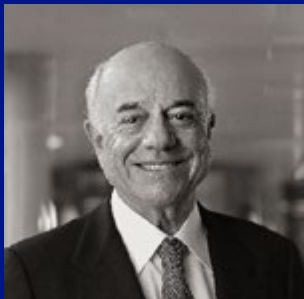


THE SEARCH FOR EUROPE

Contrasting Approaches



BBVA



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This article reviews the specific factors that are hindering growth in Europe. It concludes that a more efficient banking system is a structural reform that would facilitate better resource allocation, reduce the cost of capital, and improve the transmission of monetary policy. Only through technological advances can productivity in banking be improved. As an example, the article illustrates the process towards the digital banking of tomorrow, based on BBVA's own experience, and underscores the need for sweeping changes in the industry's regulatory framework to guarantee its stability and protect consumers while also capitalizing on the vast potential of technology.

EUROPE, BETWEEN STAGNATION AND TECHNOLOGICAL REVOLUTION: DIGITAL BANKING AS A DRIVER OF ECONOMIC GROWTH

Today, European banking institutions face tremendous uncertainty in the medium and long term, a situation that challenges the very foundations of their current business model.

The sources of that uncertainty are several and diverse, but in all of them we find, in addition to specifically European elements, factors which, though often the most important, have a global scope that makes them much more difficult to control.

The first is a puzzling macroeconomic scenario, characterized by very modest growth (at least compared to other post-crisis recovery periods), very low—and, in many countries, negative—inflation, and interest rates close to zero (negative rates, in real terms). Diverse explanations have been given for this situation, each with very different implications for the future of the European economy and, by extension, of the financial system.

THE RADICAL TRANSFORMATION OF THE BANKING INDUSTRY AND THE SOCIAL CHANGES IT ENTAILS WILL ULTIMATELY BE TRIGGERED BY TECHNOLOGICAL PROGRESS

The second factor of uncertainty is the drastic and as yet unfinished overhaul of the regulatory framework of banks. The new regulations are and will be much stricter, with higher capital and liquidity requirements and more rigorous measures to ensure transparency and consumer protection. This process of tightening regulations is a worldwide phenomenon, but in Europe it will have particularities linked to the development of a European banking union.

Technological change is the third source of uncertainty and undoubtedly the most important in the long term, given its formidable potential to disrupt financial institutions across the globe. However, its effects should be felt earlier and stronger in developed societies such as Europe, which are technologically more advanced and where consumer demands and habits are changing more rapidly.

In the following pages, I will briefly review these major factors that are spurring the banking system to make a drastic change. I will also defend my conviction that the radical transformation of the industry will ultimately be triggered by technological progress and the social changes it entails. Next, I will draw on BBVA's experience to briefly illustrate the nature of the change that financial institutions must make in order to survive and prosper in the new banking industry that is now taking shape. The article concludes with a commentary on the need for a parallel transformation of the industry's regulatory framework, creating a regime that guarantees financial and macroeconomic stability and adequate protection for consumers while also making the most of technology's tremendous potential to build a much more efficient and productive banking system, one that will improve the wellbeing of ordinary people and stimulate productivity and growth in the medium and long term.

The Global Economy in Uncharted Territory

Global economic trends in recent years, especially those of developed countries and, within that group, of Europe, have raised a number of increasingly complicated questions.

The financial crisis initiated eight years of ultra-expansionary monetary policies, led by the United States and later adopted by Europe and Japan. For eight years now, real short-term interest rates have hovered close to zero and even dipped into negative numbers. Despite these policies, economic recovery in the wake of the recession is weak, especially in Europe.

The most striking fact is that the extraordinary global monetary expansion of the last several years has not produced noticeable inflationary tensions. Quite the contrary: in developed countries and at the global level, inflation is now lower than it has been for decades. Meanwhile, long-term interest rates show no sign of incipient inflationary pressure; even after government debt levels have soared, they remain surprisingly low.

All of this has sparked a heated debate among economists as to the reasons for this unusual pattern. The implications of the debate are very relevant, because the underlying causes of the phenomenon will determine its potential consequences, some of which bode ill for the future of the global economy. And, of course, the most suitable policies for recovering growth and avoiding new crises would differ depending on what caused the current situation.

In this controversy, one end of the spectrum of opinion could be represented by the ideas of Ben Bernanke, former Chairman of the United States Federal Reserve, who tends to take a relatively benign view of the current trends, and the other by those of Larry Summers, Secretary of the Treasury in the Clinton administration and Director of the National Economic Council during President Obama's first term, who in late 2013 put forward the much more worrying hypothesis of "secular stagnation",¹ reviving a term coined by Alvin Hansen in the 1930s and making waves in the economic community.

According to Bernanke, we are essentially in the midst of what we might call a "savings glut"—too much saving and not enough investment—that is depressing interest rates. He argues that this excess saving is largely a result of economic policy decisions made in the past: after the crisis of the late 1990s, the Asian countries—especially China—chose to limit the expansion of domestic demand in order to build up their reserve holdings of financial instruments issued by the most developed countries, thereby driving interest rates down.

When the 2007-2008 crisis reared its head, the sudden drop in demand and the consequent relaxation of monetary policies only intensified this downward trend.

