FinTech Developments & Their Consequences for the Financial Industry & Regulators in Asia & Beyond

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Fintech Overview: Opportunities & Challenges

Emerging innovation involving the use of technology for the provision of financial services, otherwise referred to as Financial Technology or "FinTech", is having a disruptive effect in the financial industry. While the application of technology in finance is not new, the rise of start-up FinTech companies has the potential to transform or reinvent global financial services in both developed and developing markets.

Digital disruption by FinTech companies has potential cross-cutting effects in a wide variety of financial services, including digital banking, consumer and small business financing, payments, insurance and pension provision, and investment management. Technology can have an impact on how financial markets work, and distributed ledger technologies have applications that go beyond virtual currencies and are innovating settlement, money transfers and legal transfer of rights in general. Financial innovation has or could have an impact on the business model, processes, product offering and distribution of the above sectors, forming a new competitive landscape while also triggering behavioral and cultural changes for services providers and consumers alike.

Although the level and pace of FinTech disruption differs across sectors, products and geographies, the main drivers of financial technology are similar across the board. These involve efficiency ("nimbleness" and speed, and often "cutting out the middle man"), simplicity, transparency, lower operating cost and scale effects. Efficiency gains by "cutting out the middle man" can typically be achieved by applying blockchain, or more generally, Distributed Ledger Technology (DLT), which allows transactions between two parties without direct involvement of a trusted third party. Applications of DLT range from payments and settlement to "smart" contracts, compliance and more.

The benefits to customers can include a superior and seamless customer experience, a wider range of products and services at a lower cost and improved access to financial services. Thus FinTech also has the potential to enhance financial inclusion and the "democratization of finance". Digital banking, innovation in digital payments, peer-to-peer (P2P) currency exchange and lending platforms can offer financial services to SMEs as well as the underbanked in developing economies and the underserviced in advanced economies — with implications for sustainable and inclusive growth.

Some of these FinTech developments may have been driven by the current low-interest rate environment and the difficult post-crisis environment for banks more generally. This may be especially the case for P2P and other lending innovations. Furthermore, search for yield has attracted investors into the FinTech space, which may lead to overvaluations and create problems further down the road. A reversal of the interest rate cycle can be expected to slow the pace of FinTech investment and FinTech company creation.

FinTech innovations pose specific challenges regarding privacy, cyber security and operational risk. New technologies potentially increase digital security vulnerabilities that could undermine financial consumer and business customer confidence and trust, and undermine cyber resilience with systemic implications. Privacy concerns may be especially relevant when big data analysis is used to evaluate creditworthiness of borrowers or for targeted product advice, and cloud applications more generally are prone to outside intrusion. Such vulnerabilities also exist for blockchain technologies as recent incidents have shown, even though they are supposed to have a higher level of security and resilience.

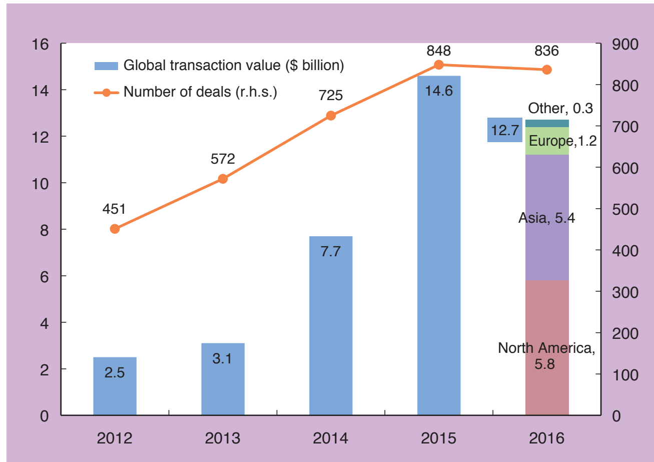
Creating and, after negative incidents, restoring trust can be crucial for certain innovations to survive. This could be supported by providing appropriately regulated fall-back solutions with human intervention and judgement along with automated services. In the same vein, problems of financial exclusion of less tech-savvy financial consumers need to be addressed. Likewise, contingency plans for poorer or otherwise disadvantaged consumers that may fall through "algorithmic cracks" of lending and insurance services, or are otherwise excluded from the benefits of FinTech services, may need to be considered. At the same time, to the extent that FinTech allows low-income borrowers access to financing for which they do not have the ability to repay, risks of a "replay" of the sub-prime borrowing crisis could be building up and need to be monitored and curbed.

