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From FinTech to BigTech: an evolving regulatory response

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De FinTech a BigTech: una respuesta regulatoria en evolución^a

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Abstract

The digital transformation of financial services has led to the opening up of the market to new providers, giving rise to a new competitive environment characterized first by the unbundling of services by FinTech start-ups and increasingly by the re-bundling within BigTechs' digital ecosystems. Policymakers responded first to the FinTech phenomenon with a piecemeal approach, defined and implemented mainly at the national level, that sought to ensure an adequate control of new risks while promoting innovation-enhancing competition. In this article we argue that BigTech's entry is likely to more significantly change the structure of the financial industry and therefore the magnitude and nature of risks. Therefore, we explain why and how policymakers' mindset should evolve towards a more comprehensive response to ensure the financial sector remains safe, stable and open to competition.

Resumen

La transformación digital de los servicios financieros ha llevado a la apertura del mercado a nuevos proveedores, dando lugar a un nuevo entorno competitivo caracterizado primero por la desagregación de servicios por las *startups FinTech* y, cada vez más, por la re-agregación dentro de los ecosistemas digitales de las *BigTech*. Las autoridades han respondido al fenómeno *FinTech* con un enfoque fragmentado, definido e implementado principalmente a nivel nacional, para controlar los riesgos y promover la competencia y la innovación. En este artículo argumentamos que la entrada de las *BigTech* puede cambiar de forma más significativa la estructura de la industria financiera y, por tanto, la magnitud y la naturaleza de los riesgos. Por lo tanto, explicamos por qué y cómo debe evolucionar la mentalidad de las autoridades para proporcionar una respuesta más holística que asegure que el sector financiero sigue siendo seguro, estable y abierto a la competencia.

Keywords/Palabras clave: financial regulation, financial markets, digital markets, competition policy, data regulation financiera, mercados financieros, mercados digitales, política de competencia, datos

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1. The digital transformation and competition in finance

The financial sector has always been a pioneer in adopting technological innovations, with the aim of enhancing efficiency and improving the service offered to its customers. However, the most recent wave of digital transformation that has shaken the economy, and evidently also the financial sector, is proving to be radically different to previous waves, and thus is leading to a more profound reconfiguration of the financial industry. Three factors illustrate this statement.

First, it has led to a radical shift in clients' needs and expectations. Consumers, used to receive immediate, ubiquitous and convenient digital services (e.g. social media or e-commerce), have extended those expectations to their providers of financial services. This has led to the appearance of new channels for distribution and customer service (i.e. electronic banking webs and mobile apps). This enables new providers to exploit the opportunity of entering into the financial space with more cost-effective digital distribution models. Second, this process of digital transformation is marked by an exponential technological change, mainly due to the appearance of enabling technologies - most notably, cloud computing - that are increasing computing power while reducing its cost. By enabling companies to consume on-demand computing and software capacity, cloud computing provides more efficiency, scalability and flexibility than traditional systems and thus is lowering barriers to entry to markets that make an intensive use of IT, such as the financial sector. Third, permanent connectivity and the digitisation of interactions through digital distribution models are driving exponential growth in the volume of data that is generated, while the aforementioned technological change is enabling the storing (cloud computing) and the processing and analysis (the exploitation of big datasets and the use of artificial intelligence) of that data. The greater availability of data in the overall digital economy has also lowered some barriers to entry in finance, given the value of information beyond the product or service where it has been generated.

The combination of these factors has thus led to the opening up of the financial services market to new providers, giving rise to a new competitive environment populated by a myriad of companies: fintech startups first and increasingly large technology companies. This increased competition, despite having obvious benefits, could have implications for financial stability, consumer protection and the integrity of the financial system that require a response from supervisors and policymakers (González-Páramo, 2017). In this paper we will explore how different types of companies have made their inroads into financial services and the implications of this for the aforementioned public policy objectives. Moreover, we will explore how authorities have responded to these challenges so far and discuss how their mindset should evolve to define the optimal stance towards pending public policy challenges

2. A piecemeal regulatory response to FinTech and the unbundling of financial services

The first wave of those new competitors were small, digital-native startups which have come to be referred to as *FinTechs*¹. These new entrants are characterized by their specialization, as they tend to concentrate on specific segments of the banks' value chain. Furthermore, they have shown a tendency to focus on those financial services that are subject to a less stringent regulatory framework, are not capital-intensive or show higher returns on equity, such as payments, credit-related services that do not entail deposit-taking (i.e. crowdfunding or marketplace

¹ The Financial Stability Board (FSB, 2019a) defines FinTech as "technology-enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on the provision of financial services." The wording FinTech firms or FinTechs is also used in this paper to describe firms whose business model relies on those innovations.

lending), or applications that help customers manage their finances (i.e. account information aggregators or automated financial advisors).

