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RETHINKING THE BANKING INDUSTRY: SOME REFLECTIONS

Juan José Toribio, Jorge Soley and Júlia Gifra

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INTRODUCTION: RETHINKING BANKING

Banking is facing a future that is not without uncertainty. It is being called upon to reinvent itself and rise to the different challenges and opportunities ahead. Reinventing the banking system requires reflection and impetus. Reflection to identify the causes that led to the crisis, which may not have been addressed adequately. Reflection, as well, to identify the factors that require new schemes and frameworks of understanding. And impetus to argue their case and put them on the agenda for debate at the appropriate institutions and committees.

We must begin. Begin to rethink the banking system and its role in the global economy as Mervyn King, for example, does in his book *The End of Alchemy*,[1] in which he outlines the reasons behind the crisis and the premises that led to it, while also asserting the importance of banking in society and suggesting that it must be revised and restructured.

There is a very instructive story that appears in the introduction to his book referring to a conversation he had in 2011 with a "senior" person from the People's Bank of China. King asked his colleague for his opinion on the effects of the Industrial Revolution in England. "We in China have learned a great deal from the West about how competition and a market economy support industrialization and create higher living standards," the other man said. "But I don't think you've quite got the hang of money and banking yet."

Crises do not emerge from nothing but, rather, they are the result of collective errors driven by people who are struggling to deal with futures that are impossible to know. King asserts that the crisis was a collective failure, of both the system and the ideas underpinning it, but not of individual people, banks or institutions, even though they also made mistakes. We cannot blame the economy or economists for not predicting what was going to happen, since economics is not an exact science and should not be expected to be able to predict the future. However, it is a fact that one of the main roles of the market economy is connecting the present to the future, coordinating and aligning decisions on today's spending and production with those of tomorrow. The crisis, argues King, came precisely from "a general misunderstanding of how the world economy worked," the influence of the banking industry on the economy and the conditions of radical uncertainty in which attempts were made to predict and make decisions for the present and future.

Among the proposed reforms related to getting "the hang of money and banking," King stresses the need to put an end to the "alchemy" that has marked the financial and banking systems for centuries – the alchemy of creating money by transforming customers' deposits into long-term loans. The author stresses trust – the foundation of the market economy and a necessary ingredient in the social, banking and financial system – and the need to reinvent banking with specific proposals: Should we put an end to the ages-old practice of banks using demand deposits to grant medium- or long-term loans? Does this time arbitrage make sense or should we look for a different business model?

Reinventing banking is an ambitious goal but not an impossible one, and it is a necessary one given its importance in the functioning of the world economy.

Some of the challenges that the banking system must face are short-term, such as adaptation to complex regulations. The issue of regulations clearly occupies a prominent place in the current debate.[2] We can only hope that implementation of the new regulatory framework adequately contributes to sustained stability in the coming years, aided by new oversight and resolution mechanisms. There seems to be consensus among the industry's players and agents regarding the fact that the new regulatory framework seeks to strengthen and cover the gaps detected during the crisis, although there is also a widespread belief that the new demands may determine certain areas of recovery and innovation, and that some of the requirements are excessive.[3]

1 M. King, *The End of Alchemy: Money, Banking and the Future of the Global Economy*, London: Little, Brown, 2016, 430 pp.

2 Vives, X., *Competition and Stability in Banking: The Role of Regulation and Competition Policy, Princeton, NJ: Princeton University Press*, 2016.

3 J.M. Roldán Alegre, "La regulación de los mercados financieros," *ICE (Información Comercial Española)*, 883 (March–April 2015), pp. 85–95.

Another short-term challenge is related to the difficulty of generating financial margins in a context of historically unprecedented interest rates. Whether we like it or not, the world economy is still living with the legacy of a financial crisis that refuses to go away. The legacy of this crisis is budget deficits that are difficult to correct, a volume of sovereign debt that resists stabilization and private debt that is so widespread that, despite its recent drop, it still determines and limits families' and companies' propensity to spend.

But it is perhaps in the realm of monetary policy and its consequences where the imprint of that legacy can be seen the most clearly. Pushed by an urgent need to deal with the crisis, the leaders of the Federal Reserve quickly applied unprecedented monetary expansion, not only in ordinary short-term operations but also in the entire time curve of interest rates. No central bank had dared to go that far.

From November 2008 to August 2010, the Federal Reserve purchased more than $2 trillion in public and private bonds. Another 2.5 trillion were purchased later, up to October 2014, keeping rates on ordinary transactions close to zero. As a whole, the U.S. central bank's debt purchase exceeded a quarter of gross domestic product (GDP).

The Bank of Japan and, in its own way, the Bank of China each entered a similarly intense monetary maelstrom. After a slight delay, yet with no less determination, starting in the spring of 2014 the European Central Bank promoted the mass purchase of sovereign and corporate bonds, which now totaled more than €1 trillion, after successive reductions in the short-term interest rate (now 0%) and programs to provide cheap credit to financial entities through long-term financing. A whole global inundation of liquidity that has depressed market interest rates down to negative numbers.

For the first time in financial history, negative interest rates are widespread and they are affecting economies that generate almost a quarter of the world's GDP. Negative interest rates can be found in many European Union (EU) countries with respect to sovereign debt and even in parts of the corporate debt, for periods that are far longer than those of mere treasury bills.

If we ask the average citizen, they would tell us, intuitively, that economic growth cannot be based over an extended period of time on just printing more banknotes or on simply generating accounting entries in the banking system's balance sheets. According to reasonable common sense, neither printing machines nor keystrokes are strong foundations for economic recovery. What is more, our average citizen would tell us, negative interest rates mean something as absurd as having to pay for the dubious privilege of lending money to a neighbor.

The fact that a company can issue bonds at negative interest rates means that the more it issues, the greater its profits will be, since it will enter the financial flows derived from outstanding liabilities in its assets (not liabilities) on its balance sheet.

We should ask what this inundation of liquidity and negative interest rates are good for and what their impact on the real economy is. When we appeal to the judgment of the great experts to shed some light on these contradictions, we do not find a definitive answer. In recent years, one of the most interesting academic debates has been the one between Larry Summers and Ben Bernanke, a debate that the International Monetary Fund (IMF) itself then joined.

In Larry Summers' opinion, the current economic weakness is nothing but an early expression of something deeper: the "secular stagnation" caused by demographic factors (slowdown in the birth rate and aging of the world population), as well as by the fact that the current wave of technological innovations does not require large amounts of investment and it threatens jobs. Private spending, therefore, is permanently depressed and monetary policy cannot be used to stimulate it. Only a far-reaching, lasting program of public investment could help change the situation. (Of course, this means a budget deficit and a level of public debt even higher than they are today.)

Bernanke, in turn, argues that the economic lethargy of our times is not permanent but is, rather, a product of excess global savings, which can be attributed to China, Germany, Japan, the oil-exporting countries, etc. Such a high volume of savings finds no parallel opportunities for investment, which drives down the "natural" interest rate and forces the central banks to depress the nominal interest rates more than they would like to. The new monetary environment would thus be the appropriate one, even if no one can guarantee how long it would take for noticeable effects to emerge to stimulate demand.

Of course, there is also a simpler explanation: at the start of this century, governments and central banks encouraged a huge investment, consumption and debt bubble. After it burst, the same governments and central banks that had caused it went into a panic when faced with the social consequences of the problem and they chose to hinder the natural adjustment of the economies, which would be as difficult as it was inevitable. Budget spending, public debt, monetary inundation and negative interest rates are nothing but partial solutions, aimed at delaying an overall economic rebalancing, postponing it in view of the lack of a more doable alternative policy. Hence the perplexity in which we are living. It is not easy to explain to the average citizen that the bursting of such an oversized economic bubble necessarily involves social hardships and that any attempt to spread these hardships over time may lead to monetary and fiscal situations as disconcerting as the ones we are living through.