In addition to technological penetration, public policy and regulation can influence the pace of disruption by FinTech. Policy makers may play a key role in unlocking the potential efficiency benefits of financial innovation, while seeking to safeguard a level playing field for market participants, consumer and investor confidence and trust, and overall resilience in the financial system. Policy and regulatory approaches may also need to evolve given the potential impact of technology on risks, information asymmetries, and other market dynamics, which may require a rethinking of

CHART 1

Annual global financing trend to VC-backed FinTech companies

(2012-2016)

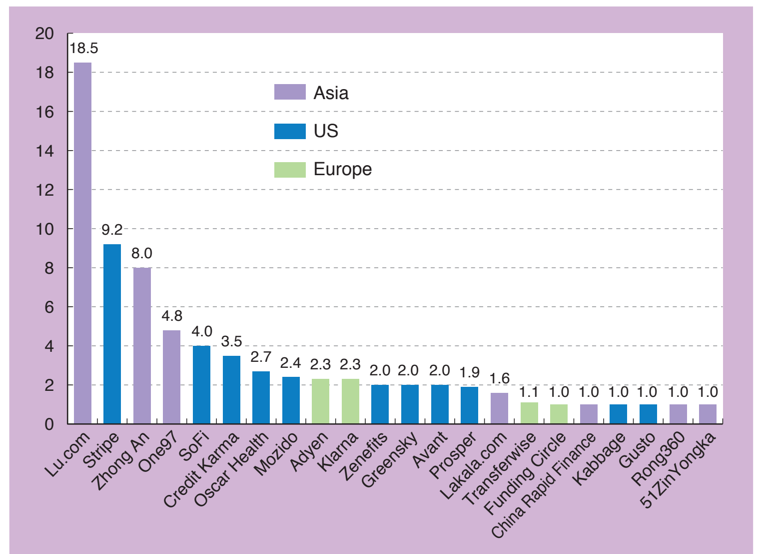


Source: Based on data from CB Insights, The Global Fintech Report: 2016 in Review.

CHART 2

Global FinTech unicorns by valuation

(Valuation in $ billion)



Source: CB Insights, The Global Fintech Report: 2016 in Review

market failure analysis in the financial sector.

FinTech in Asia Dominated by China

One way to measure the rise of FinTech is to look at venture capital (VC) investments into the sector. According to CB Insights, in 2016 VC-backed FinTech companies raised $12.7 billion across 836 deals globally, slightly down from the high in 2015. Of the global transactions in 2016, $5.4 billion or 43.5% were in Asia, close second after North America with $5.8 billion *(Chart 1)*. Asia also has some of the largest FinTech "unicorns", i.e. non-listed companies with a valuation over $1 billion *(Chart 2)*. Asia accounts for seven of these 22 unicorns globally, of which six are in China. With 11 companies, the United States counts for half of this universe.