According to Bernanke and others who defend this position, we still have a significant savings glut because the emerging economies of Asia and oil producers have only moderately reduced their current account surpluses, and the major correction experienced in other raw material-producing countries, like Russia and Latin American nations, has been offset by an improvement in the current accounts of European countries, primarily Germany and the so-called periphery (in the case of the latter, an obvious effect of the crisis and the policies adopted to mitigate it).

In this scenario, policies of low rates and quantitative easing would be the appropriate tools for stimulating global economic recovery and, to a certain extent, correcting imbalances in global flows.

This is undoubtedly a highly simplified summary of the "savings glut hypothesis", but it is nevertheless useful for contrasting it with Summers's alternative theory of "secular stagnation".

Secular stagnation defines a situation where there is a chronic deficit of investment with respect to savings, leading to less growth in the

¹ For a general overview of this controversy, see Bernanke's blog (<http://www.brookings.edu/blogs/ben-bernanke>).

medium and long term. In other words, the root of the problem is not excess saving—due to policies adopted in the past—but the existence of structural factors that depress investment demand. These factors are usually manifested in two areas: firstly, an ageing and/or declining population; and secondly, a drop in the productivity of new investments due to an exhaustion of technological change—or, perhaps more alarmingly, because new technologies require somewhat less capital investment than their predecessors.

If this were true, we would be facing a future of low growth, possibly exacerbated by deflation and chronically high unemployment. In this scenario, interest rates might remain low for quite some time without ever having a truly stimulating effect on the economy, while causing major distortions in the distribution of income and asset allocation and creating a high risk of recurrent asset bubbles.

**SECULAR STAGNATION DEFINES A SITUATION
WHERE THERE IS A CHRONIC DEFICIT OF INVESTMENT
WITH RESPECT TO SAVINGS, LEADING TO LESS
GROWTH IN THE MEDIUM AND LONG TERM**

Of course, these two alternatives are not mutually exclusive: the reality could be a combination of both. But the critical question is this: are we essentially in the final stages of a “savings glut” or in the early stages of a secular stagnation process?

No one can deny that there is evidence of a savings surfeit. However, even if this were the fundamental cause of the current situation, it is not at all clear that the problem can be solved quickly or solely by resorting to demand-stimulating policies. I say this for two reasons: firstly, because changing the policies of the countries that are generating this current account surplus will not be easy, as China’s recent difficulties clearly prove; and secondly, because excess saving also has long-term causes related to demographic factors.

Over the past decade, in addition to a very steep rise in the current account balance of emerging economies, we have also witnessed a rapid increase of pension funds accumulated by “baby boomers”, the largest and most prosperous generation in the history of the world’s developed countries.

This has triggered a staggering rise in the demand for premium financial assets, fixed-income instruments issued in the most advanced

nations, which has helped to keep interest rates low. The “baby boomers” are now nearing retirement age, and in fact many of them are already pensioners, but it will be another decade before the process is concluded.

On the other hand, categorically diagnosing our global problems as a case of “secular stagnation” would be very risky. At this point we do not have sufficient data, and the data we do have is far from conclusive. Yet the global economy does seem exposed to that risk, which must be assessed in terms of two factors. The first is demography, and the second is technology.

With regard to the demographic factor, the global population growth rate has been steadily declining, from the highest recorded rate of 2.2% per annum in the early 1960s to around 1% per annum today. By 2050, it will be less than 0.5%. Meanwhile, the world’s population is growing older, and not just in developed countries. By circa 2050, one-third of China’s population will be over the age of sixty (compared to 12% at present). And Europe’s demographic outlook is much worse than that of other regions, with the exception of Japan.

Naturally, as the population shrinks and/or moves into retirement, economic growth tends to slow down and can even become negative unless productivity rises to offset the diminishing workforce.

Therefore, the real issue is: what will happen to productivity? And in economics there is probably no question harder to answer than this.

In order to address this issue, it may be helpful to turn the clock back to the late 1930s, when Alvin Hansen first coined the term “secular stagnation” (Hansen 1938). Hansen observed that the expansionary policies of Roosevelt’s New Deal were only having a modest effect on economic growth in the United States, and that recovery from the Great Depression was proving to be slower and weaker than after past recessions. He concluded that this was due to a slowing of both population growth and technological progress, and that it would lead to a prolonged period of low growth for the US economy.

Of course, Hansen could not have foreseen the impact of World War II and the economic boom that followed, thanks to the accelerated pace of technological development and the surge in population growth (the “baby boom”).

Today, the question is whether or not developed nations will be able to capitalize on the demographic momentum that emerging countries are expected to maintain for at least another generation, and, above all, how the technological change currently underway will affect investment and productivity.

The Impact of Technological Change on Growth

When attempting to assess the impact of technology, our greatest difficulty probably lies in the nature of today's technological progress, which differs in many ways from what we have experienced in the past.

It seems clear that we are in the midst of a period of rapidly accelerating scientific and technological change, which might aptly be called a revolution. Every revolution in the history of humanity, from the Neolithic Revolution of agriculture and the first settlements to the Industrial Revolution that began in the late 18th century, has created a dramatic increase in the need for capital to develop the infrastructures and tools of new production systems and a very clear and significant rise in productivity.

In contrast, the data we have regarding the current technological revolution's impact on productivity show absolutely no recent improvement in total factor productivity. In fact, different sources—for example, Robert Gordon's (2012) statistics on total factor productivity in the United States, the world leader of the tech revolution—show that since the 1970s total factor productivity has risen at fairly steady rates (between 0.5 and 1% per annum), which contrasts sharply with the period between 1920 and 1970 when the annual growth rate was consistently above 1.5%.