These companies try to revamp the way financial service providers create value for their clients, by designing and delivering fully digital products and services with a great user experience. They have the advantage of starting without the burden of having to maintain a physical distribution network. They also benefit from state-of-the-art technologies and are not constrained by legacy IT systems or the rigidities of corporate culture (Vives, 2019). The initial objective of these new entrants was to disrupt traditional business models, de-coupling banking products and services from traditional financial institutions, and making traditional banking relationships unnecessary.

However, consensus is now building on the impact of FinTech companies being less disruptive than initially foreseen. Several reasons support this assessment. First, FinTech companies have found substantial limits to scaling, driven mainly by the high cost of acquiring new customers, the majority of which seem to prefer integrated financial services solutions from a trusted provider. The latter seems to be confirmed as many FinTech firms have lately started to move towards the aggregation of products and services, even becoming banks where the regulation facilitates obtaining a banking license. According to the European Banking Authority (EBA), most payments institutions in the European Union (EU) are currently focusing their strategies in expanding their offering and entering new markets (EBA, 2019a).

A second reason can be found in banks' reaction to the FinTech phenomenon. On the one hand, most banks have made significant investments with the aim of gaining agility and improving their digital offerings. On the other hand, most banks have adopted a collaborative stance towards the FinTech companies, forging strategic alliances and partnerships and making substantial investments in these companies². As a result, the strategy of many FinTechs now is targeted at partnering or offering white label solutions to incumbent banks.

Given their relatively small size, the predominantly cooperative/collaborative relationship, and the fact that new business models rarely have entailed a significant change in risks, the impact of FinTech firms on financial stability has been assessed as being low (FSB, 2019a). Not surprisingly, FinTech developments have not resulted in a significant upheaval in the structure of financial regulation and supervision. Notwithstanding, regulators across jurisdictions have strived to deal with new or evolving challenges - mainly related to consumer and data protection, operational resilience and Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) - while trying to reap the benefits associated with enhanced competition and the innovation brought forward by FinTech companies. In the pursuit of those two objectives, financial authorities have resorted to two main types of policy responses³: those aimed at filling existing loopholes in the regulatory framework and those that seek to promote innovation by the different players.

2 According to the EBA (2018b), the most predominant relationship between incumbent financial institutions and newly established FinTech companies is one of collaboration and partnership. In fact, 95% of the financial institutions consulted to elaborate the report claimed having an ongoing relationship with Fintech firms. Furthermore, the same report also stated that 76% of EU banks have invested in FinTech firms (e.g. venture capital).

3 Although not specifically targeted to respond to the entry of new competitors, financial authorities have also taken actions to provide legal certainty for the effective application of technological innovations (such as cloud computing, distributed ledger technologies or artificial intelligence) in the financial industry. In most cases, though, policies have also focused on limiting potential risks associated with the use of a technology or with the increased dependency on third parties.

Introduction of new licensing and supervisory regimes

The entry of new FinTech competitors has contributed to the emergence of new services or business models, not covered under existing regulations. In the ongoing process of ensuring that the regulatory perimeter is fit for purpose, authorities have seen merits in the introduction of new activity-specific licencing frameworks (EBA, 2019b). Generally speaking, these rules apply to both banks and non-bank players and usually deal with consumer and investor protection - most notably, the safeguarding of customers' funds - and market integrity, in the context of a particular product or service. Nevertheless, the introduction of such frameworks also responds to policymakers' desire of enabling the spread and scaling of novel services or business models by providing trust to the market. Developments in this front have been uneven among the different financial sector verticals:

- **Deposit-taking.** This is a highly standardized, tightly regulated activity which remains exclusive to institutions with a bank charter. Developments in this front are often limited to providing support to facilitate the authorisation process for credit institutions with a technology-intensive business model. For instance, the European Central Bank issued guidance on how credit institution authorisation requirements apply to new entrants with FinTech business models, while in the United Kingdom (UK) financial authorities set up the New Bank Start-up Unit to support applicants for a bank license. Some jurisdictions, though, have introduced targeted licensing frameworks for digital-only banks, such as Singapore and Hong Kong (Ehrentraud, J. et al., 2020).
- **Payments and other store-of-value services.** This is probably the area that has seen the greatest innovation in recent years, and thus the regulatory framework has been subject to deeper changes. In the EU, for instance, this has materialized in the Second Payment Services Directive (PSD2)⁴, which in addition to reinforcing the security of payments operations, has extended the regulatory perimeter to cover services that were being offered in the EU market but were out of the scope of the first payment services directive. This refers to payment initiation services (PIS) and the aggregation of the information on balance and movements of several payments accounts held by the client in different institutions (AIS or account information services). The main characteristic of these services is that the provider does not need to operate the payment account, but instead can access the information or initiate operations (with the consent of the customer) in the payments accounts she holds with other institutions. These companies are generally known as third-party providers or TPPs. In many jurisdictions, the regulatory framework has also incorporated another type of company operating in the payments field: electronic money institutions⁵. These companies can usually provide the same services as payment institutions, as well as offer store-of-value services in the form of digital wallets or multipurpose prepaid cards. They are thus allowed to hold client money when they issue electronic money equal to the fiat currency deposited by the client. E-money institutions are not allowed to intermediate or invest those funds. The payment space is thus increasingly formed by different types of entities (payment institutions, electronic money institutions, providers of account information and payment initiation services⁶). All these companies need to be authorised or registered by competent authorities, but requirements (prudential, operational, informational and security) vary hugely between AIS providers on the lighter end and e-money institutions on the other. Most notably, these institutions are subject to requirements to guarantee the safeguarding of customers' funds, which demand they set aside those funds in liquid, safe investments, which usually are accounts at commercial banks.
- **Lending.** Innovations in the lending space have taken different forms. In some cases, FinTechs have engaged in lending with their own funds. In most jurisdictions this falls within existing frameworks for non-bank providers of credit, and generally brand new regimes have not been crafted (Ehrentraud, J. et al., 2020). However,

4 Directive (EU) 2015/2366.

5 Electronic money and e-money are used interchangeably throughout this document.

6 Credit institutions are usually entitled to perform the same activities permitted to payment institutions.

lending or crowdfunding marketplaces have introduced a different business model from that used by banks and other credit providers. These platforms do not provide credit themselves (nor with their own capital or through financial intermediation), but instead connect savers and borrowers and enable them to directly sign credit agreements. As a result of the expansion of this market, governments around the world issued local regulations or guidelines with different approaches. These provisions generally cover issues related to the role of the platforms, transparency, reporting and the protection of users (including through the establishment of investment limits). It must be noted that in most jurisdictions crowdfunding (lending or equity based) is the only platform-based marketplace activity that has been brought into the financial regulatory perimeter⁷.

- **Crypto-assets and related activities.** Regulation in this field differs significantly across jurisdictions. Authorities have often issued warnings, informing investors of the risks and safeguards and clarifying the regulation applicable to issuers, holders and intermediaries. However, significant uncertainties remain on the nature and treatment of different types of crypto assets. Also, in most jurisdictions authorities have sought to control risks of AML/CFT by including providers and intermediaries in these markets (i.e. exchange platforms and custodian wallets) as obliged entities in AML regulations. Moreover, several authorities have gone further and have banned specific activities related to crypto-assets (e.g. China or India), or have issued dedicated regulation (e.g. France) (Ehrentraud, J. et al., 2020). Further work is underway both at global and EU level to classify crypto-assets and decide on the appropriate regulatory treatment for each type⁸. More generally, this is the area where we expect more regulatory developments in the foreseeable future given the rapid market developments and the existing regulatory gaps.

Promotion of innovation by all players

Most jurisdictions have made efforts to actively promote digital innovation in financial services, creating the appropriate policy enablers, ensuring that all players have access to key inputs or facilitating experimentation. The following is a non-exhaustive list of public policies with that aim:

- **Policy enablers.** Many jurisdictions have undertaken reforms to allow financial institutions and new FinTech companies to use digital technologies to identify and verify the identity of their customers remotely, thus enabling the provision of end-to-end digital financial services. These efforts have often taken the form of regulatory changes aimed at reducing unnecessary obstacles. In other countries, especially among emerging markets, the public sector has played a crucial role by encouraging or developing dedicated solutions and infrastructures.
- **Access to key inputs for the provision of financial services.** Information has always been a key input for any activity in finance, but digitisation is increasing the importance of accessing data and information, as many products and services are data-based in the digital economy. Also, new processing capabilities and analytical tools allow a more sophisticated and intensive use of data. Within this context, several financial authorities have taken steps to facilitate new players access to customers' data, with their consent, under Open Banking ecosystems. In the EU, for instance, this has been regulated under the aforementioned PSD2 which grants access to bank accounts to third-party providers, acting on behalf of the client. Furthermore, the development

⁷ EBA (2019b) suggests that additional consideration might be needed for some marketplace-related activities (i.e. deposit marketplaces) that sit outside the perimeter.

⁸ In December 2019, the European Commission launched a public consultation on the regulatory framework for crypto-assets. Also, the Basel Committee on Banking Supervision (BCBS) issued a discussion paper on the prudential treatment of banks' exposures to crypto-assets (BCBS, 2019a).

of standardised Application Programming Interfaces (APIs) will provide a more efficient and secure mechanism for exchanging data or conducting banking operations (BCBS, 2019b).