In terms of online alternative finance — another measure for FinTech penetration — Asia is also developing rapidly. This is the conclusion of a first comprehensive benchmarking study led by the Cambridge Centre for Alternative Finance and local research and business partners and published in March 2016. It is based on survey data from 503 leading alternative finance platforms (capturing an estimated 70% of the visible market) operating in 17 Asia-Pacific countries and regions, out of which 376 were from mainland China. Indeed, China is dominating the region, as indicated in *Chart 3* that also shows the rapid development of online alternative finance since 2013. The Asia-Pacific online alternative finance market grew 323% year-on-year to reach $102.81 billion in 2015. The report also finds that this market is characterized by innovative financial instruments and channels, ranging from reward-based crowdfunding to P2P consumer and business lending (marketplace lending), to invoice trading and equity-based crowdfunding. These online alternative finance activities are directly connecting lenders to consumer and small business borrowers, raising venture capital for start-ups, funding the creative industries and creating new ways for individuals and institutions to choose how and to whom money is distributed, lent and invested, the report concludes.

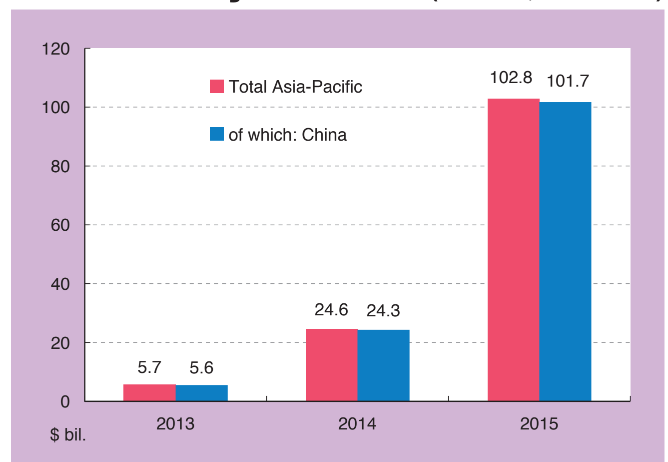
Role of Technology: Leapfrogging Opportunities for Asia

New technology is at the heart of FinTech innovations, and Asia seems to be a fertile ground for such innovations to thrive. One of the reasons why Asia, especially emerging Asia, is seeing strong development of FinTech may be that its banking sectors tend to be smaller than those of many OECD countries, and thus FinTechs can

CHART 3

Online alternative finance market volumes in Asia-Pacific region dominated by China

($ billion, 2013-2015)



Source: Cambridge Centre for Alternative Finance et al., Harnessing Potential – March 2016

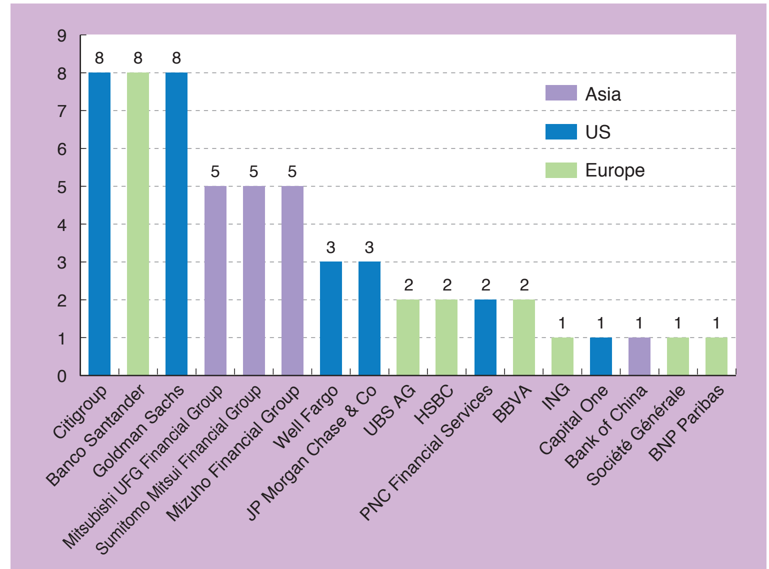
step in to cover financing gaps that may exist where banking sectors are less developed. Furthermore, financial firms may not be plagued by old and complex IT systems that have been built up over decades and may now be a hurdle to adopting more innovative systems. In many cases, FinTech development may also amount to "leapfrogging" technologies for applications and services that have not existed, or have not been digitalized before.