If this were the case, the prospects for future growth (with or without secular stagnation, a theory that Gordon also rejects) would be quite disheartening.

However, there are several arguments that seem to refute this conclusion. The first is that this technological revolution is more about the provision of services than about goods; theoretically, more and better services are being produced and offered to customers. And, as Joel Mokyr (2014) points out, conventional tools of statistical measurement are designed for a “steel-and-wheat economy”, not one in which information and data constitute the key inputs and outputs in many sectors.

Many of the new goods and services are expensive to design, but once they work they can be mass-reproduced and copied in almost infinite quantities at very low or zero cost. Consequently, they have a huge impact on consumer welfare but contribute very little to product output, as we measure it. Moreover, many of these services are provided free of charge via the internet in exchange for benefits such as advertising, customer recruitment, or information that are very difficult to quantify.

A growing percentage of investments are also being made in intangible assets, especially software.



InMoov animatronic android robot, made from 3-D printed parts.

All of this leads to widely acknowledged problems with the measurement (undervaluation) of GDP, investment, and productivity which, if corrected, would probably paint a very different picture of future growth. Finally, as Mokyr observes, technological revolutions develop and bear fruit over a very long period of time and often in unexpected ways. Today we have increasingly powerful technology (tools and instruments) for scientific progress, which in turn will eventually lead to new technological breakthroughs. The technological revolution is just beginning.

Even limiting ourselves to what we know today, we can come up with an infinite list of ways to spur investment and future growth: new materials, multiple advances in life sciences, artificial life, the Internet of Things (IoT), nanotechnology, 3-D printing, more/better use of all kinds of physical assets, from property to transport infrastructures and cars, thanks to initiatives like Airbnb, Uber, and Lyft, the development of smart cities and all types of intelligent buildings and infrastructures...

All things considered, it is quite likely that the breakthroughs of this technological revolution will require less investment than that needed in earlier tech boom periods. Let us compare, for example, the capital investment needed to set up Amazon with the amount required to open the countless bookshops and other establishments where purchases had to be made in the past, or consider the effects of Airbnb and Uber

on investments in hotels and transport. Everywhere we turn, we find evidence that the information revolution is turning out to be less capital-intensive than earlier “analogue” revolutions.

In fact, the information revolution may be reducing investment through other channels: the accelerated pace of change itself and uncertainty about how the technological revolution will affect different sectors and industries may be dissuading many companies from making investments, simply because they are not sure how, where, or in what they should invest. Support for this theory is found in the fact that, at least in developed countries, companies are accumulating unprecedented amounts of financial assets.

In short, despite the serious problems with our measuring instruments, it could be true that the technological revolution has brought investment levels down. But that does not necessarily mean that this effect is permanent or that productivity will be low in the future, for two good reasons.

First of all, at some point companies will decide to invest their liquid assets or return them to shareholders, who in turn will seek profitable investments for their funds. Secondly, many of the breakthroughs now being announced in biotechnology, artificial intelligence, IoT, self-driving cars, and other fields will eventually require much larger capital infusions in order to realize their full potential.

Even if the information revolution needs relatively low levels of fixed capital, this does not mean that it lacks the potential to boost productivity. Quite the contrary: it is hard to imagine that the information revolution could create stagnation in the medium and long term. It seems much more likely that, as in the past, scientific and technological progress will increase productivity and improve living conditions in the medium and long term.

The global economy is undoubtedly facing what Robert Gordon calls “headwinds”. Chief among them are the demographic issue and burgeoning government debt, which would pose a much more serious problem in a future without growth or inflation. Gordon also cites the plateau in educational attainment since the 1970s (in developed nations) and rising inequality, which means that a larger proportion of total income and wealth is concentrated in the hands of those least inclined to spend it.

Even some of the economists who are most optimistic about the effects of technological progress, like Brynjolfsson and McAfee (2013), have expressed concern, not over the future of global production but over the

future of employment: firstly, because demographic changes promise a drop in the labour force participation rate; and secondly, because advances in technology herald the disappearance of a large number and variety of existing jobs, whose current occupants will be replaced by robots or simply deemed unnecessary as the stunningly rapid pace of technological development increasingly allows us to meet our own needs without the intervention of others. In fact, in both Europe (with the possible exception of Spain) and the United States, fewer jobs are being created during this economic recovery than in previous post-recession periods.

However, past experience tells us that the “new economy” may end up creating a much greater number of “new jobs”. At the same time, higher global productivity could eventually increase the amount of leisure time available to each person. Nonetheless, it is impossible to know what direction and how long this adjustment will take, because it largely depends on the policies implemented to facilitate it. If the right measures are not taken, the transition phase could be very painful for many individuals, industries, and geographical areas.

These types of concerns and radical changes in the economy and labour market are nothing new. And despite the buffeting headwinds, the tailwind of science and technology is potentially much stronger in the long term.

I say “potentially” because it is important to create the right conditions for capitalizing on the positive effects of technological progress, solving the global economy’s current problems, and facilitating or driving the transition to a new environment.

As Barry Eichengreen (2014), one of the authors featured in this book, has noted, if the global economy—or the economies of developed countries or, more specifically, the European economy—does experience secular stagnation, it will be self-inflicted, signalling a failure to repair the damage caused by the Great Recession and adopt effective policies for boosting demand and correcting the structural flaws that pose a hindrance to rising productivity and economic growth.