Still, it must be admitted that this strange policy of negative interest rates is leading to a slight recovery in Europe although this is shrouded in uncertainty (even more so with Brexit already confirmed) and continues to cause unforeseen consequences. There is indeed "collateral damage," of which three kinds can be highlighted:

- First, the impact on government accounts. Some optimists point out that zero (or negative) interest rates help lower the budget deficit, given that they lower the financial cost of public debt at the same time as tax revenues are boosted by the economic growth resulting from the monetary policy in place. Other, more realistic observers, however, highlight the fact that, in such an accommodative monetary climate as the current one, governments feel less of an urge to control spending, lower the primary deficit and stabilize the level of public debt.
- A second "collateral effect" can be seen clearly in the bottom line of the banking industry. With zero interest rates, banks come upon serious difficulties in generating a financial margin that would allow them to reach acceptable levels of profitability. And it is also paradoxical that the same authorities that have put so much stress on the need to ensure the solidity of the European financial system are determining banking profits with their monetary policy. How can European banks maintain the capital required of them if, at the same time, they are prevented from offering attractive profitability to potential investors?
- Other nonbanking stakeholders in the financial system are also involuntary victims of the current interest rate scheme. Among them, we should mention insurance companies, especially in life insurance, whose technical reserves can find no investment opportunities that are capable of ensuring a level of profitability that would cover the costs of the commitments they have taken on with their customers. The same could be said about pension funds and plans, fixed-income collective investment undertakings and, in general, all those people who time and again wonder where to place their small nest egg without exposing it to excessive risks.

So how can the central banks return to a situation resembling normality? Individually, it does not look easy. In mid-2015, as soon as the United States announced possible increases in interest rates, its currency appreciated considerably, with immediate effects on the real economy. The others have learned the lesson: the first to raise interest rates has to accept the consequences in terms of exchange-rate appreciation and a drop in international competitiveness. Ultimately, it is not so very different from the exchange-rate wars that occurred in a more visible way during the other Great Depression, back in the 1930s. The IMF was created to prevent this from happening again but today there do not seem to be the political bases needed for a similar, updated, global macro-agreement.

Added to this major short-term challenge are other permanent challenges, such as the reputation of banking and the need to restore ethics to the way it operates. The matter of ethical values takes on renewed significance nowadays. Although it is not a new issue,[4] it cannot be forgotten that a lot of the conduct and behavior that gave rise to the last crisis were part of the sphere of conduct and ethics. Numerous think thanks, associations and analysts are revisiting this issue today and moving it back to the heart of the debate, as can be seen in recent publications from the Group of 30[5] or the Spanish Banking Association (AEB).[6] Likewise, what stands out in regulatory implementation is the growing importance of the kind of oversight focusing not only on capital and other requirements but also on factors related to the conduct and culture of the entities being supervised.

In this respect, we should revisit some ideas that, in the field of academia, were set out by Professor Rafael Termes,[7] who devoted numerous presentations and articles to the issue of the values that should guide the actions of those in charge of banking, not only in terms of their customers, although they are the most important facet. Professor Termes warned that the problem of ethical behavior – in banking as well – is not so much a problem of "rules" as a problem of human beings, who fulfill or destroy themselves through their acts. For this reason, it is not just a matter of abiding strictly by a series of regulations or of faithfully following the instructions in any "code of good governance" imposed externally by political or social institutions, no matter how legitimate these may be. Instead, it is necessary to delve into what he called a "first-person ethics," in contrast to the codes imposed via regulations from the outside – that is, to delve into the ethics of virtues or moral values, which are (following his terminology) those potentialities that lead the person to realize or perfect themselves according to the order of being, in line with a given anthropology and conception of life.

To these short-term and structural challenges must be added the opportunities for the future associated with the digitization of banking and the appearance of new players with new business models in the area of credit and payment systems. The advent of virtual media and exchange systems that are not based on

4 Among other references: A. Argandoña (ed.), *La dimensión ética de las instituciones y los mercados financieros*, Madrid, Fundación BBV, 1995; A. Argandoña, "Three Ethical Dimensions of the Financial Crisis," "la Caixa" Chair of Corporate Social Responsibility and Corporate Governance, IESE Business School (Barcelona), DI 944 E, January 2012, 17 pp.; J.M. Campa, "Reformas estructurales en el sector bancario," in Fundación de Estudios Financieros, *Nuevos desafíos del sector financiero: recuperando la confianza y mejorando la cultura financiera*, Papeles de la fundación 52 (2014), pp. 33-44; J. Canals, *Building Respected Companies: Rethinking Business Leadership and the Purpose of the Firm*, Cambridge: Cambridge University Press, 2010, 282 pp.; D. Melé, "10 Ways 'Banking Sector Ethics' Can Stop Being an Oxymoron," Forbes, December 22, 2014.

5 G30 Working Group, *Banking Conduct and Culture: A Call for Sustained and Comprehensive Reform*, July 2015.

6 J.M. Roldán, "Cultura bancaria: relevancia y efectos prácticos," *Expansión*, December 22, 2015.

7 R. Termes, *Desde la banca*, Madrid: Rialp, 1991, vols. 1 and 2.

coins or banknotes of legal tender and do not involve the oversight of any central authority, and the disruption by players offering loans and financial services in simplified forms, are just some of the challenges and opportunities that are altering the conventional analysis of the financial system.

Digital transformation reflects the needs of today's society but it must be part of the meaning and importance of banking within the global economy, part of its stability and growth. Thus, banking must undertake its digital transformation within the context of social changes, without forgetting its role in the new society. There are two factors that will prove to be fundamental in this scenario of the future and of change. On the one hand, as González-Páramo[8] stresses, there is an internal force that has to do with traditional banks' capacities to develop their technological, financial and organizational competences in order to deal with their own transformation and, on the other hand, there is an external factor – namely, the role of regulation as a brake or catalyst. In any event, the transformation of conventional banks and banking in general will have to be undertaken not only from the technological standpoint but also from the vantage point of strategy, corporate culture and its role in the economy and society. It is about reinventing banking.

What will its future be? Public service? A comprehensive supplier of financial services? A bank of applications and online platforms? A combination of some or all of these?

This occasional paper[9] is part of the research document series[10] of IESE's Industry Meetings Division on the occasion of the 12th Banking Industry Meeting organized by the CIF (Center for International Finance) and EY. The purpose of this work is to contribute to reflections on how to rethink modern banking. Without attempting to tackle such a huge question in this article, we feel it is worthwhile to outline some ideas that might be useful for these reflections – ideas ranging from the understanding of social changes and the role of banking in contemporary society, to what is its main engine of transformation: the digitization of financial services and of the monetary system with the entry of new players and new business models.

8 J.M. González-Páramo, *Reinventar la banca: de la gran recesión a la gran disrupción digital* (admission speech at the Royal Academy of Moral and Political Sciences, Madrid), June 14, 2016, p. 91.
9 Toribio, J. & Soley, J. and Gifra, J,,"Rethinking the Banking Industry: some reflections", IESE Business School, Occasional paper OP-289-E, 2016.
10 Available at: http://www.iese.edu/industrytrends. See previous occasional paper: J.J. Toribio and J. Gifra, "The Banking Industry's Role in Recovery: Four Priority Objectives," IESE Business School, occasional paper OP-271-E, 2015.

1. SIGNIFICANT SOCIAL CHANGES

In recent decades, most countries have experienced such major social changes that the modes of interaction among institutions, individuals and groups have been forced to evolve quickly. Without aiming to set out an inventory of these structural transformations in this paper, we believe it is appropriate to cite some features (four of them specifically) that characterize contemporary societies compared with those that existed just a few decades ago, and which particularly determine the sphere of banking services.

1.1. More Economically Open and Advanced Societies

According to Angus Maddison, the world's per capita GDP in constant figures (international Geary-Khamis dollars from 1990) rose, in 1960, to a little over $2,750. In 2010, it had tripled in real terms to more than $7,814, despite the economic crises that had arisen over those five decades. World trade and international capital flows have experienced even greater growth than GDP thanks to the unstoppable trend toward globalization.

This greater economic openness and the widespread increase in income levels can be seen in saving and spending habits and financing needs that are quite different from those of years past, with obvious implications for banking markets. Wealthier societies, for example, do not necessarily channel their surplus liquidity into immediate consumption (as happened traditionally) but to a greater extent toward investment expenditure.

This may be explained by the fact that, in the past few decades, monetary expansions do not seem to have altered the stability of consumer prices (conventional inflation, measured by the CPI, has remained at very low levels), while their effects have been determining factors in repeated episodes of "asset inflation" – that is, real estate and financial bubbles.

1.2. More Informed Societies With Greater Cultural Diversity

Another significant social change is the larger amount of information and cultural diversity that characterizes contemporary societies as a result of the advances achieved in the education level.

It is true that there is a higher level of education and that illiteracy has virtually been banished from many societies. However, there are still considerable educational differences among citizens from the same country or market. This fact, transferred to the field of finance, has certain implications. To start with, a higher educational level multiplies people's possible choices but, at the same time, it makes it more difficult to earn the loyalty of the customers of any particular product or service, including in banking.