More generally, technology is lowering entry costs in many financial services areas, creating opportunities for new service providers. Big data analysis, DLT and the Internet of Things (IoT) will further support this trend. While Bitcoin, the blockchain-based virtual currency that has been especially successful on the Chinese market (also in terms of mining and Bitcoin exchanges) has been a source of concern for some policy makers, DLT more generally is a "general purpose" technology that will help to facilitate transfers or values and rights. It will also help to make financial companies' compliance with regulatory requirements more efficient (including via so-called RegTech applications) and support the automation of validation processes. The IoT can provide the ability to expand the DLT ecosystem, even though there are challenges in terms of security, compatibility and legal issues especially related to data sharing.

CHART 4

Banks themselves invest in FinTechs

Major bank investments in VC-backed FinTech companies, number of deals (2015 Q4 - 2016 Q4)



Source: CB Insights, The Global Fintech Report: 2016 in Review

FinTech innovations often offer, and compete on, better consumer experience. As many FinTech companies tend to be specialized, often focusing on one product or service, they can create single-purpose solutions that are designed to offer an improved customer experience with respect to a product or service. Furthermore, FinTechs tend to be nimble and quicker than traditional banks to take advantage of digital technology and in developing banking products that are user friendly, cost less to deliver and are optimized for digital channels. As briefly addressed below, these new players also have fewer constraints in terms of regulatory compliance that affects banks, especially in Asia. Many firms operate on a national or regional level only and even though successful they may be less well-known outside their jurisdictions.

FinTech & Traditional Financial Institutions: Competition & Cooperation

The rise of FinTech has the potential to disrupt traditional banking and other financial services, as can already be observed as digital platforms, websites and cloud computing replace human-based services provided by brick and mortar institutions. But such FinTech developments are not only taking place outside the traditional banking sector: incumbent banks themselves have been pushing for automation of most of their services and client interactions with a view to improving efficiency and lowering costs. Furthermore, many banks are investing in FinTech companies to benefit from cutting-edge technologies and possibly to generate bespoke FinTech solutions for their needs *(Chart 4)*.

While FinTechs with their nimbler structure and innovations compete with traditional financial institutions and challenge their business models, there are also many avenues for collaboration between FinTech firms and incumbent institutions. The latter can offer FinTechs specific financial expertise (e.g. risk assessment, evaluation and management) and scalability owing to their large customer bases. Banks, in turn, can make use of FinTech expertise. Furthermore, in some jurisdictions remuneration rules and bonus caps may make it difficult for traditional banks to attract and keep FinTech talent in-house. Likewise, banks that want to try out new technologies, solutions and business models may in some jurisdictions be constrained by an existing regulatory framework that does not allow low-risk and low-scale experimentation to take place under less stringent rules. This limits competition and may stifle innovation in financial services and may deprive consumers of enjoying certain improved value propositions from their trusted banks. Especially in such cases, banks and other traditional financial institutions can benefit from cooperation with independent FinTechs. Indeed, as reported by the industry in discussions held at the OECD, in the United Kingdom 80% of FinTech start-ups are companies that support incumbent banks.

It therefore seems that, given the strengths and weaknesses of both banks and FinTechs, overall both groups will often do better by cooperating rather than by competing. And if FinTech innovations lead to a smaller traditional financial sector as some observers believe, this would alleviate the problems brought on by the oversized financial sector that existed before the 2008 financial crisis. But as is the case in other tech areas, the development of FinTech could also lead to an unhealthy oligopolization of market power which may require antitrust and other measures, for example

giving third parties data access to banks.

FinTech & Regulation: No Level Playing Field, & Asia Ahead?