Europe’s Diminishing Global Clout

The preoccupation with secular stagnation—or, more generally, the possibility of a prolonged period of weak growth, with deflation and very low interest rates—was fuelled by an observation of recent economic trends in the most developed countries: the United States, Europe, and Japan.

However, the trend in emerging countries has been quite different. In many of these economies, the effects of the crisis were much less severe and recovery was swifter and more vigorous.

During the two decades leading up to the crisis, the growth differential between emerging and developed countries had been three percentage points on average, but it rose to nearly five points in 2010.

As a result, the global economic clout of emerging areas has continued to grow. In 2004, emerging countries accounted for 46% of world GDP (at PPP) compared to the 54% produced by developed nations. In 2007-2008, they reached 50%. Today they represent nearly 60%, and within ten years they will account for three-quarters of the world's economic growth. Furthermore, over 75% of global growth is concentrated in the Asia-Pacific region (which includes Eastern Pacific coastal areas of the Americas).

THE WORLD'S ECONOMIC CENTRE OF GRAVITY HAS CONTINUED TO DRIFT EASTWARDS AT A SPEED NEVER SEEN BEFORE

Consequently, the world's economic centre of gravity, formerly located on the shores of the Atlantic Ocean, has continued to drift eastwards at a speed never seen before.

Meanwhile, the major emerging economies—China, India, Russia, Brazil, Turkey, Mexico, Indonesia, etc.—have gained power and influence on the world stage (all of these aspects are illustrated on the page preceding the third section of this book).

However, the recent problems of the Chinese economy and their effects on oil and raw material exporters—countries already hard hit by the drop in demand from developed nations—have narrowed the growth differential between emerging and developed regions by at least two points in 2015.

In this context, there is growing concern about the impact that a very low growth scenario in developed countries might have on the future growth of the rest of the world.

Although a situation of permanently debilitated demand in developed nations would undoubtedly affect growth in emerging countries, it is foreseeable that their demographic growth potential and cost advantages will allow the process of income convergence to continue in coming decades. In the medium term, however, there is a risk for emerging countries—at least for many of them—linked to the disruptive nature of new technologies and the possible persistence of a “digital divide” between

the most and least advanced economies. Automation may eliminate the advantages of low wage levels, and the availability of highly skilled workers is more important when choosing a location for high added-value business activities than any cost considerations.

Therefore, though emerging countries are less vulnerable to the risk of a “secular stagnation” scenario, they have good reason to be wary of this possibility and, of course, to avoid falling behind in the process of technological change.

The Economic Policy Debate

The policies required to achieve these goals are not substantially different from those needed in developed countries, although they do need to be tailored to address the most serious shortcomings of emerging countries, essentially with a view to promoting institutional stability and governance, levels of education, and fiscal systems capable of financing infrastructure improvements, reducing informality, fighting poverty, and improving social cohesion.

But what policies should be adopted at the global level? The answer depends on whether or not secular stagnation is a real risk.

A number of very radical policies have been suggested to overcome a scenario of secular stagnation in which extremely low interest rates and even major quantitative monetary easing proved insufficient to stimulate growth.

For example, some have proposed a reformulation of monetary policy, raising the inflation target to, say, 4%, and of fiscal policy to create a much stronger and more enduring stimulus, with the consequent increase in debt. Yet these options could create very serious difficulties in the future if the problem we are facing is not as acute and persistent as some fear.

There are also grounds for doubting their feasibility. For instance, if inflation today is clearly below the target rate of 2%, is it plausible that the announcement of a higher target would trigger a rise in inflation expectations? As for fiscal policy, there is a limit beyond which debt ceases to be sustainable; and, unfortunately, most developed countries have already accumulated a massive debt stock that comes close—to close, in some cases—to that limit.

On the other hand, it does seem possible (and necessary) to maintain current expansionary monetary policies for some time yet—even

intensifying them temporarily in some areas, like Europe—and to adjust the correction of fiscal imbalances until such time as we begin to see evidence of sustained improvement. These expansionary policies may be combined with other measures that contribute to debt sustainability and potential growth, such as raising retirement age or offering incentives to hire members of social groups with lower employment rates.

There is a package of suitable measures for combating the global economy's current problems, which would also have a very positive effect in any future scenario.

I am referring to what are known as “structural reforms” to improve infrastructures, increase market flexibility (including job mobility), simplify the creation of new businesses, reform antitrust laws, stimulate research and development, and—a crucial reform in the long term—improve education.

At the same time, it is essential to create a suitable global framework for migration. Immigration can be a very positive tool for helping to solve the long-term problems of developed countries while simultaneously addressing the needs of many less prosperous regions.

We also need to devise a free, balanced, and fair scheme for global trade and investment flows. Within this scheme, it is vital to establish a set of basic common rules for the development of the digital economy.

Finally, it is both possible and necessary to improve the efficacy of our monetary policies. For any level of official interest rates, the most important rate to those seeking financing is the one they can obtain from the banks or, in the case of large corporations, on the markets. When the official rate cannot be lowered any further, the economy's financial conditions can be improved by increasing the efficiency of the financial markets and intermediaries. This topic is the focus of the second part of my article, and I will come back to it shortly.

Europe: A Critical Case?