Rules on the exchange of customers' information are not restricted to the financial sector, though. For instance in Europe the new General Data Protection Regulation (GDPR)⁹ includes a right to data portability of personal data. However, firms are only "encouraged" to develop interoperable formats and data will only have to be directly transmitted between firms "where technically feasible", which raises questions on its practical effectiveness (Fernández de Lis and Urbiola, 2019). On the other hand, Australia's open banking rules are embedded within a broader Consumer Data Right¹⁰, with plans to allow users to also share data held in the energy and telecommunications sectors, and potentially data held in digital platforms.

Moreover, authorities have also sought to allow new competitors access key payments infrastructures. As already discussed the European PSD2 has allowed third parties authorised as payment initiation service providers to access bank account data and initiate payments on behalf of clients.

- **Innovation facilitators.** Acknowledging that regulatory obstacles or uncertainties might come to hinder the development of innovative financial solutions, many financial authorities around the world have introduced "innovation facilitators". These typically take the form of "innovation hubs" or "regulatory sandboxes" and aim at facilitating innovation for all players, under safe and even conditions, by ensuring access to regulatory and supervisory guidance.

Innovation hubs are the most extended of these facilitators (Ehrentraud, J. et al., 2020). They provide a dedicated point of contact for firms on FinTech related issues, and to seek non-binding guidance on regulatory and supervisory expectations (EBA, 2018a). Regulatory sandboxes go one step further, by providing a controlled environment in which projects featuring technology-based innovation that might be beneficial to consumers or the market are tested with real clients in a closed and supervised manner. Regulatory sandboxes were first introduced in the world of finance in 2015 by the UK's Financial Conduct Authority, but the concept has later been replicated in other geographies¹¹.

Approaches to sandboxes vary across jurisdictions in terms of: governance - ruled by one or multiple authorities -, eligible market participants - limited to unregulated FinTech startups or open to all types of innovative providers, including banks -, criteria for accepting projects - ready for testing or in pilot phase -, application process - cohorts or rolling-, and the tools available to the authorities responsible of the sandbox - ranging from individual guidance and temporary approvals for testing, common to most jurisdictions, to no enforcement action letters and temporary waivers or modifications to non-critical rules. Furthermore, participation in the sandbox is usually conditional upon the company accepting testing parameters (e.g. limits on the number of consumers and/or the funds involved) and safeguards that ensure no detriment to the customers or to the market.

Obviously, sandboxes are not only aimed at facilitating access to regulatory and supervisory clarity, but are also conceived as a very useful tool in the hands of authorities to accelerate their understanding of novel business models and their risks, thus helping authorities in their efforts of filling existing loopholes in the regulatory framework and removing obstacles to innovation (EBA, 2019b). In this regard, sandboxes can be seen as a tool for more evidence-based policy interventions, since authorities can test beforehand the adequacy of different risk mitigation measures.

This overview seems to suggest that policymakers have so far taken a piecemeal approach, resorting to a wide range of separate measures to meet different policy objectives. It is also noteworthy that policy responses to

9 Regulation (EU) 2016/679.

10 Treasury Laws Amendment (Consumer Data Right) Bill 2019 (Australia).

11 The IMF-World Bank global fintech survey identified 33 sandboxes by 2019 (IMF and World Bank, 2019).

FinTech have been defined and implemented nationally – or, in Europe, at the EU level –, with limited (or none) international coordination. The next section will explore whether this approach to regulation and supervision of FinTech developments will be fit-for-purpose with the advent of a new type of player: large, global technology companies that have successfully created digital ecosystems of interconnected products and services.

3. BigTechs’ re-bundling of financial services: new challenges for regulators

This new breed of competitors, commonly known as BigTech companies¹², are also starting to offer some financial products and services and, as the FinTechs, have so far focused in payments and credit, while in some cases also targeting insurance or wealth management¹³. The difference is that, while FinTech companies operate primarily in financial services, BigTech companies offer financial products only as an extension of a much broader set of business lines. The latter is due to these companies’ shared strategy of building around their customers an ecosystem of interconnected products and services (Fernández de Lis and Urbiola, 2019).