In this context, the regulatory environment and the issue of a level playing field is also important. On the one hand, banks would argue that regulation should be business-model neutral and platform neutral, in the sense that banks should neither be advantaged nor disadvantaged by regulation and the same should be true for FinTechs and other challengers. And as FinTechs and banks are part of the same ecosystem, for competition to be healthy, both incumbents and new players should be allowed to fully deploy their digital strategy on an equal footing. On the other hand, FinTechs would emphasize an appropriate degree of proportionality in regulation such as lighter requirements for smaller FinTechs with lower levels of risk.

At the same time, many banks welcome the fact that they are more heavily regulated, especially following post-crisis reforms. Recent regulatory initiatives that have strengthened the solvency of banks and their supervision can help to build consumer trust, which in turn provides a certain advantage *vis-à-vis* competitors. Many years of experience allow banks to provide clients with regulatory-driven products under high levels of operational security and accompanying their clients throughout their life cycle. Finally, as opposed to FinTech start-ups, traditional banks have a head start in knowledge about risks and compliance — even though many FinTech start-ups have been created by experts that were trained in the traditional sector.

From the FinTechs' point of view, an unlevel playing field with stricter regulation for traditional banks could also have implications for venture capital investment in this space. Such a policy approach could reduce the range of exit strategy options for FinTech investors, as there would be less appetite for acquisitions from banks which would seem to be one of their more natural acquirers. This would also affect earlier stages of the cycle, as this could diminish the appetite for the creation of start-ups that specialize in solutions for the financial sector and reduce the interest of investors in such start-ups. Regulators may want to take such considerations into account when designing FinTech policies.

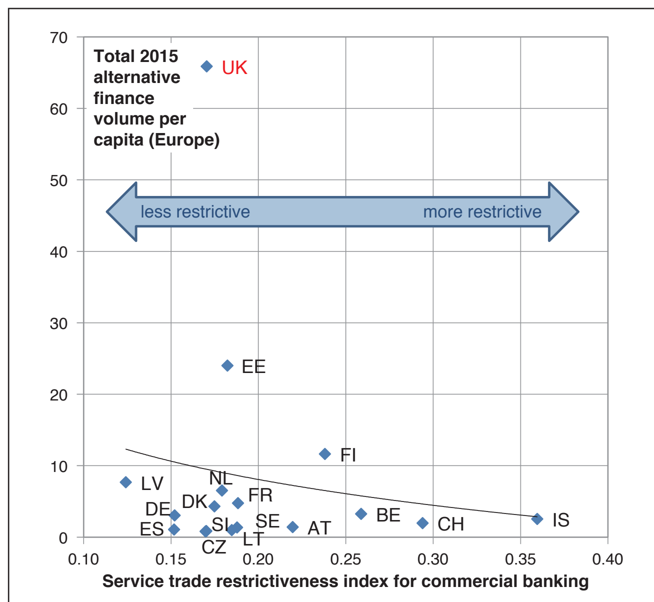
All told, policy makers need to balance the benefits of innovation with the need for financial stability and consumer protection. Innovators need to be able to contest markets, stimulate competition and enhance productivity. This is especially true in financial services where network effects can create natural monopolies, concentrate rents and render financial services expensive and exclusive. Hence, regulatory frameworks should encourage the introduction of new business models and technologies — and not stifle them at too early a stage. As the case of Europe indicates, a favorable regulatory environment may be supportive of innovation *(Chart 5)*.

Regulation will play a key role especially as regards DLT in fostering competition and creating trust. DLT will enable disintermediation, and achieve more competitive outcomes, by creating trust between two contracting parties directly, eliminating

CHART 5

Favorable regulatory environment can support innovation

Alternative financial transaction (crowdfunding, peer-to-peer lending) volume vs commercial banking regulatory restrictiveness in Europe



Source: OECD STRI database and Cambridge Centre for Alternative Finance

the need for a trusted intermediary and thus substantially lowering costs of transactions. Regulation can both help to establish DLT applications (for example with laws that create clear legal conditions that guarantee ownership of assets that are governed by the blockchain determination) or hurt their development (such as by requiring that settlement of transactions occur in a given way that excludes blockchain uses, or by limiting the use of other DLT-based applications).