On the other hand, even though the educational level is higher, this does not mean that it is homogenous. Instead, it is still possible to speak of societies that are culturally more "unequal" than those of previous decades. This seems to require a clearer segmentation of customers, a greater understanding of the needs and aspirations of each segment, a range of very distinct products and services, and painstaking marketing that bears cultural diversity in mind. Situating standard financial products in culturally unequal societies leads to moral and legal risks that go beyond mere social reputation, although they obviously affect that as well, and irreversibly. After the social changes experienced, the simple traditional distinction between "wholesale" and "retail" banking may no longer be relevant for these purposes. Within what is called "retail banking" (or purely commercial banking), there are actually different kinds of customers, with different service aspirations and different degrees of understanding of financial products. The same holds true – albeit perhaps to a lesser extent or in different ways – with the customers of wholesale banking.

1.3. Societies More Open to Technological Changes

The intensity and speed with which digital technology has penetrated modern societies have outstripped any prediction made even just two decades ago. The number of connections, interactions and transmissions of information and data that we make via digital technology is growing exponentially. We are living in a hyperconnected world in which people and things (the Internet of Things) are in constant communication in real time via the Internet. Today, more than 1,000 copies of the *Encyclopædia* Britannica could be stored in a single IT device, the Cray Titan computer can make 17.6 billion calculations in one second, and a simple videogame device has much greater processing capacity than the most powerful computer in the banking industry had 30 years ago. More than 2.3 billion people are now connected online and it is calculated that, around the world, 20 million people are joining every month as new Internet users. More than 80% of the U.S. population (around 65% in Europe and 45% in Latin America) regularly use a personal computer, and this number appears to be expanding exponentially in Asia, Africa and Oceania.

The implications of this technological change on economic and social life (including the financial world) are not easy to predict. The digital revolution is not transforming only the channels of information and communication, nor just marketing and distribution (consider the impact of social media) or the way work is organized. Even the very designs of products and services or business processes and models are being subjected to decisive changes, which have not yet been fully assessed and assimilated. Likewise, the field of education – to cite another example – is undergoing substantial changes, given the ease of universal access to sources of information and knowledge. The design of political and social institutions (including representative democracy) may be at the threshold of a radical transformation inasmuch as digital technology is opening up the possibilities for citizens to participate directly in collective decision-making processes.

From the standpoint of the supply of banking services, the implications are huge. Some 72% of people under the age of 34 prefer to interact with their bank via their mobile phone, 94% use Internet banking, and 40% would not care if their bank had no have physical offices.[11] One of the main difficulties lies in getting the timing and scope right for each of these technological innovations. Not all customer segments are asking for the same online service. Getting there too early can be as negative and costly as getting there too late. However, any bank that decides to remain wholly on the sidelines of the process or that does not invest enough resources, time and innovation capacity in dealing with technological change would run the obvious risk of losing the relationship it had established with its customers. Its reputation as an institution open to changes and capable of responding in real time to its customers' needs, demands or claims would be damaged.

11 Accenture, *The Digital Disruption in Banking: Demons, Demands, and Dividends*, 2014 North America Digital Banking Survey, 2015, 16 pp.

1.4. More Complex, Sensitive and Demanding Societies

Precisely because of the possibilities that wealth, education and technology open up in modern societies, these societies are much more evolved. This social progress can be seen in a change in sensitivity and in life attitudes both with respect to the nature of financial services and in relation to the reputational consequences stemming from them.

Thus, modern societies are much more demanding in terms of the quality of the goods and services they are offered. The concept of “total quality,” which was initially developed in the realm of operations management or marketing, later spread to many other fields in which the consumer neither expects nor accepts anything that does not faithfully meet their expectations. In advanced societies, consumers seem less willing than in the past to settle for poor-quality services, ignore flaws in the service provided or accept mere excuses. This new, increasingly demanding attitude has been followed, moreover, by the creation of bodies and institutions charged with ensuring the quality of goods or services (such as consumer associations) or with receiving and processing complaints about any defective goods or services, institutions that must exist regardless of their real usefulness or the judgment that their actions deserve. In the banking industry, too, customers – rightly or wrongly – seem to feel increasingly entitled to set forth their view of how they feel they are treated by the providers of goods or services, and they do not hesitate to use institutional channels to express their grievances.

This more demanding attitude – typical of evolved societies – is also reflected when it comes to assessing “transparency” and “ease of understanding,” not only with respect to the financial products purveyed but also in relation to the processes that have led to their design, the reasons supporting their commercialization, and the criteria of usefulness that justified their being offered to the public. Particularly in the realm of services (and therefore, in banking), social acceptance or rejection often extends too to the existence of rules of sound corporate governance, in the way it is perceived from the outside and as a source of trust in the institution. A major part of their corporate reputation stems from what is now called “institutional governance.”

2. BANKING IN SOCIETY

In parallel with this evolution of societies and of the changes they have experienced, the banking industry has gradually rolled out new financial products and services, sometimes in response to explicit demands and at other times as the result of anticipating the needs of potential customers or the possibilities afforded by technology. Innovation in banking has been particularly intense in the past 30 years thanks not only to technology but also to political and social phenomena, such as the creation of a large middle class and the development of globalization, especially in its financial facet.

In a simplified fashion, it tends to be defined as the set of institutions that “channel savings toward investment.” This statement is unquestionably true and from it we can deduce the core role that banks have been playing in the expansion and progress of advanced societies. The fact that the world per capita income has tripled in the past 40 years – which has made welfare and the provision of social services possible – is in no way a phenomenon unrelated to the functions performed by modern banking.

Offering a safe channel for savings and financing productive investments – the purposes of banking – are key elements without which this social and economic development would have been impossible.

At times, the role of banks can be summarized as being transmitters of the impulses of monetary policy to the real economy and therefore as necessary elements in managing the aggregate demand in modern societies, making it possible to regain those economic balances that may have been lost, often for exogenous reasons.

Thus, banking occupies a core role in the policies designed by governments and central banks to stimulate growth and soften the fluctuations of the economic cycle. However, it is true that this function of transmitting monetary impulses entails a certain privilege, inasmuch as banks can access resources granted by the issuing bank at prices (interest rates) lower than market prices, and then put them in credit operations for families, companies or governments with a much higher nominal profitability. Society understands that this difference is justified when it is used in arbitrage in periods favorable to productive investment and, consequently, economic growth. However, it is much less understanding when these flows are primarily aimed at financing a budget deficit that public opinion deems unproductive and from which banks earn a substantial financial margin without having had to take on any risk. Credit entities are clearly not responsible for the public deficit, the way chosen to finance it or the monetary policy decisions that may be adopted by central banks under these circumstances. However, the reputation of the entire banking industry, as an instrument of social progress, is indeed affected by this kind of activity, even if there is nothing illegitimate or illegal about it.

All of these considerations are true although, given their general sweep, they are lacking the vast wealth of nuances that make real banking activities "services for people" on a day-to-day basis. Without trying to be exhaustive, we should recall that, in commercial banking alone, the majority of bank institutions offer potential customers an extensive portfolio of services related to managing individual or group savings, insurance products, capital market operations, direct debit, charges and payments in real time, personal loans for a wide variety of reasons, corporate investment or cash financing, financial advisory services, international or currency operations, and a long list of increasingly sophisticated services associated with all of the above.

To this whole inventory (in outline but indicative of a kind of map of commercial banking) must be added the financial services associated with investment banking in those credit institutions – almost all of them European – that reflect the archetype of "universal banking." They include corporate operations, mergers and acquisitions, corporate appraisals, initial public offerings (IPOs), management of IPOs, asset securitization, management of a variety of funds (hedge funds, venture capital, etc.), derivatives, structured products or financing… along with a host of services that are part of the everyday activities of this kind of institution.

Merely perusing these lists – no matter how incomplete they may be – suffices to reveal to what extent banking has evolved hand-in-hand with social and economic changes until it has become a key part of the functioning of modern economies and even more so of the everyday lives of families and companies.

Without losing sight of the role and importance of banking in society and thus understanding the social changes and time in which we live, we should now delve into one of the main engines of change in the banking industry in the short and medium term: its digital transformation.

3. THE DIGITIZATION OF FINANCIAL AND MONETARY SERVICES: CHALLENGES AND OPPORTUNITIES

Digitization is a challenge and an opportunity. On the one hand, the technological challenge entails increasing disintermediation, with the appearance of new forms and entities providing financial services and new methods and channels of payment associated with companies outside the conventional banking industry. Likewise, customers' expectations and demands are immersed in a process of change, as indicated previously, and they increasingly expect a broad, personalized, simple range of products and services that are available on a multichannel basis, 24 hours a day, seven days a week, 365 days a year.