BigTech firms can achieve scale very quickly when entering new business lines, including financial services, since their digital ecosystems already have millions of active users, and have several characteristics that contribute to consolidate their position in the markets in which they operate and help them enter new ones. First, they develop network effects - a user’s benefit from participating in the ecosystem increases with the number of users, creating self-reinforcing feedback loops. Second, they have a position as gatekeepers - some of their products and services act as an entry point to other products or markets, giving these companies the ability to exert some control over connected markets. Third, they have access to vast amounts of data from their users’ interactions with different services, and have unrivalled capacity to analyse that data. The latter contributes to dynamic economies of scale and facilitates moving into adjacent business lines for which existing datasets are valuable. These characteristics illustrate why digital ecosystems might add new products and services not only as new direct sources of revenue, but to reinforce the strength of their ecosystems. Financial services are not an exception, and might enable BigTechs to collect additional customer data and to increase their customer base and loyalty to their core commercial activities.

Given their aforementioned comparative advantages, even if BigTech companies’ inroads into financial services are of limited relevance in most markets so far, with the significant exception of China, this situation could change rapidly. Moreover, regulation can also act as a catalyst of BigTechs’ inroads into financial services. Most notably, the spread of open banking frameworks, as explained in Section 2, can be used by BigTechs to get access to their users’ bank data as well as to initiate payments on their behalf. Therefore, assessing the effects of different forms of BigTech participation in financial services is of relevance for regulators to remain prepared to provide a timely policy response to rapid market shifts.

In engaging in the provision of financial services, BigTechs can both collaborate and compete with traditional financial institutions. This is to say that these companies either provide services on top of or in collaboration with existing financial institutions or develop new services outside the traditional financial network.

The first type might refer to those cases in which a BigTech partners with one or few leading financial institutions to become the customer-facing provider of a certain finance service (i.e. a fully-fledged bank current account or loan, with a partner financial institution as the trusted back-end provider that holds the customer funds or bears the risk

¹² Currently the term BigTech is most frequently associated with Google, Amazon, Facebook and Apple (GAFA) in the US and with Baidu, Alibaba (Ant Financial) and Tencent (WeChat) in China (BAT).

¹³ For a description of BigTechs’ current activities in finance, see FSB (2019b).

of the loan). It might also include business models in which a BigTech company creates one additional layer on top of existing services, for instance acting as a marketplace - i.e. offering customers the ability to access the products of multiple financial institutions through their distribution channel or platform - or relying on third-party infrastructures - i.e. leveraging existing card and inter-bank payment schemes to offer mobile wallets, payment initiation services or online acquiring services.

The second type refers to instances in which BigTechs act as direct providers of financial services to end-users in direct competition with traditional financial institutions. In the most extreme case, BigTechs could create a parallel infrastructure to the existing financial sector setup (i.e. offering payment or e-money services with the possibility that processing, clearing and settlement of transactions eventually all takes place within its own ecosystem). An interesting example of the latter case can be found in the Libra project¹⁴, the Facebook-led global stablecoin initiative announced in June 2019.

In jurisdictions where authorities have already walked the path described in Section 2 of filling the regulatory loopholes made evident by the FinTech phenomenon, most of these activities and interactions would fall within the existing perimeter of activity-specific regulations. BigTechs could be regulated as lending marketplaces, non-bank lenders, e-money or payments institutions¹⁵, and thus would be subject to regulatory and supervisory requirements aimed at ensuring adequate conduct of business, the safeguarding of customers' funds and the prevention of money laundering. In the case of activities that remain outside the regulatory scope, there is consensus on the need to fill in certain gaps (mainly activities related to crypto-assets), while it has been argued that others like marketplace businesses other than crowdfunding or mobile wallets (i.e. enablers of NFC payments) are of an ancillary, non-financial nature and thus it is yet unclear whether they need to be regulated (EBA, 2019b).

However, the fitness of the regulatory perimeter - both in terms of breadth of activities covered and sufficiency of the existing requirements/safeguards in activity-specific frameworks - might be challenged if these activities are to be performed at a much greater scale than initially foreseen. This, as has been argued, is of non-negligible likelihood in the presence of BigTech companies, and financial stability risks might emerge should BigTechs gain a dominant position in different verticals:

■ **Payments and other store-of-value services.** Were non-deposit store of value products - such as e-money - to become prominently used in an economy, a relatively large pool of funds may be controlled outside of the banking system. Although existing regulations often require providers of such products to deposit these funds with commercial banks, as a means to ensure the safeguarding of customers' funds, this implies a change in banks' funding structures - i.e. a significant proportion of retail funding would be replaced by wholesale funding - which would increase banks' funding costs. Furthermore, this pool of funds is likely to show greater mobility compared with retail deposits, which may reduce the stability of bank funding. In sum, this could eventually undermine the financial sector's role in financing long term investments.

Even where BigTech firms provide an interface between providers of financial services and their customers (i.e. marketplace for deposits or payment initiation services), rather than competing directly with them, there remains some risks. Especially when coupled with instant payments, a widespread use of BigTechs' solutions in this field would facilitate rapid and large-scale movements of clients' funds, reducing the stickiness of bank deposits. This could have implications on banks' cost and stability of funding as already described.