In Asia, the regulatory landscape is rapidly evolving with the growth of the FinTech sector. A survey of online financial platforms by the Cambridge Centre for Alternative Finance indicates that existing and planned regulation is being regarded as adequate or favorable in some emerging Asian countries, reflecting a broadly supportive approach by regulators for this industry, while in countries such as Japan FinTech regulation is often considered too strict; several gaps in regulation are also noted *(Chart 6)*. It may, however, be early days to fully assess these approaches, and in light, for example, of the many failures of online lenders especially in China, as also noted by the Financial Stability Board, currently more lenient regulators may eventually need to embrace a somewhat more cautious approach as the industry is scaling up.

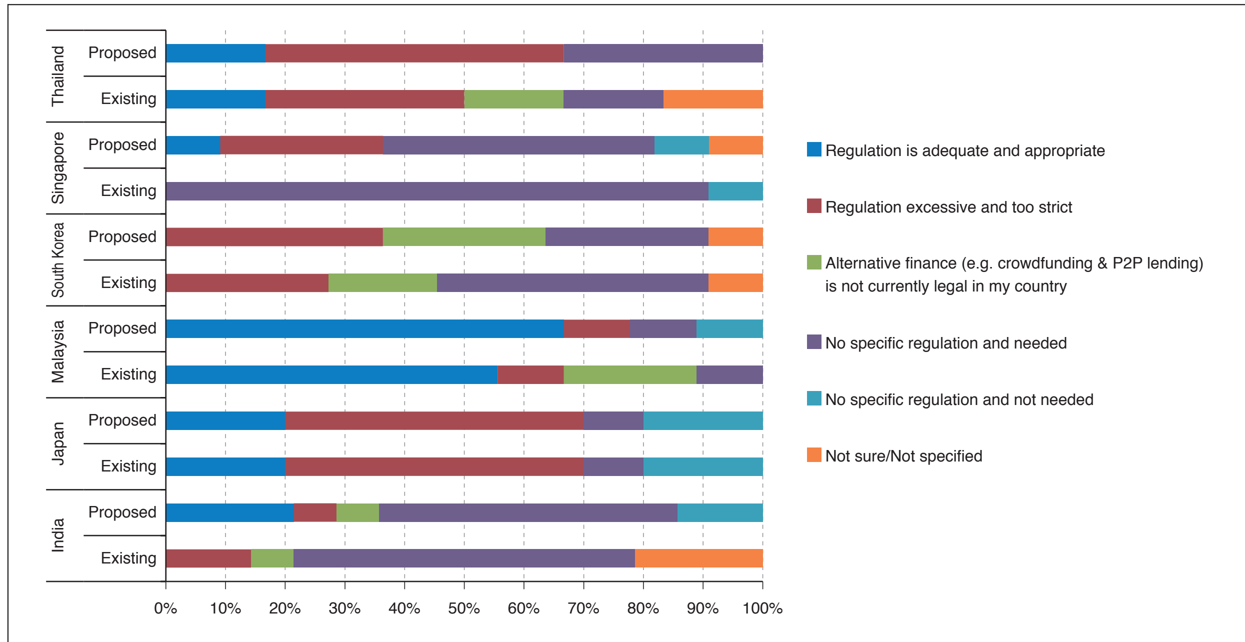
Regulatory Sandboxes Help Keeping Pace with Development

That said, at the early stages of FinTech, self-regulation with some

CHART 6

National industry perceptions of existing & proposed national regulation

Selected Asian countries surveyed, 2015



Source: Cambridge Centre for Alternative Finance et al., Harnessing Potential – March 2016

guidance, support or light touch intervention by regulators may be appropriate. For this, the "regulatory sandbox model", such as Project Innovate proposed by the UK's Financial Conduct Authority and similar models in Australia, Singapore and elsewhere, may be a suitable approach under the right circumstances. This is especially the case as it is difficult for regulators to keep pace with developments in the fast-moving FinTech space, and their need to go along nevertheless in order to provide for a safe transition into the digital era. Such an experimental stage would also prevent regulation from becoming too restrictive too fast as this could stall innovative developments and their adoption. Taking time to assess these developments potentially allows regulation to become "future proof". As concerns perhaps not only FinTech regulation, getting it right is more important than doing it fast.

