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Opening address

Decarbonising the Economy Forum/El Confidencial

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Good morning. Let me thank the digital daily newspaper *El Confidencial* and *Acciona* for its kind invitation to me to open this forum on decarbonising the economy.

Introduction

Evidently, the consequences arising from climate change, associated with global warming, have in recent years come to the forefront of society's main concerns. It is a transversal concern that is translating into initiatives ranging from the most supranational scope possible down to the most local level.

To offer a specific example, we can see every day in the newspaper headlines how matters such as the quality of the air we breathe in cities are polarising much of the political debate, mainly at the municipal level but also regionally and even nationwide.

If we raise our sights a little it is clear that these air quality policies are also in response to various European regulations, at least since 1996.[1] In turn, the European regulations are part of a more global response to pollution, which is reflected in various international agreements.

The general public also share this concern. Testifying to this is a recent survey by the Real Instituto Elcano[2] in which 97% of Spaniards agree that climate change is a reality and 92% believe that humans are chiefly responsible.

This movement is underpinned by a wealth of scientific evidence. It shows that global warming is associated with economic (and therefore human) activity and, more specifically, with the emission of greenhouse gases. Such emissions are chiefly responsible for the polluted air we breathe.

Apart from its effect on pulmonary diseases and people's quality of life, pollution correlates with a rise in the planet's average temperature. That may severely affect the economy, tourism and agriculture, prompting potential humanitarian or migratory crises we can hardly evaluate at present.

I believe we will all agree that climate change is the most global matter we can imagine, both in its consequences and its causes. Clearly, a potential rise in temperatures affects the entire planet. And evidently, too, atmospheric pollution does not stop when it reaches a border.

Fortunately, most countries are adopting strategies to reduce greenhouse gas emissions as a way to mitigate the associated risks. Let us not forget that, despite this being a global problem, the rise in temperatures would have different effects from one country to another,[3] hence the importance of international agreements being reached.

[1] Among the key pieces of legislation setting ceilings on pollutants in Europe are the 2008 Directive on ambient air quality (2008/50/EC) and the 1996 Framework Directive on ambient air quality assessment and management (96/62/EC). See https://www.eea.europa.eu/

[2] http://www.realinstitutoelcano.org/wps/portal/rielcano_es/contenido?WCM_GLOBAL_CONTEXT=/elcano/elcano_es/zonas_es/encuesta-espanoles-ante-cambio-climatico-sep-2019

[3] Some studies indicate that global warming may be proving economically and socially beneficial for the rich countries, in particular the coldest ones such as Sweden and Norway, while adversely affecting poorer countries. See Noah S. Diffenbaugh and Marshall Burke, "Global warming has increased global economic inequality".

In Europe, the European Commission has set the target of having a "climate-neutral" economy by the year 2050. In short, the aim would be to bring about the decarbonisation of the economy, as our Forum here today is called.

According to Eurostat data, Spain emitted 285 million tonnes of CO2 into the atmosphere in 2017. That is 7.5% of total European Union emissions, placing Spain sixth among EU members.

Logically, in step with their economic and demographic weight, the country with most emissions was Germany (858 million tonnes; 22.8%), while Malta emitted the least (3 tonnes; 0.1%). Since 2012, emissions per unit of value added have fallen by 14% in Spain, practically the same as in the European Union as a whole.

However, emissions should also be analysed in relation to the size of the economy and to population. Spain emitted 0.25 kg of CO2 for each euro of (2010) GDP produced, slightly less than the 0.26 kg average. In terms of population, in 2017 our emissions totalled 6.1 tonnes per capita, clearly below the European Union average of 7.3 tonnes per person.

A fair transition

Despite enjoying this slight initial advantage, the challenge of achieving a decarbonised country is a major one.

On paper, I believe nobody is against achieving this objective. However, we should be mindful that moving to a decarbonised economy entails a change in our production model. Practically by definition, such a change has systemic implications, particularly affecting specific economic sectors. Accordingly, we should conduct this process carefully and gradually if we wish to minimise any undesirable economic and social consequences.