In the ongoing debate about the severity and persistence of the problems that wreaked havoc on the global economy during the 2007-2008 financial crisis and the great recession that followed, the case of Europe seems to be particularly serious; growth is very weak in comparison with the United States, where concerns about secular stagnation were first voiced.

In fact, British economist Nicholas Crafts (2014) has stated that this preoccupation in the US might merely be a case of hypochondria, whereas in Europe it may be a well-founded fear.

In his article for this book, Bart van Ark illustrates the correlation between Europe's slower growth and poorer productivity performance. This, in turn, is linked to much less promising demographic projections.

In the case of Europe, in addition to these unfavourable base factors, there are also a series of limitations and difficulties when it comes to designing and implementing common policies with the necessary agility and decisiveness, owing to its peculiar structure and weak governance regime.

At this point in time, Europe does not have a unanimous opinion on how much leeway exists for adopting a more expansionary monetary policy, or for stimulating the economy with fiscal measures (although it must be said that this leeway is different in each country and in some cases is dangerously narrow due to the accumulation of heavy debt).

These difficulties in dealing with problems reflect a deeper political and social division between different countries and even within each country; some see the EU and/or the Eurozone as valid mechanisms for stimulating growth and wellbeing, while others consider them part of the problems that Europeans face today.

Confidence in the Eurozone is diminishing and, for the first time, a member-state (the United Kingdom) has formally proposed a referendum to decide if it wants to leave the European Union.

In other words, worsening prospects of future growth for Europe are being exacerbated by a political and social crisis.

Even so, and despite the shortcomings of the EU's institutional framework, political discrepancies, and social tensions, the way that the European Union and the Eurozone have reacted to their problems proves that this project still has great resilience.

Though belated and far from comprehensive, very positive steps have been taken on three critical fronts. The first is the creation of mechanisms to help countries that find themselves in dire straits. This managed to avert disaster in several nations of the European periphery, which could have been fatal to the monetary union.

Secondly, the ECB has finally begun to wield its power as a very effective instrument for promoting growth and cohesion in the region. And thirdly, a road map for the institutional reform of the Eurozone has been clearly set out in the so-called Five Presidents' Report, released in June



The retirement age reform has triggered resilience within the EU. In the image, a worker over 65 years old.

2015. The stated objective of this plan is to achieve a true monetary union in the next ten years, completing the banking union and moving towards fiscal and political union.

Within this package of institutional reforms, significant progress has been made in several areas, most notably the banking union. A sole supervisor and a resolution fund are already in place. Two fundamental pieces are still missing: the creation of a common last-resort financing mechanism for that resolution fund and the design of a common deposit guarantee scheme. However, substantial headway has been made, and the extreme fragmentation of the Eurozone's financial systems brought on by the crisis has been drastically reduced.

The road ahead is long and arduous. Yet it seems clear that a more integrated Europe has a better chance of weathering the storms it faces—economic stagnation, political and social instability, and geopolitical irrelevance in the new world order now taking shape—than a fragmented, divided Europe.

Certain critical problems can only be solved with common strategies and programmes.

The demographic problem is the first and undoubtedly the most complex, because it is especially acute in Europe and has built up a strong momentum.

According to the United Nations, in the year 2000 there were four people of working age (between age twenty and twenty-four) for every person aged sixty-five or older in Europe. Today that proportion is nearly three to one, and by 2050 it will be two to one. Even assuming a rise in the birth rate and immigrant influx in the coming years, the proportion of retired to working persons will remain high (in absolute terms and in comparison with other parts of the world) and maintain its upward trend.

However, the effects of this tendency could be mitigated by strengthening the political and economic union. First of all, a stronger union would facilitate a better distribution of the existing labour force within the Eurozone, putting workers where they can be most productive and slashing the general unemployment rate. Secondly, experience has taught us that European agreements make it easier to undertake reforms that may meet with resistance, such as raising retirement age. And it goes without saying that a concerted European plan is the best way to maximize the benefits and minimize the tensions derived from immigration flows, which will be increasingly necessary in the years to come.

Reform policies aimed at stimulating productivity will remain in the hands of national decision-makers, and predictably for quite some time, until a very high degree of political integration is finally achieved (if it ever is). Yet the gradual strengthening of the fiscal union will force national governments to increasingly rely on these instruments in order to correct trends in their respective economies, as they gradually lose the ability to act autonomously in other policy areas.

The scope of reforms for improving productivity in Europe is very broad. In the first place, recent research (CompNet Task Force 2014) has revealed that, within the Eurozone, there are enormous differences between the most and least productive companies, and that productivity distribution is heavily skewed, with a large number of relatively unproductive firms and a few highly productive enterprises.

For this reason, reforms designed to make labour markets more flexible (Europe's are clearly more rigid than in the US or the majority of other OECD countries) and streamline the procedures for starting up and winding down companies, which vary significantly from one country to the next, could have a tremendous impact on productivity. Moreover, these measures would encourage the free movement of both labour and capital resources among countries, another way of increasing efficiency.

One OECD study (Bouis and Duval 2011) quantified the impact of a broad package of structural reforms: it would increase the GDP of

European countries by around 11% in ten years (compared to a gain of less than 5% in the United States).

In summary, Europe's growth is being stunted by a number of highly complex problems. But Europe also has the potential to make vast improvements and the capacity to take effective action. Structural reforms can bring about a remarkable increase in the region's productivity and growth potential. And advances in the ongoing process of European integration could be a very powerful catalyst for these reforms.