¹⁴ Libra has been announced as a stablecoin backed by a basket of deposits and high-quality, liquid assets denominated in strong sovereign currencies. For more information see Libra Association Members (2019).

¹⁵ We see the possibility of BigTechs obtaining a banking licence less likely in the current context. This possibility is thus not discussed in this paper.

■ **Lending.** A rapid expansion of credit provision by BigTech firms could give rise to different risks. These refer to the potential reduction in lending standards, which might be a result of a greater risk appetite, a less stringent governance framework or the misalignment of incentives under an agency lending model¹⁶. Also, there exists uncertainty on the performance of new forms of credit assessment which have not been tested through a full business and financial cycle. All the above might lead to enhanced procyclicality in credit provision, as funding flows from BigTech could become large or unstable or concentrated in some market segments and the ability of BigTechs to maintain the credit supply during a downturn is not clear (although it is probably less of a problem than for smaller FinTech companies) (CGFS and FSB, 2017).

Regardless the field of activity and given BigTechs' features and scale, financial stability risks can also arise as a result of their systemic importance, the increased interconnectedness and operational linkages and the change in the structure of the industry.

■ **Systemic importance.** Where BigTechs add new layers on top of existing services (for instance, as provider of a deposit or credit marketplace or as part of the payments infrastructure), they could become critical infrastructures for the functioning of the market. Also, to the extent that they directly offer services to end-users, they could become themselves systemic providers of essential financial services for the economy such as lending, storing customers' savings or channelling payments. In both cases, their failure could cause widespread disruption to other parts of the financial system or the economy more broadly. And unlike existing regulations for banks, financial markets infrastructures and other providers of systemic importance, existing activity-specific rules seem unlikely to ensure the continuity in the provision of those essential services should an idiosyncratic or system-wide event take place.

Given the key features of digital ecosystems explained above and their associated tendency to market concentration, the systemic importance of BigTechs' services may not only materialize in a relatively short period of time, but it can also reasonably be expected to increase over time. As noted by the Financial Stability Board (FSB, 2019b), the new structure of the financial industry could be one in which a small number of BigTech firms dominate, rather than diversify, the provision of certain financial services¹⁷. This has already happened in a number of other (non-financial) digital markets, where these companies benefit from strong network effects, economies of scale and/or gatekeeper roles, and in some cases they have been found to engage in anti-competitive practices to further consolidate their position.

Also linked to its systemic importance, growing credit activity outside the prudential regulatory net could create risks akin as those often attributed to the phenomenon of "shadow banking"¹⁸ and could limit the effectiveness of macroprudential policies¹⁹, since traditional tools are almost exclusively applied through the banking sector. In fact, Braggion et al. (2018) find evidence that peer-to-peer credit in China helped undermine loan-to-value caps. Moreover, supervisors may be less able to monitor activity that is more dispersed and outside the prudential perimeter.

■ **Interconnectedness and operational links** are likely to arise, especially if models in which BigTechs interact, partner or act as interface with traditional financial institutions become widespread. For instance, an operational

¹⁶ In models where BigTechs retain a limited stake in the loans they originate, they could have an incentive to take on excessive risk, investing less efforts in screening loans distributed to banks they collaborate with.

¹⁷ The debate over the impact of BigTechs in competition evidently goes beyond the financial sector. It has been argued that although the foundations of competition policy are sound, existing tools might be insufficient to address the challenges of digital markets.

¹⁸ "Shadow banking" (also referred to as non-bank financial intermediation or NBFIs) was originally defined by the FSB as a system of credit intermediation that involves entities and activities outside of the regular banking system. Shadow banking has raised concerns of systemic risks (e.g. arising from activities that generate maturity and/or liquidity transformation or that create leverage). See Financial Stability Board (2011).

¹⁹ The effectiveness of monetary policy may also suffer in a scenario of growing banking disintermediation.

failure or financial shock with a BigTech acting as either direct provider of e-money or consumer-facing party of a bank account, could be disruptive for the financial institution(s) holding the funds.

- **Risks of the transition to a new market structure.** Growing BigTech competition is likely to erode the viability of some existing business models, and financial institutions might see their resilience affected either by squeezed profitability (as a result of direct competition or due to dependency on BigTechs' in partnership models) or less stable funding. This could generate financial stability risks if an orderly transformation of the industry is not guaranteed. The regulatory reform put in place in response to the global financial crisis has equipped financial authorities with a range of instruments to deal with crisis situations, including recovery and resolution planning and tools and well-capitalized, better functioning deposit guarantee schemes. On top of testing the validity of these tools, the transition might create other risks that financial authorities should manage, including excessive risk-taking by some financial institutions.