On the other hand, digital transformation is an opportunity. The creation of value should be considered in many spheres: to begin with, the increase in connectivity can improve not only customer relations but also relations with employees and suppliers. It can be used to automate and simplify many processes and enhance efficiency. The opportunity also comes from innovation in products and services, which is linked to the potential and handling of big data and everything this generates in terms of deeper knowledge of customers, greater personalization of products and services, and improved experiences.

In fact, in the social changes indicated, we have stressed the digital issue as a factor transforming economic and social life and its implications in the field of finance, especially from the vantage point of the range of banking services.

3.1. Fintech: Scope and Importance

The increasingly prominent presence of more and more companies and business models in the field of finance and technology is a relatively recent phenomenon. The term "fintech"[12] is a contraction of the English words "financial technology" and it alludes to the set of new business models of financial services with a strong technological bent. The name also encompasses a wide range of institutions and products, crowdfunding platforms, virtual currencies and others that offer financial and credit services in which technology is at the core.

Measurement parameters of the scope or number of entities or activities included within the notion of fintech are already beginning to come into focus, although they are still somewhat blurry given the absence of regulation or control. Recent figures (2015) show that there are around 4,000 fintech companies.[13] They are estimated to account for at least 1% of all retail banking revenues and were expected to grow significantly in the coming years, to reach 5% by 2015 and 10% by 2020.[14]

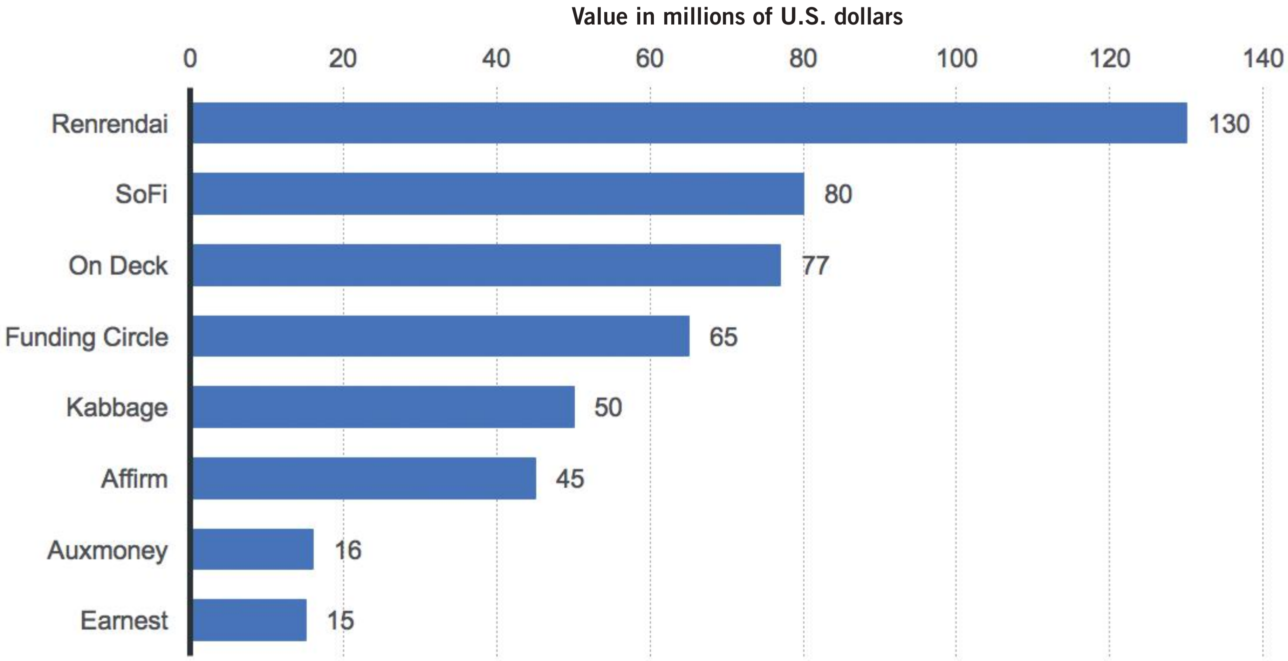
Fintech encompasses a wide range of business models and companies but what they all share is technological innovation. These new digital business models are often platforms offering occasional financial services in the sense that they cover or offer specific products, setting a clear trend in which services are disaggregated and the focus is on particular niches. Unlike the concept of "universal banking," these new enterprises are focused on specific areas.

For example, in the field of credit and loans, there are peer-to-peer companies that bring together lenders and borrowers (such as Renrendai, SoFi, OnDeck, Auxmoney, and Funding Circle) and that provide loans and other services under a collaborative economy model.[15] In some cases, they are merely facilitators, a meeting and intermediation point (such as Lending Club and OurCrowd). In the case of Lending Club, the business model consists of finding people willing to lend small amounts of money to others without any guarantee of getting it back. In other cases, there are platforms that shoulder the risk of the loan with their own capital (such as Kabbage). There are also companies devoted solely to providing payments by mobile phone in specific countries, such as M-Pesa in Kenya and EcoCash in Zimbabwe. Likewise, some of the large e commerce platforms, such as Amazon,[16] Alibaba[17] and Rakuten,[18] have been offering finance and loan services to client companies, which sell their products and services on their portals. Figure 1 illustrates the volume of investment in some of these fintech companies within the field of credit and loans.

12 The notion of fintech should not be confused with that of "shadow banking." The latter is used to refer to the entire set of institutions that foster bank disintermediation, such as different funds (hedge funds, venture capital funds, securitization funds, etc.) and other financial entities regardless of their technological base, which is often no greater than that of conventional banking. Given the term's ambiguity, another acceptable definition is any financial activity that is not included on a bank's balance sheet."Shadow banking" existed long before the digital revolution. Obviously, fintech entities should be included in the sphere of "shadow banking" insofar as they are virtual banks and an example of disintermediation. However, it is necessary to distinguish between the two concepts. "Shadow banking" is a broader concept than fintech although it may include the latter. For an exploration and analysis of shadow banking, see: IMF, "Shadow Banking Around the Globe: How Large, and How Risky?", *Global Financial Stability Report: Risk Taking, Liquidity, and Shadow Banking – Curbing Excess While Promoting Growth*, October 2014, pp. 65–104; Financial Stability Board.

13 The Economist Intelligence Unit, The Disruption of Banking, 2015, 13 pp.
14 Citigroup, *Digital Disruption: How FinTech is Forcing Banking to a Tipping Point*, Citi GPS: Global Perspectives & Solutions, March 2016. Retrieved from: https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.
15 BBVA Innovation Center, "The Collaborative Economy Arrives in Banking," March 20, 2015. Retrieved from: http://www.centredeinnovacionbbva.com.
16 Retrieved from Reuters (2015): http://www.reuters.com/article/us-amazon-com-loans-exclusive-idUSKCN0P90DW20150630.
17 Retrieved from China.org.cn (2015): http://www.china.org.cn/business/2015-08/19/content_36345650.htm.
18 Retrieved from Rakuten (2013): http://global.rakuten.com/corp/news/press/2013/0328_02.html.

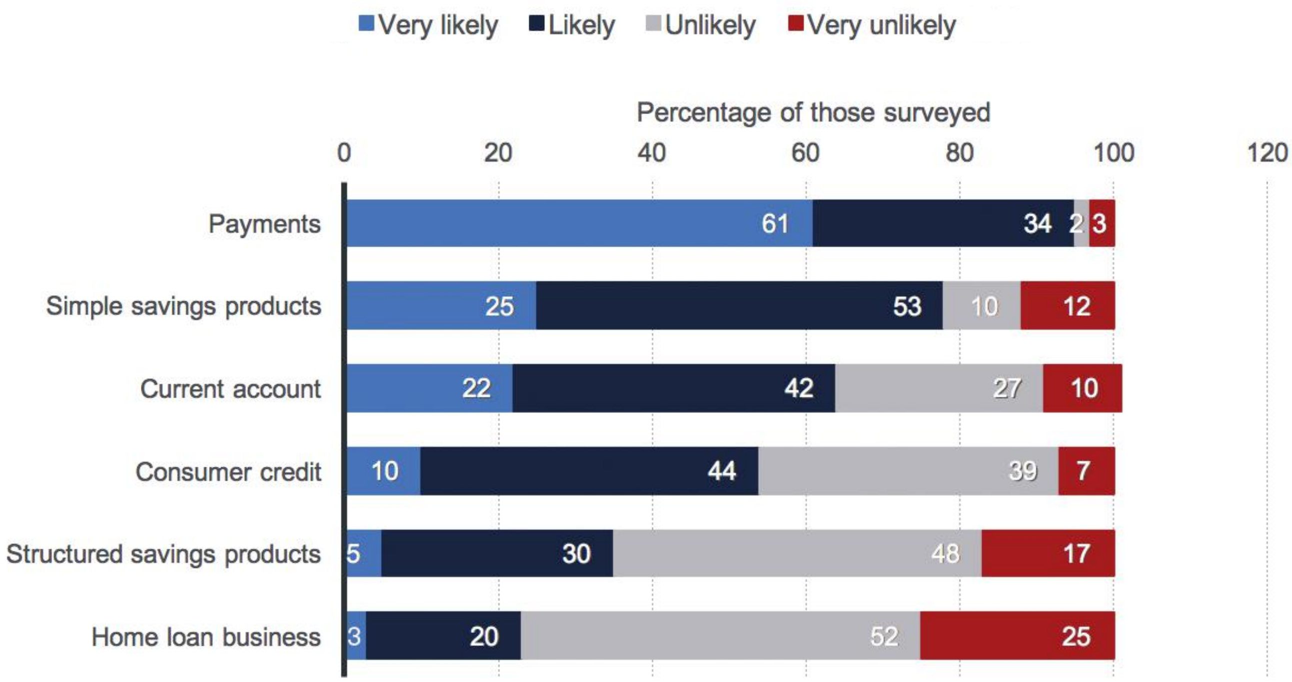
FIGURE 1. LARGEST INVESTMENTS IN FINTECH COMPANIES OPERATING IN THE AREA OF LENDING WORLDWIDE IN 2014



