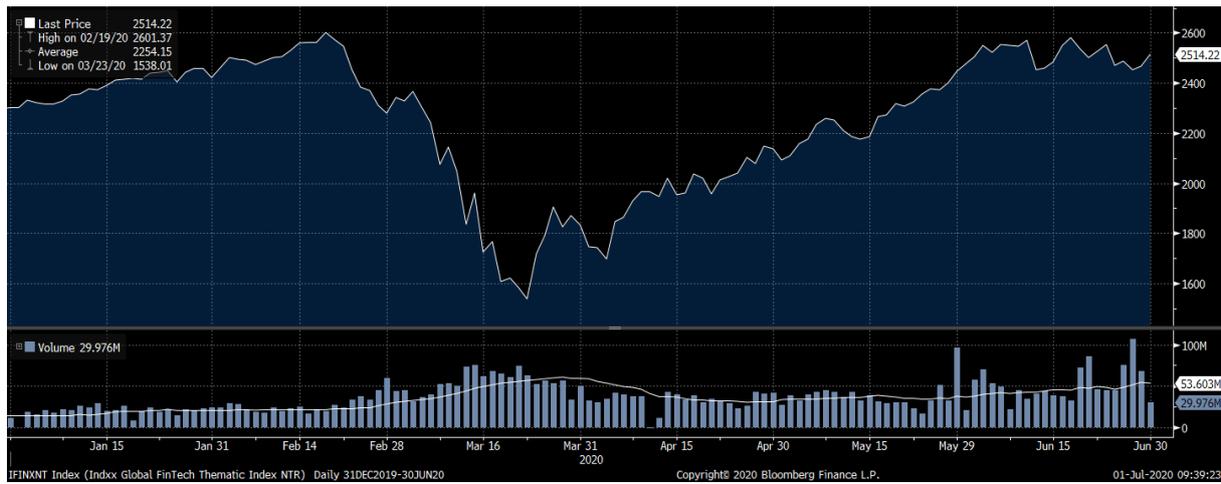
7. FINTECHS VERSUS TRADITIONAL BANKS. EVIDENCE FROM THE STOCK MARKET DURING THE PANDEMICS

The reaction of the stock market to the pandemics provides further useful insights to detect the current mega-trends, and their likelihood to change forever the competitive landscape. This occurs also in the financial intermediation industry.

FinTechs are behaving very differently from traditional banks (Moro Visconti, 2020d), and they appear more reactive to stock market fluctuations. Even though FinTechs have composite business models (including InsurTech, PropTech, SupTech, RegTech, etc., as shown in Moro Visconti, 2020c), they may represent a good proxy for mobile banking applications, so showing which is the market mood.

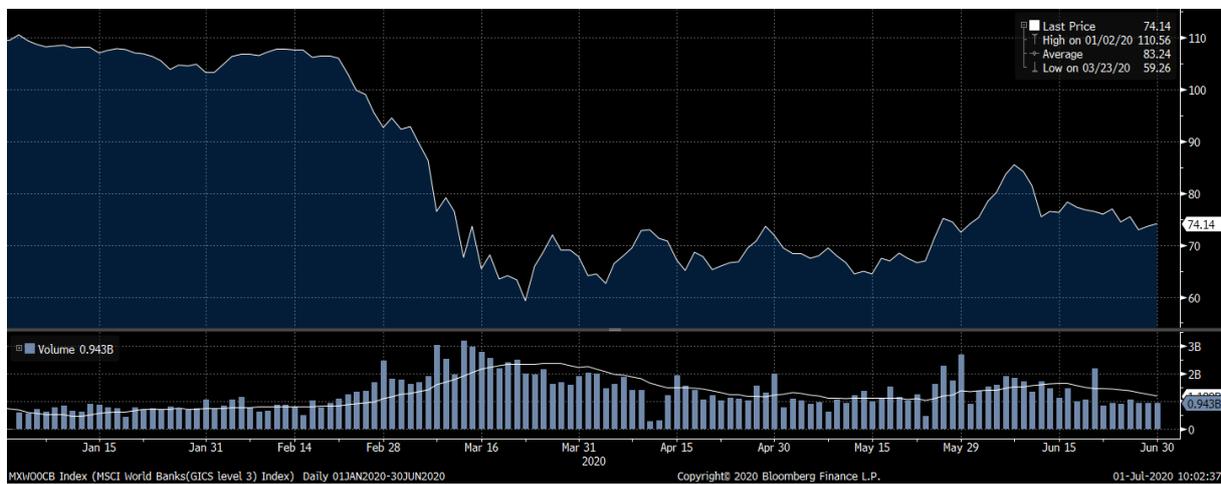
Data from Bloomberg covering the first semester of 2020 compare a sample of FinTechs from the IFINXNT - Index Global Fintech Thematic Index with the MXW00BK - MSCI World Banks Weighted Equity Index. Stock prices are reported in Figures 5 and 6.