Admittedly, it is yet impossible to predict exactly how technological developments will disrupt the financial industry, and whether the entry of new competitors will lead to more concentration or give raise to all or part of the financial stability risks outlined above, or rather will promote innovation-enhancing competition in the financial sector. Nevertheless, we argue that the response to these questions will be influenced by several factors shaping the competitive landscape today. In the remainder of this section we will try to illustrate how existing policies could impact the speed and form of the reconfiguration of the industry, and the extent to which different players can be unduly penalised. These include both sectorial regulations specific to the financial sector and their interplay with other cross-sectorial regimes, in particular, rules on data access and portability.

It is evident that the banking industry has a crucial economic role - being central to the payment system, the financing of the economy and the safeguarding of the public's deposits - and as such, is subject to extensive regulation. Most notably, prudential regulation and supervision seek to enhance the resilience of the banking sector to economic shocks by ensuring sufficient levels of capital, provisions and liabilities with loss-absorption capacity. It also imposes strong requirements for risk management and control. In addition, banks are subject to other pieces of regulation, which do not fall directly from their role as deposit-takers. This includes regulation concerning AML and CFT, as well as for the protection of consumers.

These latter bodies of regulation are generally specific to each type of financial product and service, and thus have been embedded in the activity specific licencing frameworks discussed previously in this paper. Therefore, these regulatory provisions do not, on a general basis, lead to competitive imbalances between providers of the same activity. The case with prudential regulation and supervision is completely different as it is applied on a consolidated basis to all entities engaged in deposit-taking. This means that, even if some of the services offered by banks can be conducted by subsidiaries that are not funded with deposits, authorities understand that risks cannot be easily ring-fenced within a banking group. Thus, they have adopted a conservative approach and extended the application of prudential requirements to all the entities that form it. The regulatory and supervisory implications of this extension are such that new entrants have most often refrained from crossing the barrier of deposit-taking. As a result, in performing those non-core activities (i.e. not funded with deposits), BigTechs are only subject to activity-specific regulatory frameworks while banks always face the additional scrutiny that comes with the prudential umbrella.

Leaving traditional regulatory frameworks aside, we have already signalled several forms in which regulators have proactively sought to facilitate the opening up of the financial sector to new competitors, by reducing barriers to entry. The rules on access and sharing of customers' data are of particular relevance in this discussion. In the particular case of the EU, the PSD2 requires banks to open up their payments-related data in a standardized, real-time manner and without monetary compensation, but there is no equivalent requirement for data of non-bank players. As discussed in section 3, the requirements enshrined in GDPR are a reflection of basic individual rights

over privacy and seek to ensure users' control over the data that one creates. Therefore, the Regulation includes, among other rights, a right to data portability. However, as commented this right is proving much less powerful than the opportunities for data sharing that are arising from open banking frameworks. This creates a data asymmetry: financial firms must provide easy access to standardised payments data but other sectors' data isn't available on similar terms. The FSB highlighted this asymmetry recently and how it could help change the dynamics of competition quickly, with potential implications for financial stability (FSB, 2019b). In fact, this puts the financial sector at a disadvantage when providing digital financial services, and reinforces BigTechs' competitive data advantage and damages the level playing field in detriment to banks' customers.

4. Conclusions and policy recommendations

The response to the first wave of disruption in finance was guided by two objectives: ensuring an adequate control of risks and the promotion of innovation-enhancing competition. As a result, a wide range of policy measures have been introduced, as described in Section 2 of this paper. However, the magnitude and nature of risks are likely to change, as is the nature and degree of competition in the financial industry, with the second wave of competition - the BigTechs. Therefore, further action by supervisors and policymakers might be warranted. This is not to say that those overarching objectives need to be changed, but rather that new considerations and consequent policy actions need to be added.

We envisage three main lines of action that policymakers and supervisors should embrace to start crafting an adequate response to the potential financial stability risks associated with the entry of BigTechs in finance.

Fine-tuning activity-specific regulatory frameworks

First, the licensing and supervisory frameworks in place for activities such as electronic money or non-bank lending might need to be revisited to ensure their fitness for the potential risks of large-scale provision of these services by the BigTechs. This could include tightening prudential, operational resilience and resolution requirements, demanding closer supervision and more exhaustive risk governance or defining additional reporting and disclosure requirements.

Authorities should also consider whether some of the business models not previously covered by regulation should be brought into the regulatory perimeter, and be subject to targeted obligations regarding AML/CFT, reporting or consumer protection as deemed adequate. In the case of some marketplace business models, authorities might need to clearly assign responsibilities between platforms and financial institutions, for instance in case of fraud, failure or cyberattacks, to adequately reflect the allocation of liabilities to the governance of systems and risk prevention.