Source: "Fintech Statista Dossier," 2015.

The question about what role these new actors will play in the budding financial scene in the next few years is still difficult to answer but, in any case, it is impossible to deny that they will exert an increasing influence over many financial activities. In fact, Figure 2 shows the probabilities and areas where their impact may be the greatest: payments, savings, account management, credit, home loans, etc.

FIGURE 2. LIKELIHOOD OF THE THREAT TO EXISTING RETAIL BANKS FROM NEW FINANCIAL COMPANIES IN EUROPE IN 2014 (BY PRODUCT)



Note: Europe, 2014, 60 participants, banks from 15 countries. Source: "FinTech Statista Dossier," 2015.

Some recent studies reflect positively on the role that fintech companies may play in the particular sphere of financing for small and medium-sized companies and private individuals,[19] although others warn about the threats they could pose through possible fraud, the risk of their being used to launder money or finance terrorism, the lack of deposit guarantee funds for their investments, and the potential rise in the systemic risk of future crises.[20]

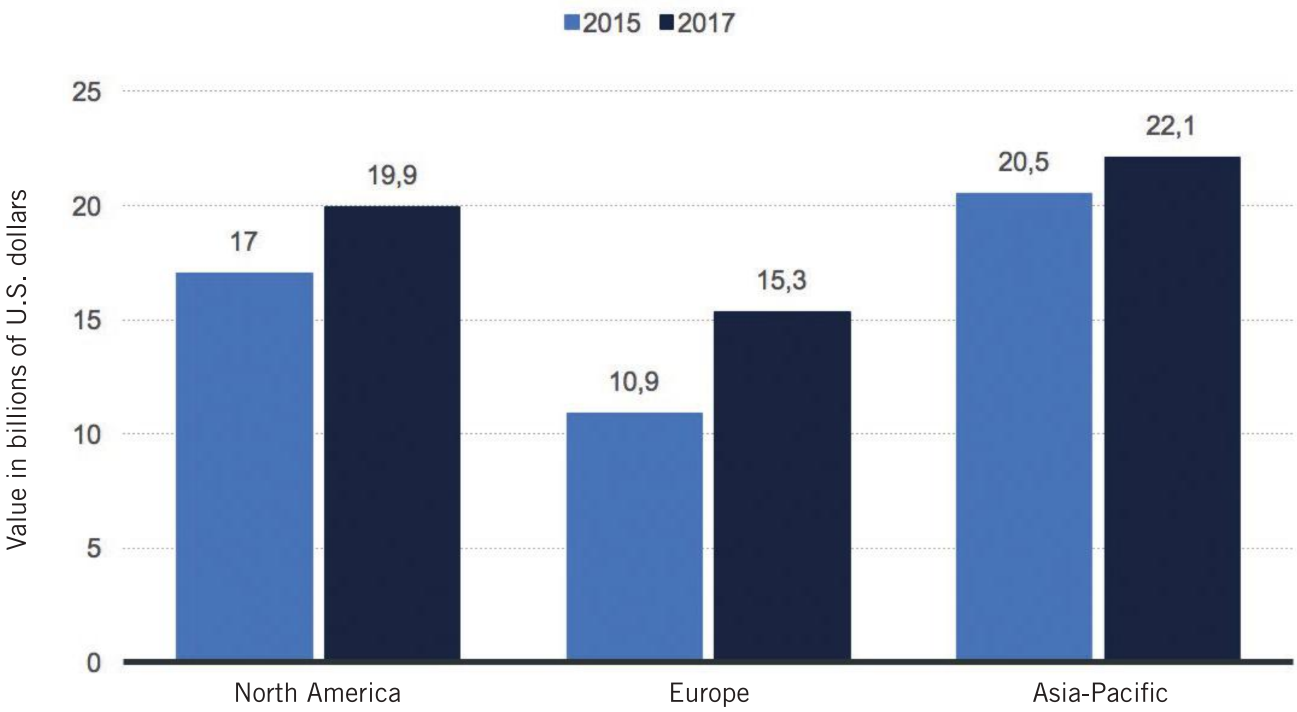
Some of the most important competitive advantages of fintech companies, unlike traditional banks, are their lower cost structure, their greater flexibility, and their higher degree of technological innovation. As Professor González-Páramo notes: "These companies begin without the burden that traditional banking faces of maintaining a physical distribution network, the rigidities inherent in a corporate culture that reflects the way banking was done a quarter of a century ago,

19 World Economic Forum, *The Future of FinTech: A Paradigm Shift in Small Business Finance*, 2015, 35 pp.

20 J. Soley and C. Sánchez de León, "Luces y sombras del 'shadow banking,'" IESE Insight, 2013; J. Soley and C. Sánchez de León, FN-617-E, "Shadow Banking," IESE Business School, November 2013; A. Moreira and A. Savov, "Is Shadow Banking Good for the Economy?" World Economic Forum, September 18, 2014.

the sustaining of obsolete technology systems, and the heavy regulations that banks face."[21] Indeed, many conventional banks still have legacy technology systems from decades ago, which in some ways determine the pace and implementation of innovations and services that are easier and more flexible in the age of digital products. Nevertheless, the fact that they might not be as flexible or that it may be complex to transform or update them does not mean that they cannot do it or that they cannot commit themselves to creating new businesses and companies.[22] In fact, traditional banking is making significant investments in new technologies, in new fintech companies and start-ups, as illustrated in Figure 3, which shows estimates by region of the volume of investment by traditional banks in new technologies.

FIGURE 3. FORECAST OF BANK SPENDING ON NEW TECHNOLOGIES IN 2015 AND 2017, BY REGION



Note: Worldwide, February 2015. Source: "FinTech Statista Dossier," 2015.

21 J.M. González-Páramo, *Reinventar la banca: de la gran recesión a la gran disrupción digital* (admission speech at the Royal Academy of Moral and Political Sciences, Madrid), June 14, 2016, p. 87.
22 See, for example on the website http://santanderinnoventures.com, the strategy used by Banco Santander to create a fund endowed with $100 million to invest in fintech companies such as Cyanogen, Kabbage, MyCheck and iZettle.

In a complementary fashion, Figure 4 reflects the specific areas of technological innovations in which investments are being made, where mobile payments in particular stand out. It specifically shows investment in the United States, although in Europe there are noteworthy initiatives such as Cecabank and the Ealia system, which allow users to pay each other in real time via mobile phone by choosing the contact to which the payment or transfer should go. In the case of Spain, the standout common payment platform is Bizum, which allows for instantaneous transfers among banks via mobile phone.

FIGURE 4. MAIN AREAS OF BANK INVESTMENT ON FINANCIAL TECHNOLOGIES IN THE UNITED STATES, 2015

Note: United States, 2014. Survey of bank executives. Source: "FinTech Statista Dossier," 2015.