Specifically, a more integrated financial system would mean a better allocation of resources in the region. In this respect, the banking union—accompanied by steady progress towards the Capital Markets Union—represents a structural reform that would lead to the creation of a more open, competitive, and efficient European financial market. Every new step taken in this direction is particularly important today for reducing the cost of capital and improving the transmission of monetary policy in a context where official interest rates are currently at zero.

The Imminent Revolution of the Banking Industry

As it heads into that integration process, the European banking industry undoubtedly finds itself at an especially difficult juncture. The current scenario is marked by, on the one hand, very low interest rates and an extremely flat yield curve, and on the other, very sluggish credit demand, primarily owing to the situation of low economic growth and the ongoing process of corporate and household deleveraging.

In addition, banks must now operate in a much stricter regulatory environment. The new regulations enacted after the 2007-2008 crisis, while undoubtedly serving to stabilize the system, have a negative effect on the banking industry's capacity to grow and generate profits. These are not transitory factors; the economic pillars of the banking business have changed in such a way that, for the foreseeable future, banking will grow at a slower pace and be less profitable than in the past.

These problems are not limited to European banking. Economic growth and rates are low in all developed regions, and regulations are tougher across the globe. However, in Europe the demographic and growth prospects are more worrisome.

This problem is not unique to the banking industry. As experts have repeatedly pointed out, the current situation poses an obstacle to

monetary policy transmission and increases the cost of capital, undermining the efficacy of the ECB's efforts to spur growth. The European banking system therefore needs to dramatically improve its efficiency.

One method of improving efficiency and profitability, used frequently in every industry, is consolidation. Like other developed regions, Europe is witnessing the gradual consolidation of its banking sector, a process that picked up speed when the financial crisis hit. But this process is still proceeding very slowly and cannot keep up with the mounting pressure on

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the banking business. In the countries that now form the European Union, there were approximately 9,500 banks in 2001 (i.e., at the beginning of the century); today, after fifteen years of a single market, advances in integration, and a severe financial crisis, over 7,100 banks still remain. In other words, the number has been reduced by 25%. In Eurozone countries, which have the additional factor of a common currency, in 2001 there were around 7,700 banks, and today there are 5,500, meaning that the ranks have been thinned by less than 30%. Statistics on the diminishing number of banks are similar or even slightly higher in the US.

It should also be noted that most of the eliminated banks were very small, so the reduction in installed productive capacity was actually even less significant. And there have been very few cross-border acquisitions or mergers.

In summary, over the past fifteen years, neither the single market nor the euro nor the financial crisis have managed to radically alter the European banking map, although certain countries (Spain, for one) where the banking crisis was especially severe have registered a higher level of consolidation. Progressing towards a European banking union and increasing pressure on margins and growth could accelerate this process, but it is highly unlikely that consolidation alone will suffice to achieve the substantial improvements in efficiency required today. In the past, political and regulatory issues were the primary obstacles to consolidation; now, these are joined by the fact that, for most banks, inorganic growth operations are less of a priority than the need to meet regulatory requirements and revise their business models.

Of course, another mechanism for increasing income and margins is branching out into other areas with better growth prospects and higher interest rates. But this is not an option for all banks, and it is also affected by the existence of the abovementioned priorities.

There is, however, another much more powerful factor, which simultaneously demands and facilitates a swift, substantial improvement in the efficiency of the financial system: technological progress.

Technological change has already forced a large number of industries—communications, the media, music, travel, different distribution sectors, etc.—to reinvent themselves and reap staggering gains in productivity and efficiency thanks to the network economy, a dramatically reduced need for physical investments, and the relative ease of reaching a global audience, among other factors.

The financial industry has certain features that make it a prime candidate for a radical IT-based switchover, because its basic raw materials are data and money. And money can be turned into accounting ledger entries—in other words, data.

For this reason, I have long been convinced that banking, and the financial industry in general, is due for a radical and rapid change.

While significant changes have transpired over the last two decades, they are not comparable to the revolutions we have seen in other sectors. This can be chalked up to a number of factors: the historically high levels of customer trust in banks; the industry's high rates of return and growth (up until the financial crisis) which discouraged experimentation

**THERE IS A NEW GENERATION OF CONSUMERS WHO HAVE
GROWN UP IN THE DIGITAL WORLD AND DEMAND OTHER
SERVICES AND OTHER WAYS OF ACCESSING THEM**

and change; the fact that, until quite recently, banks probably did not put enough effort into developing the infrastructures they needed to harness the full potential of new technologies; and, of course, regulation that limited the freedom of institutions to engage in disruptive innovation and protected them from the possible competition of newcomers.

But all of this is changing, and now, at long last, the banking industry has embarked upon a rapidly accelerating transformation process. The economic foundations of the business have changed for the worse, making transformation even more urgent and necessary. But customers are also changing: the crisis severely tarnished the reputation of banks and

shook people's trust in them. Most importantly, today there is a new generation of consumers, people who have grown up in the digital world, who demand other services and other ways of accessing them, and who are willing to accept banking services from other companies: recent surveys reveal that between one quarter and one half of all US consumers would, if they were offered, pay for financial services provided by firms like PayPal, Apple, Google, or Amazon, or by major telecom companies.