The "regulatory sandbox model" can be likened to the way that car manufacturers use closed and secured circuits to test new prototypes, new technologies and new safety features. Digitalization of the financial industry that relies so much on direct customer contact should also have a secured space to try and fail, in co-operation with regulators. Regulators could help by exploring how to gear up innovations in order to support it across a range of financial activities, working with industry and a wider circle of stakeholders. Under level playing field aspects, established banks and FinTechs alike should be allowed equal access to regulatory sandboxes and other innovation incentives, such that opportunities and burdens thereof could be shared fairly.

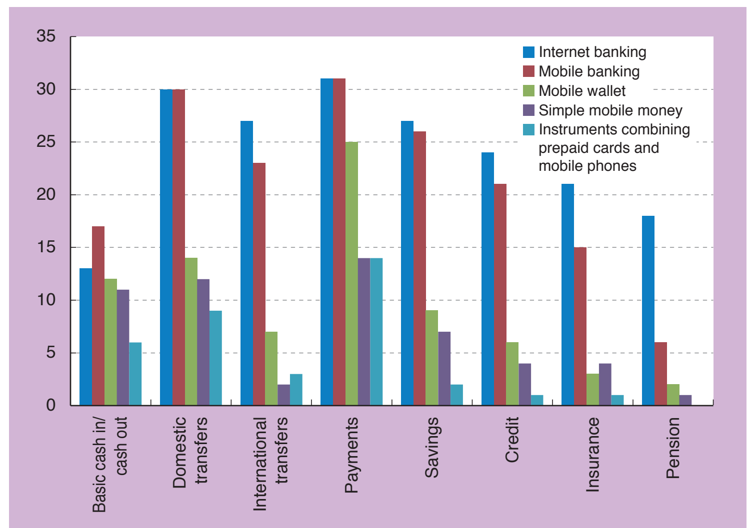
FinTech from a Consumer Perspective

As shown in a survey by the OECD's International Network on

CHART 7

Availability of digital financial services

Number of countries and economies indicating that a financial service is delivered through a given digital channel



Source: OECD/INFE stocktaking survey, 2015/16

Financial Education, digital financial services are being offered across a large spectrum of services *(Chart 7)* delivered by a variety of actors *(Chart 8)* (*G20/OECD INFE Report on ensuring financial education and consumer protection for all in the digital age*, 2017). This presents and compounds several challenges to effective financial consumer protection including issues of transparency, disclosure and communication of terms, conditions, fees, and customer rights. Consumers can also be exposed to "digital threats" including notably the risk of digital fraud and abuses, misuse of personal financial data, lack of transparency and inadequate information on products and related redress mechanisms, data privacy and security vulnerabilities, and cybercrime. Additional potential consumer risks can derive from the digitally delivered product itself (e.g. products not suitable to the customers, or over-indebtedness in the case of digitally delivered credit) or from the way the product is delivered (e.g. mis-selling by agents with limited or no knowledge about the products).