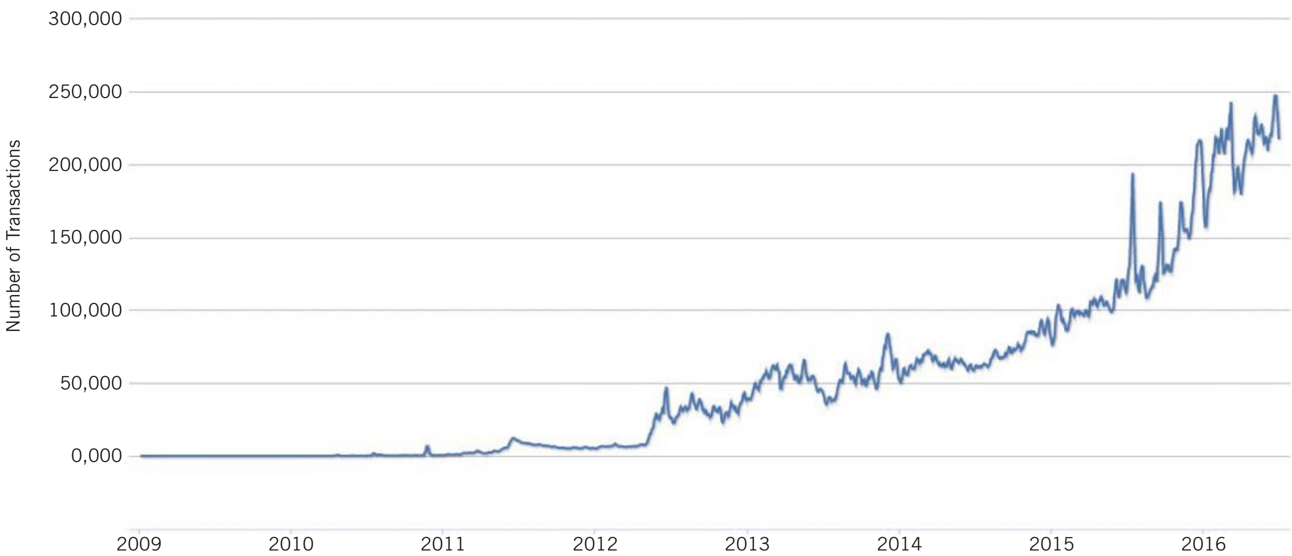
3.2. Bitcoin, Blockchain and the Future of Money

Another major subsector in which innovation in business models and the addition of new players is particularly disruptive is that of payment methods.

Traditionally, money has fulfilled four functions essential for making the economy work: supplying the system with liquidity, serving as a safe-haven asset, allowing goods and services to be bought and sold, and serving as a common accounting unit. Nowadays, however, physical money is not needed to purchase things, nor is legal tender currency needed to carry out exchange transactions. The new virtual currencies and accounting units allow assets to be exchanged among users without the need for physical currency of legal tender and without using financial intermediaries or notaries to verify the validity of the operations.

In this sense, transactions based on virtual currencies are already part of the current payment system, as illustrated by Figure 5, according to which bitcoin[23] is the best-known of the almost 600 that exist (including ripple, litecoin and many more).

FIGURE 5. NUMBER OF TRANSACTIONS WITH VIRTUAL CURRENCIES (2009–2016)



Source: http://www.blockchain.info.

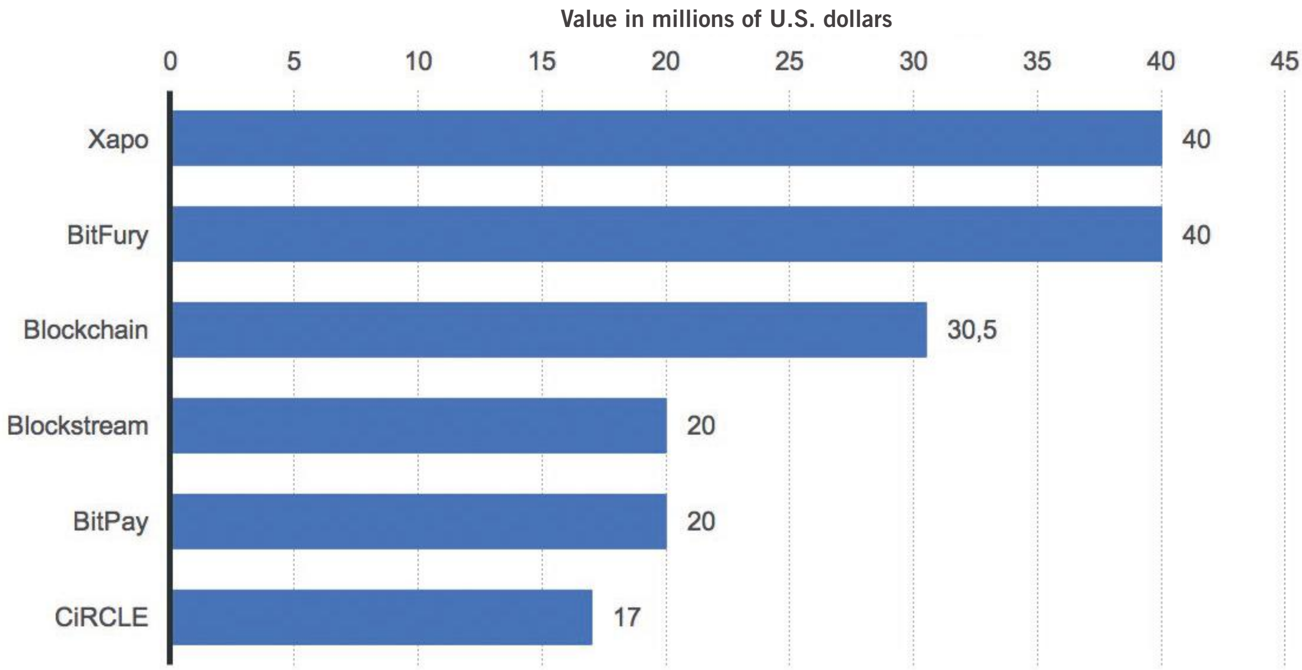
23 J.A. Zamora, A. Rahnema, and K. Tatarinov, "Bitcoin: el impacto de la nueva moneda virtual," *Harvard Deusto Business Review*, 240 (November 2014), pp. 72–82; A. Blundell-Wignall, *The Bitcoin Question: Currency Versus Trust-less Transfer Technology*, OECD, 2014, 21 pp.

Bitcoin is a currency based on cryptography that can either be bought and sold in online wallets (such as Xapo) in exchange for traditional currencies or it can be generated by a process of solving algorithms and calculations called "mining" (such as BitFury). Bitcoin's natural environment is digital, which does not mean that physical stores cannot also accept this currency. Transactions based on virtual currencies are charged to the person who has an e wallet of bitcoins. Once the payment has been made, it is recorded in a "ledger" and the operation is confirmed. The safety of the record is guaranteed by the fact that the system automatically resets after each transaction.

Among the notable advantages of this new method of payment are the speed, the absence of transaction costs, and the ease of use. However, there are also challenges that must still be addressed, such as security, cyberattacks and criminal uses of the currency, the absence of regulation, and volatility (the value of a bitcoin can fluctuate widely throughout the year).

It is true that, from the time the first virtual currency was created until today, transactions using virtual currencies have still not become a widespread method of payment. However, as has been mentioned, this does not diminish the importance of its tendency to grow or of the volume of investments in the leading fintech companies operating in the sphere of virtual currency, as illustrated by Figure 6 below. The most prominent companies include the aforementioned Xapo, which buys and sells bitcoins, as well as BitFury and Blockchain, suppliers of services related to the technology and software of the distributed ledgers.