Meanwhile, infrastructure improvements are accelerating the spread of technological innovations. We are already at the stage where new-fangled innovations have an immediate and visible impact on the daily activities of people (and, therefore, on banking activity). And this in turn accelerates technological development, resulting in so-called exponential technologies: smartphones, blockchain technology, artificial intelligence, natural language processing, cloud computing, biometrics, IoT, big data... all of this is going to radically alter the banking industry. I am not talking about things that will happen in some unknown or distant future. They are happening right now. Hundreds of startups are already attacking different links in the banking value chain. These companies, unburdened by the "legacies" of costs that banks carry, take full advantage of technology and their own flexibility and low costs to offer customers a better experience at very low prices: payments, loans, share purchases/sales, and asset management are probably some of the areas under heaviest attack. But initiatives with tremendous potential to shatter the status quo are also making inroads in insurance, deposits, risk management, cybersecurity, capital markets, and other fields.

Just as it happened in other sectors, these new "fintech" initiatives are growing by leaps and bounds. In 2014, they attracted investments amounting to over 12 billion dollars, three times more than the previous year. And in the first half of 2015, investments in fintechns were estimated at more than 13 billion dollars, already exceeding the amount invested over the entire previous year. Many of these firms are not so small anymore. Recent estimates indicate that more than thirty of them have attained "unicorn" status, a term used to describe companies with a valuation of 1 billion dollars or more. And this number is going to double or triple each year.

Hardly any segment of the banking industry has escaped the invasion of these new competitors, and virtually no domestic market is "safe" from them. This is true because their activity is global—if not now, at least potentially—and because important developments are not limited

to the United States (where about 60% of these firms are located). Another 20% are established in Europe, and there is considerable activity in the emerging world. China, India, Latin America, and even Africa have some very interesting proposals, largely aimed at providing banking services at a very low cost to the extremely high proportion of the world's population with low income levels, for whom conventional banking is not affordable.

These companies could have a very strong impact on bank income and profits in the medium term. A recent McKinsey report (2015) estimates that banks could lose 40% of their profits in consumer finance, 30% in payments, and 25% in loans to SMEs.

However, the majority of these new competitors in the banking/financial industry rely on conventional banks to “deliver” their services. In most cases, they lack the organization and/or financial capacity to offer an end-to-end service. As Marc Andreessen, co-creator of Mosaic and Netscape and now a venture capitalist in the field of technology, recently said, fintech companies “are reinventing the user experience but not ‘the whole thing’”.

Even the big digital corporations (Amazon, Google, Apple, etc.) that are already combining their range of products and services with certain financial services have so far been reluctant to offer a broad, complete range of banking solutions, primarily because they would rather not have to comply with the industry's strict regulations.

But all of this will change. And banks that hope to prosper in this new technological world have to react quickly, because the window of opportunity that is open today will close at some point.

For some, no doubt, it is already too late. The pressure of technological progress will be the true driver of the sweeping consolidation that this sector must undergo. More importantly, it will be the driver of a dramatic improvement of productivity and efficiency in banking, on the same scale as that experienced in other already “digitized” industries. And all of this will benefit investment, economic growth, and, ultimately, the consumers.

We are already moving towards a new banking industry, and this process involves several very different agents.

On the one hand, we have “conventional” banks, which on the plus side have the vast majority of customers and a wealth of information on them, production and distribution infrastructures, the licences required by regulations, and financial resources. But they are also burdened by very inflexible, costly structures, cumbersome processes, and obsolete corporate



A group of PayPal workers in front of the Nasdaq headquarters in New York.

cultures and they are far removed from the arena where the latest technologies and the most disruptive innovations are being developed.

On the other hand, we have newly-formed companies that are highly agile and flexible, creative, innovative, and in tune with the technological world. What they do not have are customers or the infrastructure needed to get them, a consolidated brand, significant financial resources, or experience in the banking business to broaden their initial scope of activity.

Finally, we have the big names in online business, with customers, a brand, and the resources to make up for any lack of infrastructure or experience they might have, but for whom financial services are not a top priority (undoubtedly because of their reluctance to enter such a tightly regulated sector).

These three groups are the key components of the new digital banking ecosystem that is beginning to take shape. The million-dollar question is: who will be at the centre of this ecosystem? Or, to put it another way, who will “own” the customers?

Few banks will be able to fill this position, because it requires a long, complicated, and costly process that will entail not only a radical technological transformation but also a profound organizational and cultural change. Consequently, many banks will disappear; others will become generic brands, providing infrastructure services for other financial firms;

and a few will evolve in time and become information and software companies that offer a much wider range of products and services (including non-financial services), capable of making a radically different and better customer value proposition with the ultimate goal of providing the best possible experience for each individual customer.

The banks that conclude this transformation most successfully will become the “regulators”, owners, and managers of a very wide and heterogeneous platform, on which “banking” will interact and cooperate with a large number of specialized suppliers and with the customers, turning data into knowledge that will allow them to design and deliver the best solutions and the best experience to each customer.

The Transformational Experience of BBVA

This is what we at BBVA understand by the term “digital transformation”. And this is what we are doing.

Of course, this does not mean we neglect our day-to-day business concerns: we are one of the most efficient and profitable big banks in the world, and we have increased our market share in Spain in the consolidation process following the financial crisis. We have also established a solid presence in regions with better prospects than Europe for long-term growth: the US, Mexico and other Latin American countries, Turkey, and East Asia are currently key markets for our group.