Figure 5. Stock market prices of a FinTech Index



Source: Bloomberg (2020).

Figure 6. Stock market prices of a banking index



Source: Bloomberg (2020).

A compared analysis of the two graphs indicates that, after a collapse of both indices in the second half of February 2020 – the first half of March, FinTechs have recovered, whereas banks are still consistently below their pre-Covid prices. This is due to several reasons, such as:

- The resilience of FinTech business models that are digitalized, so favoring social distance.
- The very fact that banks (and their stock market perspectives) are affected by the gloomy forecast of the Covid-driven recession, with an impact on their clients and a worsening of the lending portfolio.
- The fact that most banks, unlike FinTechs, own Treasury Bonds/bills and other investments that may incorporate higher default risk.

These differences bear important governance consequences. For instance, whenever stock prices increase (or bounce back to pre-crisis levels, as it happens for FinTechs), they reduce the cost of capital and the conflicts of interest among composite stakeholders. And listed stocks represent a benchmark for promising startups before an IPO.

8. DISCUSSION

A discussion of the main findings of this study is preliminary to some concluding remarks. The main points may be represented by the corporate governance implications of digital platforms and the regulatory consequences.

Corporate governance relationships among the stakeholders are reshaped by the presence of digital platforms that represent a digital stakeholder and a bridging node among other more conventional players.

Digital platforms normally convey traffic of data and transactions. (Big) data soften information asymmetries that represent the main governance concern.

Transactions are possible whenever platforms act as an e-commerce intermediating hub or – in our case – when they are linked to M-banking apps, increasingly powered by FinTech solutions.

The digital scalability and resilience of platforms can be enhanced by artificial intelligence interpretation of big data (typically stored in the cloud) and validated by blockchains.

The development of M-banking presents two critical issues from a regulatory point of view: first

of all, it is necessary to strengthen safeguards for the protection of users of financial services accessible through online channels (cyber-attacks, misleading news, misleading behavior by producers, etc.). Many mobile phone owners are financially "at-risk", due to a somewhat limited, if not completely absent, awareness of the operating mechanisms of even the simplest financial services (World Bank, 2017). Ease of use of services could lead to an underestimation of the legal and financial problems associated with certain transactions, for example, the possibility of using forms of credit for purchases, and the growing level of debt that characterizes the weaker sections of the population.

Secondly, the development and diffusion of FinTechs offering financial services like those offered by banks can generate confusion among users, leading them to equate these services with those traditionally provided by banks. However, it should be borne in mind that while credit institutions are subject to strict regulation and supervision, FinTechs operate in a much 'softer' regulatory environment but also enjoy a very limited, if not completely absent, level of protection if problematic situations arise. The recent bankruptcy of Wirecard, a German FinTech specializing in the provision of electronic payment services, has underlined the issue of the possible consequences of a business crisis in the segment of online financial service providers. The Expert Group on Regulatory Obstacles to Financial Innovation has recently moved in this direction, commissioned by the European Commission to outline a framework for technology-enabled provisions of financial services in the European Union. The approach adopted does not provide for specific provisions for individual financial services, but contains some important recommendations to ensure that alongside healthy sector competitiveness, adequate safeguards for consumers and businesses are guaranteed, with appropriate mitigation of the risks normally associated with these services (EC, 2019).

M-banking is still part of a highly supervised financial industry, even to avoid the risk of circumventive innovation, bypassing somewhat old-fashioned rules. Even in the FinTech industry, RegTech and SupTech are emerging as two innovative businesses, concerning the technological aspects of regulation.

The governance implications of supervision are well known and documented. Banks are profoundly different from nonfinancial firms and there are at least three features that make them special: 1) regulation; 2) the capital structure (including the supervisory capital), 3) the complexity and opacity of their business and structure (de Haan & Vlahu, 2015).

Sound bank-corporate governance is a crucial element for promoting a more resilient financial system and sustaining economic growth (Brogi & Lagasio, 2018).