FIGURE 6. LEADING FINTECH DEALS IN THE BITCOIN AREA GLOBALLY IN 2014

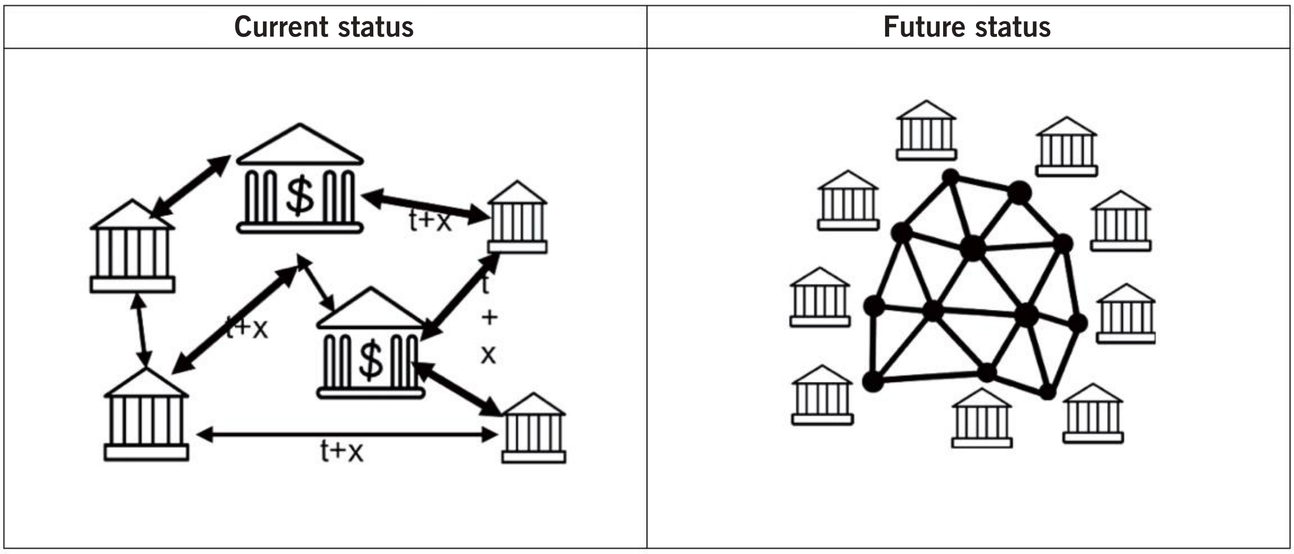


Source: "FinTech Statista Dossier," 2015.

The focus on virtual currencies is complemented by the expectations poured into the technology that makes their development possible. Blockchain,[24] the technological foundation of the network of virtual currencies, allows all the transactions performed on the Internet to be recorded automatically in a virtual ledger. That is, blockchain technology develops a ledger that contains a complete record of all the transactions (their value, volume, users, etc.) that have been carried out with virtual currencies. And nowadays this is a shared, anonymous ledger that is available to the public, open to users and in a constant process of updating.

A priori, the potential and impact of this infrastructure exist in the realm of methods of payment and virtual currencies, but they must be extrapolated to many other areas within the financial industry, such as back office operations, which function not only within each bank but also between different banks. Thus, for example, based on this new technology, what is currently a fragmentary network that shares information about different transactions between banks via copies and duplications could be a shared network of distributed ledgers. The current status and future status of networks shared among different banks could be illustrated graphically in the following way:

FIGURE 7. GRAPHIC ILLUSTRATION OF THE EFFECT OF BLOCKCHAIN TECHNOLOGY AND SHARED NETWORKS IN THE BANKING INDUSTRY



Source: http://www.r3cev.com.

24 F. Chesini, D. Furlonger, and R. Valdes, *The Bitcoin Blockchain: The Magic and the Myths*, Stamford (Connecticut): Gartner, April 2016; T. Swanson, “Consensus-as-a-Service: A Brief Report on the Emergence of Permissioned, Distributed Ledger Systems,” working paper, April 6, 2015.

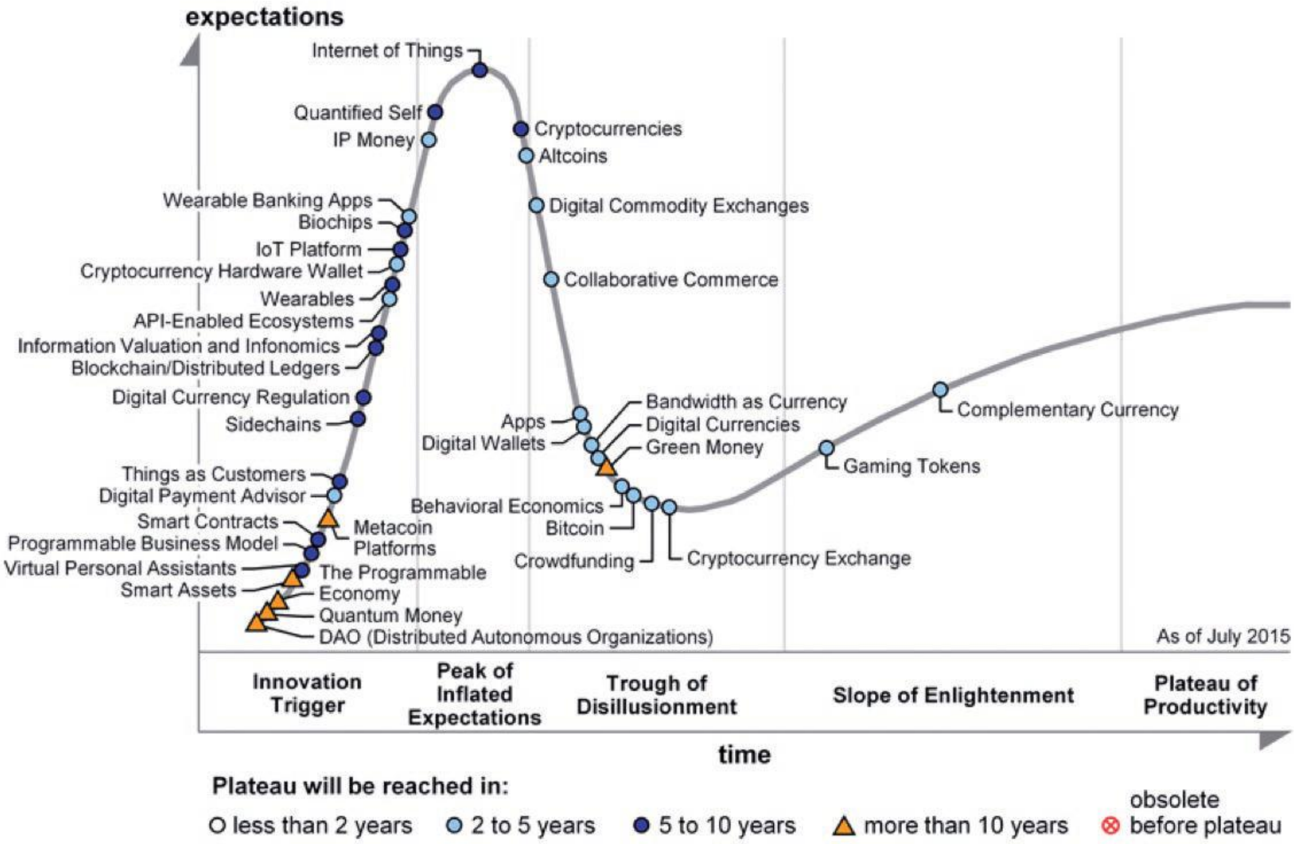
In essence, blockchain's disruption is its ability to decentralize authentication processes. In this sense, its impact in the sphere of payment systems and the functioning of the financial system more generally is clear, as it is in other areas of economic activity (such as records, voting systems and contracts).

In the field of finance, there are a variety of initiatives and studies that are now beginning to explore and estimate the specific implications of this new infrastructure. A recent report by Santander InnoVentures, in conjunction with Oliver Wyman and Anthemis Group, estimates that distributed ledgers may entail savings of between $15 billion and $20 billion per year, with the concomitant reduction in infrastructure and costs of processing payments between banks, fees and cross-border transactions, regulatory costs, etc.[25] Recently, a total of 45 banks worldwide have lent their support to the creation of the R3 consortium[26] in order to research and share the challenges and opportunities related to blockchain technology. Likewise, some institutions and banks are spearheading pilot and/or exploratory projects. For example, in Japan the financial services company Mizuho is performing a pilot test in the area of syndicated loans via blockchain technology. In February 2016, the government of Dubai announced the creation of a government commission to research the scope and implications of this technology.

In any event, the technological proposals in the area of what is called the "programmable economy"[27] (which is where these innovations lie) and their impact on the financial industry are already a reality, as illustrated by the Gartner cycle on technological advances in this sphere. In this cycle, we can see the forecasts for the development and viability of technologies and innovations applied to the financial field, including some of the ones already mentioned (virtual currencies, bitcoins, blockchain, etc.).

25 Santander InnoVentures, Oliver Wyman and Anthemis Group, *The Fintech 2.0 Paper: Rebooting Financial Services*, 2015.
26 See the website http://www.r3cev.com.
27 Gartner defines the programmable economy in this way: "The programmable economy is a natively 'smart' economic system that supports and/or manages the production and consumption of goods and services, enabling diverse scenarios of exchange of value – both monetary and non monetary."

FIGURE 8. HYPE CYCLE FOR THE PROGRAMMABLE ECONOMY, 2015



Source: D. Furlonger and R. Valdes, Hype Cycle for the Programmable Economy, 2015, Stamford (Connecticut): Gartner, July 2015.