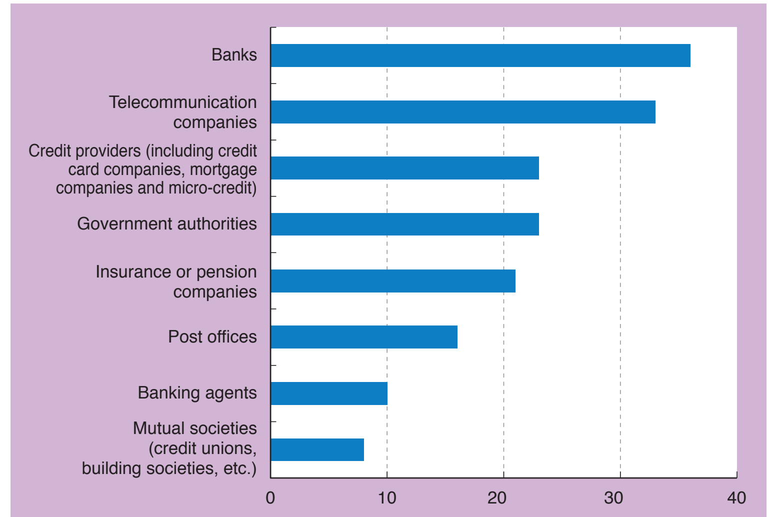
Also, technology is changing the way in which individuals engage with the financial system. For instance, consumers are exposed directly to problematic digital market practices that encourage risky behavior (e.g. being able to make impulse purchases using a single click), and exacerbate personal tendencies such as short-termism, self-control problems and confirmatory bias. Similarly, innovation has led to the increased digitalization of life, with most consumers leaving important digital footprints behind and often being unaware of the use and misuse made by big data collection platforms of their personal/financial information, including the risk of digital profiling.

At the same time, overall lack of awareness and knowledge about financial concepts and/or digital technologies may pose challenges for consumers in accessing and using digital financial services. While digitalization may help to reach out to some vulnerable groups, it may also exclude others, notably the elderly or those with low digital skills, as well as groups with low levels of financial literacy who may not be able to understand digital offers and terms of conditions for easy-to-access online credits (e.g. youth who are often in dire financial situations and who need access to quick money, thus leading to over-indebtedness). These and other challenges need to be met as digital financial services are developing further *(Chart 9)*. Consumers, for their part, need to have an adequate level of awareness of the responsibilities and possible risks they incur when undertaking digital transactions, but they may also need to be provided with the knowledge about their rights to redress and recourse, as well as with the skills and confidence to take full advantage of the benefits offered by the digital revolution. Educated consumers are better equipped to detect and to avoid potentially fraudulent and deceptive commercial practices both digitally and beyond. JS

CHART 8

Actors delivering digital financial services

Number of countries or economies indicating that a given actor is involved

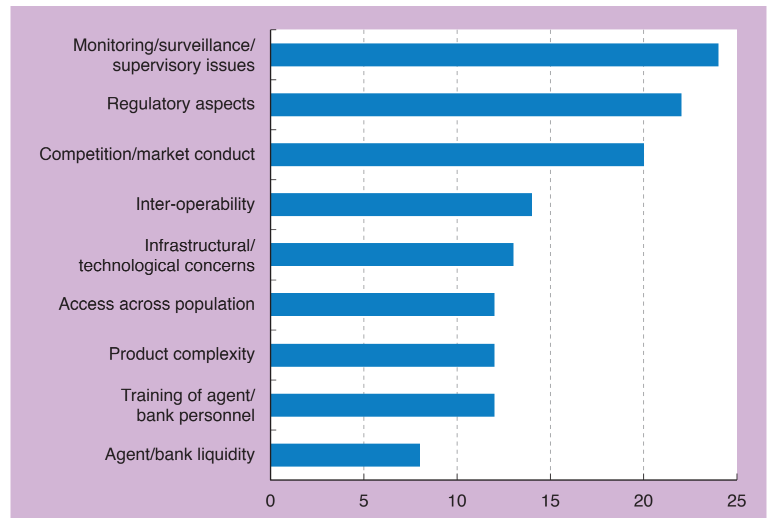


Source: OECD/INFE stocktaking survey, 2015/16

CHART 9

Supply-side challenges to development of digital financial services

Number of institutions indicating that a given aspect is a policy concern or priority



Source: OECD/INFE stocktaking survey, 2015/16

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