If we consider the role of mobile payments and M-banking in a vital financial services network, we have also to underline that there are much necessary policy and regulatory implications. If this network must work successfully, multiple stakeholders with varying interests need to work together. These may include banking institutions, telecommunications operators, payment processors,

regulatory agencies, government departments, the private sector, and so on. Consequently, there is a need for high-level guidance in the form of a national strategy within which various players may interact to offer truly transformational payment systems. Besides, the myriad of laws and regulations that relate to financial institutions, on one-hand, and telecommunications operators, on the other, had to be scrutinized and synchronized to enable a successful implementation of mobile phone payments within the context of the country.

There is the opportunity to look beyond all the potential problems that may arise and instead focus on the potential that can be generated by this kind of network. Besides harmonizing their activities, regulators need to build up their institutional capacity to be able to keep pace with social, technological, and economic changes.

Many of the current business models, dominated by either network operators or banking institutions, tend to lock out the competition. Open business models are needed to accommodate multiple stakeholders, creating a nationwide solution. Beyond the regulatory hurdles, the diversity of stakeholders (telecommunication platforms, interfaces) is yet another challenge, that may necessitate third party institutions (Ndiwalana & Popov, 2016).

Successful mobile payments have the potential to revolutionize payment systems, above all in developing countries, transforming how small businesses operate and, also, providing services for the financial needs of many poor people in distant rural areas more economically where there aren't bank branches. With a successful mobile payments model, there can be a breeding ground for more innovative mobile phone applications that can respond to the needs of small businesses. For example, many small businesses have problems accessing credit partly due to poor record-keeping. Mobile payments can generate a trail of transactions that may be used to create appropriate business records (Ndiwalana & Popov, 2016).

There is a need to experiment with different business models that create an enabling regulatory environment to accommodate multiple players, even competitors from the same industry.

In many developing countries the telecommunications sector is growing rapidly thanks to increasing liberalization. The cost of owning a mobile phone and accessing services is falling due to increased competition among the growing number of operators.

Many governments, having noticed the potential of the mobile phone explosion, unfortunately, react by increasing taxes on mobile services, since operators provide an easy avenue to collect such taxes. So, while operator competition is driving prices down, taxation increases service costs, limiting the potential positive impact that M-banking can have in connecting people. For this reason, it is time that all stakeholders ignore their own interests and work together to make this a win-win reality.

9. CONCLUSION

Covid-like pandemics deeply reshape the relationships among interacting stakeholders, with long-term effects that may survive the emergency. The adverse effects of pandemics are many, even

from a socio-economic perspective. They may, for instance, exacerbate financial exclusion, especially for the underserved poor. M-banking emerges as an aseptic application that can foster economic inclusion, preserving social distance protocols. Digital platforms emerge as a key virtual stakeholder, due to their bridging properties and networking attitudes that may foster financial inclusion, widening the financial ecosystem, and making it more resilient to external shocks like the Covid-19 pandemics.

New financial intermediaries, like FinTechs or BigTech firms, complement the business activity of traditional banks that still rely on resource-absorbing physical branching.

This study has shown that these digital interactions, mastered by networking platforms, deeply reshape the relationships among the composite stakeholders (unbanked or underbanked clients, traditional bank clients, financial intermediaries, etc.) that populate the financial intermediation ecosystem. These innovative insights are part of network governance (Moro Visconti, 2019), a new literature strand that reinterprets the corporate governance relationships among traditional stakeholders considering their networking interactions, and the mediating role of

virtual platforms – an emerging virtual stakeholder that adds value to the whole ecosystem. The main theoretical contribution of the study is represented by an application of an innovative approach, network governance, to a vital issue represented by financial exclusion.

The main limitations of the study concern a still missing empirical evidence of some trendy issues, as the function of bridging platforms, and their economic impact in terms of transactional savings in a difficult context where financial exclusion represents a core capital rationing concern. Subsequent references to supply and value chains populated by value co-creating stakeholders, and re-engineered around the digital platforms, also deserve further scrutiny, and may represent a tip for new literature advances. Since platforms mainly intermediate online transactions and (big) data exchanges, they are intrinsically fit for reducing information asymmetries, and consequent conflicts of interest; this represents a further under-investigated issue.

An extension of the network governance principles to other trendy fields of investigation may be recommended to visionary corporate governance researchers and practitioners.

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