3.3. More Regulation, New Partnerships and the Transformation of Banking

In short, the disruption of the technological agents and innovation applied to payment methods is being waged on different fronts:

- The first is the possibility of carrying out transactions without using physical currency or legal tender.
- The second is the absence of intermediaries or public bodies that safeguard and govern the process or that control or tax electronic transactions. Blockchain technology allows there to be a distributed ledger of data without the oversight of a central authority.
- And finally the third is the transparency and capacity of any company to generate a new virtual currency. It is not difficult to image Amazon, Google or Apple promoting their own currency as a method of payment for the transactions on their e commerce platforms.

Even though this is still a middle- or long-term scenario, the technology already exists in many cases, and the associated business models are only going to grow and develop further. If this scenario continues to progress, it is reasonable to wonder, as Mervyn King has, about the future of money: whether money and central banks – in their current guise – will continue to serve the same purposes or even if they will remain as necessary as they are today. Perhaps the most essential factor will be to guarantee security and trust in the integrity of these accounting systems, computation, software and algorithms.[28]

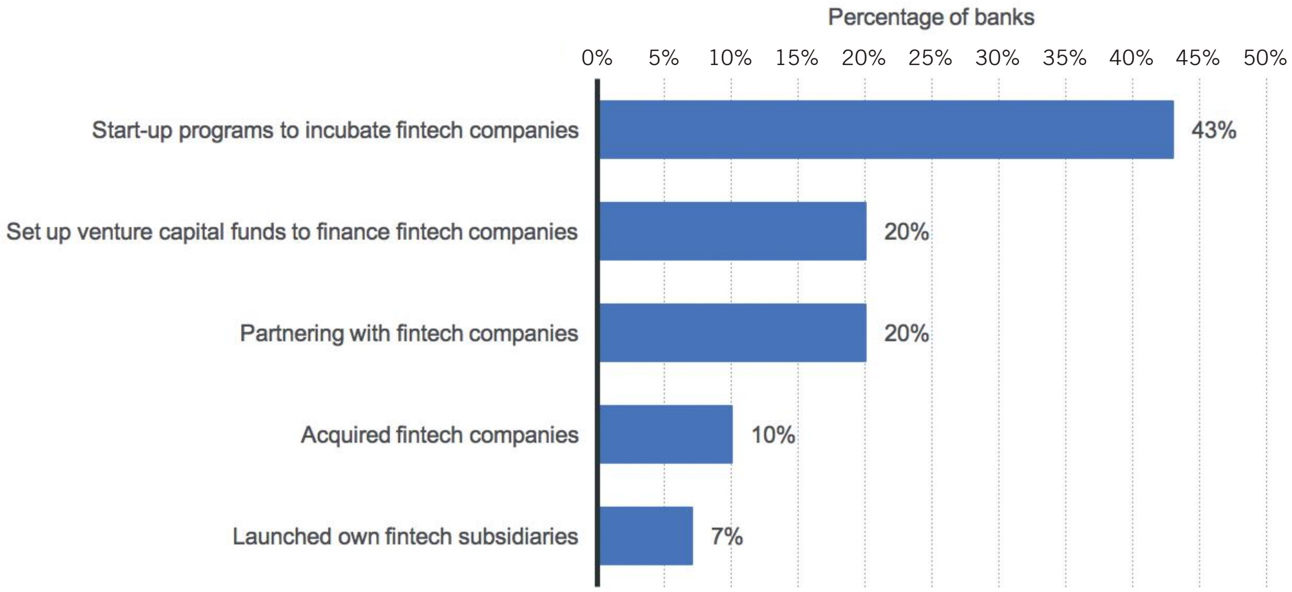
Technological innovation, new business models, and new players, many of them from outside the banking industry, are exerting a high degree of pressure on traditional banking as they have led to a simplification of products, innovation, openness, new talents, transparency, and flexibility, among other elements.[29] The arrival of new competitors may be truly disruptive both from the perspective of the products and services they offer and with regard to the kinds of customers they attract.

These new competitors are not only the aforementioned fintech companies. The large digital companies grouped under the acronym GAFA (namely Google, Apple, Facebook and Amazon) can also take advantage of their unique capacities to earn market share in areas such as banking and finance.

In this environment of change, in the forthcoming years we will be witnesses to many forms and models of cooperation among conventional banks and new players. In fact, Figure 9 shows the different forms of cooperation and the strategies used by traditional banks with regard to fintech companies, which range from the creation of incubators to partnerships, acquisitions and the new venture creation:

28 M. King, *The End of Alchemy: Money, Banking and the Future of the Global Economy*, London: Little, Brown, 2016, pp. 281–289.
29 EY, *Transforming Talent: The Banker of the Future*, Global Banking Outlook 2016, 2016, 32 pp.

FIGURE 9. REACTION OF BANKS TO THE DEVELOPMENT OF FINTECH COMPANIES WORLDWIDE IN FEBRUARY 2015



Source: "Fintech Statista Dossier," 2015.

Added to this, in the next few years, will be more stringent regulation of their activities. The current regulatory asymmetry is already the focus of attention in the recommendations of the Financial Stability Board[30] and in the reforms being spearheaded as part of the Basel Committee on Banking Supervision. Likewise, in the EU, the Alternative Investment Fund Managers Directive[31] and the entire set of regulatory acts related to Solvency II in the insurance industry point to a greater regulatory reach in this kind of parallel financial activities and institutions. Furthermore, the replacement of the SEPA Council by what is called the Euro Retail Payments Board in December 2013 also spotlights this need to tailor the regulations in the specific issue of payments via mobile devices to respond to the changes happening in this field.

Thus, in the near future, banks and new enterprises will compete and collaborate in a more heterogeneous ecosystem, with regulation better adjusted to the different types of entities and services, and with the players being subject to varying limitations and capacities for action.

30 Financial Stability Board, *Strengthening Oversight and Regulation of Shadow Banking: Policy Framework for Addressing Shadow Banking Risks in Securities Lending and Repos*, August 2013, 54 pp.
31 Directive 2011/61/EU of the European Parliament and of the Council of June 8, 2011.

CONCLUSIONS

- Banking has evolved apace with social and economic changes until it has become an indispensable part of the functioning of modern economies and even more so in the daily lives of families and companies. Its importance is precisely what justifies the need to rethink its underpinnings and the way it operates.
- The recovery of trust and reputation, adjustment to regulatory changes, adaptation to social transformations, and the digitization of financial and monetary services are the main engines of change and reinvention in the banking industry.
- The more than eight years of crisis have unleashed profound change in the field of regulations. The regulations currently in place are cumbersome and complex, and their main goal is to limit banks' scope of action in order to ward off new episodes of recession, which has given rise to new oversight and resolution schemes.
- Today's state of affairs with low interest rates is generating serious questions about the profitability of banking, since constantly maintaining interest rates near and even below zero makes it extraordinarily difficult to generate financial margins.
- The reputation of banking and the issue of ethics and values continue to play a bigger and bigger role after the main reasons behind the latest financial crisis have been analyzed. This is not a new issue, nor should it be imposed or regulated from the outside, although it is true that, in the field of banking supervision, aspects related to banks' conduct and culture are gaining greater and greater importance.
- The implications of technological changes on our economic and social life are vast and difficult to predict. Banking must undertake its digital transformation in this context of social changes without forgetting its role in society.
- In the realm of financial services, the digitization of banking and monetary services is giving rise not only to changes in conventional banks but also to the entry of new technological players with innovative business models.
- The emerging new operators, despite not being subjected to the same oversight or regulatory framework, do offer products and services that match the demands and expectations of a significant part of society.
- Technological innovation applied to the field of finances is in the process of development, and the approach revolves around both companies and credit and lending platforms as well as the development of virtual currencies and mobile payment methods.
- Among the technologies that should be taken into account, the example of Blockchain stands out. The possibility of having distributed ledgers and of decentralizing authentication processes could trigger a veritable revolution in the banking system and the way it works, both internally and externally, in collaboration with other entities.
- Conventional banks are responding to these social demands and changes with investments in areas of technological innovation applied to financial services. Likewise, on the part of traditional banking, there are more and more proposals for collaboration, partnerships, acquisitions and investments in the field of fintech companies.
- In the near future, it is reasonable to expect greater regulation of both fintech entities as a whole and of the financial services they offer via their technology platforms.
- In the coming years, traditional banks and fintech companies will compete and collaborate with each other in a more fragmented ecosystem, with more equitable regulation that is better adjusted to the different types of entities and services, and with the players being subject to varying limitations and capacities for action.
- The transformation of conventional banks and banking in general will have to be undertaken not only from the technological standpoint but also from the vantage point of strategy, corporate culture and its role in society and the economy. It is about reinventing banking.

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