In addition, given the interest of some BigTechs in entering in the field of crypto-assets, potentially with the launch of stablecoins tied to one or multiple fiat currencies, the clarification of the classification and regulatory treatment of different types of crypto-assets – that we have already signalled as a gap in the regulatory perimeter – becomes even more important. Fortunately, there is work underway both at the EU and global levels on this front. However, in the context of a potential global stablecoin²⁰ launched by a BigTech and given the possibility that some of these

²⁰ The G7 Working Group on Stablecoins defines global stablecoins as those sponsored by large technology or financial institutions. As they are built on large customer bases, these stablecoins have the potential to scale rapidly. See G7 Working Group on Stablecoins (2019).

crypto-assets fall within existing activity-specific frameworks (e.g. e-money)²¹, it is necessary that authorities consider the validity of such frameworks to deal also with these developments.

Promotion of innovation by all players under fair and even conditions

As has been argued, different types of financial service providers might be subject to markedly different standards, which obviously hampers the level playing field. Thus authorities should tackle those asymmetries in regulation that are not justified by risk considerations. This requires effectively applying the principle “same activities, same risks, same regulations” by shifting towards an activity and risk-based approach where rules are currently entity-based²². To this end, authorities should explore whether the proportionality principle embedded in financial regulation could be more consistently applied to better respond to the actual risks created by certain activities within banking groups.

We have previously referred to rules on access to data that are financial-sector specific (i.e. open banking) as a source of unlevel playing field. This has led some authors to the conclusion that BigTechs’ data superiority needs to be addressed in order to preserve appropriate competition in financial services (de la Mano, M. and Padilla, J., 2018). However, this can be done in different ways. We are of the view that there is huge potential in extending the rationale of open banking across other sectors of the economy. In fact, we believe that allowing users to share their nonfinancial data with other firms can promote innovation and competition, further empower consumers and level the playing field in financial services. This would be best achieved following a horizontal rather than sector-specific approach, which needs to ensure high security standards, for which the use of standardised sharing interfaces could be explored²³.

Finally, to ensure fair and even competition between BigTechs and other players, we are of the view that competition policy needs to be updated so as to ensure that adequate consideration is given to the role of data and the impact of mergers and potential anti-competitive practices on dynamic competition - market contestability and innovation incentives. Furthermore, it is important to ensure that policy tools remain effective for digital markets. For instance, investigations should move fast enough, and the use of interim measures should be considered to address certain conducts before they have led to entrenched market effects difficult to undo. This could also be complemented by regulatory action in some cases. In addition to a new user data sharing regulation, policymakers should consider introducing neutrality (no self-preferencing) obligations for the most significant platforms, to ensure they do not give an unfair advantage to their own vertically integrated products and hold back competition.

Address BigTechs’ systemic dimension

In addition to the strengthening of activity-based frameworks, authorities should consider whether a response at macro level is needed to deal with the financial stability risks associated with BigTechs’ potential systemic dimension. This might include the enhancement of monitoring of non-bank providers of finance - as has been discussed in the context of shadow banking - and the revision of macroprudential policies and tools to ensure they are fit to deal with the accumulation of risks outside of the banking sector. Also, authorities should consider whether

²¹ The EBA (2019c) has stated that certain crypto-assets - in particular, those that are fully collateralized by a fiat currency - qualify as e-money.

²² The need for such a reform has already been brought forward by the European Commission Expert Group on Regulatory Obstacles to Financial Innovation (ROFIEG). See Expert Group on Regulatory Obstacles to Financial Innovation (2019).

²³ This view is shared by the ROFIEG Expert Group. See Expert Group on Regulatory Obstacles to Financial Innovation (2019).

new BigTech services, to the extent that they become critical for the functioning of the global financial system, fit within the existing standards for critical financial market infrastructures. However, as BigTechs' services form part of a broader network of interconnected services and IT infrastructures serving the broader economy, policymakers should question whether in some cases responses to tackle operational or cyber-security issues should be defined with a horizontal, rather than activity-specific view.

In conclusion, the appropriate response to the potential challenges created by the entry of BigTech companies into the financial sector requires a combination of different regulatory measures. This is a major policy challenge, as many of the issues raised along this paper span well beyond the financial sector. Financial authorities cannot, thus, act in isolation. Rather, they should coordinate with authorities in other fields, notably competition and data protection. Moreover, given the scale and global nature of innovation and the business models of many new players, coordination must also take place across borders. Luckily, the G20 has already made a call for a concerted effort, starting at the G20 itself (G20 Presidency, 2019).

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