But the pillar of our strategy, our vision, and our future is digital transformation. In my article for the book added to this collection last year (González 2014), I described the foundations of this transformation and the process it has followed, so here I will simply offer a very brief overview and explain the latest advances.

At BBVA, we describe this transformation by likening it to the process of building a house: in that digital “house”, the foundation is technology; the floors and walls are processes, products, organizational structure, and corporate culture; and the roof represents the channels or points of contact with our customers.

With regard to the foundation, after eight years of hard work, at BBVA we now have a modular, scalable, state-of-the-art technological platform that is already fully functional. This platform is capable of processing the exponentially growing number of transactions we will have to handle as the digital revolution sweeps across the banking industry. It also gives

us an advantage over the vast majority of other banks, because most of them are still operating in what Professor Weill from MIT calls “spaghetti-like” IT landscapes, technological platforms designed in the 1970s that they have attempted to update with countless patches, modifications, and add-ons. Such platforms are not up to the task of handling the volume and increasing complexity of future data processing requirements.

Today, our platform lets us work in real time; manage an ecosystem open to third parties (other service providers); deploy much more sophisticated cybersecurity and data protection architecture; glean much more knowledge from our raw data; and turn that knowledge into products and services, drastically reducing our time to market.

However, the technological platform is not the answer to everything. It is merely a tool in the hands of people, one that enables them to design and build a better customer experience.

Once the foundation has been laid, we must put in the walls and floor slabs. This translates into a transformation of operations and processes. And to effect that transformation, a new organizational structure is needed.

For this reason, in 2014 we created a Digital Banking Division endowed with broad powers and substantial resources for accelerating the transformation. This decision had positive results that motivated us to go one step further: a year later, in May 2015, we completely reorganized BBVA’s management structure, and the head of our Digital Banking Division became the COO.

From that moment on, “Digital” BBVA has led the process of transforming the entire group, heading up a structure with two basic objectives: first, to boost results in all of the group’s business areas in the medium and long term, and second, to endow our group with the means (human and technological resources) to successfully compete in the new digital banking industry.

Of course, in these years we have also taken measures to improve our roof, the channels through which our products and services are distributed. Today, our digital channels serve 14 million customers (over 20% of our total client base), including 7.5 million customers via mobile phone. These channels are growing rapidly and proving to be a highly effective method for increasing sales of loans, consumer products, pension funds, and other products.

At the same time, we are establishing different collaboration schemes with fintech startups and developers: we have opened up our platform

to some of them (Dwolla, for one); we have partnered with others on different development projects; we have acquired startups that offer us special capacities and knowledge; and we have created a venture capital fund to invest in innovative firms in our industry.

All this is helpful for our transformation, but the most important factor is involving all of our employees in the process. To this end, we completely overhauled our Human Resources Department (now the Talent and Culture Division), which has the mission of creating a more flexible, agile, enterprising corporate culture.

At BBVA we are always evolving and improving our digital house. We have come a long way, and I believe we are in a position to lead the transformation of our industry and become one of the world's first knowledge banks (and hopefully the best), fully integrated in the digital ecosystem.

Even so, we know that much work remains to be done; our transformation is far from complete. In any case, the pace of technological change is still accelerating, and society continues to change.

Digital transformation is a race that has no finish line or predetermined courses. The rulebook for the digital banking industry has not even been written yet.

The Future of the Financial Industry: Regulation and Digital Transformation

Regulation is a crucial issue that will determine, in one way or another, the future course of the digital banking industry.

Today's technologies have tremendous disruptive potential and offer countless opportunities to improve the quality, convenience, and cost of financial services. This would be highly beneficial for consumers in Europe and round the world, especially the billions of low-income individuals who currently do not have access to financial services. At the same time, a more efficient system will bring down the cost of capital, boosting investment and growth.

However, in order to realize those potential benefits, we need proper regulation. Today the digital banking industry is practically unregulated. Consequently, we are left with a vast no-man's land in such crucial matters as macroeconomic and financial stability, the spread of shadow banking, consumer protection, data privacy, cybersecurity, and the issues of money laundering and financing illegal or criminal activities.

Two different types of agents are operating in the financial industry today: the traditional players, the banks, whose activity is governed by very tight, exacting regulations; and the new digital players, who have a much more permissive set of rules or no rules at all. This gives one team a huge competitive advantage over the other, in a highly favourable situation for the development of the industry segment flying below the radar of regulators and supervisors.

Until now, these watchdogs have not kept pace with changes in the industry. The financial crisis and all its consequences and ramifications have been, quite understandably, their principal and practically only concern.

But this has to change. In fact, it is already starting to change. It is important to develop a system to regulate and supervise digital financial activities, a system that will have to strike a difficult and delicate balance in several areas.

First of all, it must strike a balance between stability and efficiency, establishing an appropriate degree of control without suffocating innovation and combining the need to protect consumers from potential harm with the need to maintain the benefits of better costs and greater convenience for them.

Secondly, balance must be achieved in the conditions of competition between banks and digital newcomers. Regulation should allow banks to use technology to offer their customers better, cheaper, and more convenient services. At the same time, newcomers should be regulated to a certain extent, depending on the kind of business activities they pursue.

And all of this should be done at the global level, because digital banking is, and can only be, global. This is certainly a daunting task, but an absolutely necessary one if we want to guarantee future financial and macroeconomic stability and harness the vast potential of technology to boost productivity, growth, and personal wellbeing.

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