The goal is to achieve what has been dubbed "a fair transition", affording due attention and support to those groups and geographical areas most severely affected by this process. Naturally, we should stress that the change of production model will also entail opportunities for economic agents.

In any event, we should consider how banks may contribute to bringing about a decarbonised economy; ultimately, when we think about climate change we see particularly pollutant activities, from which banking is naturally missing.

I shall try to explain today why, despite being a "low emissions" sector, banks have a major role to play as facilitators of change. If I manage to do this I hope that I will also, at the same time, dispel another doubt that many of you will have entertained: what is the Deputy Governor of the Banco de España doing opening a forum on the decarbonisation of the economy?

Combating climate change internationally

As you know, combating climate change has been a recurrent goal of international institutions, at least since the United Nations Summit in Rio de Janeiro in 1992.

Traditionally, the companies dependent on oil products have been those most affected by the environmental regulations resulting from these international agreements. Conversely, we should admit that the financial sector's involvement in this battle has been rather limited. When referring to the financial sector I include both credit institutions and central banks and supervisors. Until very recently, combating climate change was seen as something outside our remit.

Following the 2015 Paris Agreement, the fight against climate change has taken on a more specific form and greater momentum, with a term being set for fulfilment of the 2030 Agenda. Coinciding with the signing of the Paris Agreement, the role of finance in combating climate change has moved onto the agenda of international financial organisations.

This change has come about exponentially. New initiatives emerge almost daily, under the aegis of the G20, the United Nations, the Financial Stability Board or the OECD.

At central banks, I would highlight the work of the Network for Greening the Financial System (NGFS), a network of supervisors and central banks created in December 2017. In a short space of time, the number of members has increased from eight to 46, along with eight observers.

We might wonder what exactly has changed since 2015 to warrant this sudden interest on the part of banking regulators and supervisors in climate risks.

This may be summed up in two conclusions, expressed in the form of two international initiatives:

- First, in 2015, the Paris Agreement stressed for the first time the importance of the financial system in efficiently channelling the resources needed to transform the economy towards a sustainable model.

- Second, the first NGFS report, published in 2018, stated that climate-related risks were a source of financial risk, and that supervisors and central banks should shore up the system's solvency in the face of these risks.

Risk measurement

It will come as no surprise to you that, as a supervisor, I will begin by talking about the second of these elements, namely risks. The process of transition will entail two types of risks to the financial system:

- On the one hand, the physical risks caused by the direct effects of climate change, for example as a result of the gradual increase in temperature, or more frequent or more severe climate events such as storms, flooding or natural disasters.

- On the other, the transition risks. These refer to the potential effect on specific bank borrowers of the regulatory measures aimed at sustainably transforming the

economy, technological changes, and changes in customer behaviour and preferences driven by greater environmental awareness.

The two types of risk are related: the more ambitious the regulations combating climate change, the greater the transition risk and the lower the physical risk, and vice versa.

Environmental risk is a risk in its own right, although its impact materialises through "traditional" banking risks. To cite some examples, insolvency caused by a regulatory change, or by customer behaviour regarding the use of a specific pollutant technology, would be treated as credit risk; loss of image by a bank, associated with the financing of a specific pollutant economic activity, would be analysed as reputational or business risk; a significant loss in the market value of specific collateral or of a certain commodity, such as oil, would be considered market risk; and lastly, losses at a branch caused by flooding would be deemed operational risk.

In any event, when measuring and quantifying these risks, we encounter methodological difficulties. Clearly, the horizon in which the effects of physical – and possibly transition – risks are observed may be far greater than that generally used for risk assessment in the in-house models that banks use to measure credit risk, let alone market risk.

The modelling of the environmental transition poses a difficulty in that it did not take place in the past; accordingly, this risk cannot be estimated and validated on the basis of past experience.

Nonetheless, in our recent past there have been clear examples of other "transitions", even though they cannot be classed as environmental ones. We can readily find examples of solvent, strong companies that have lost their leadership position, or even disappeared, in just a few short years, having been unable to adapt to technological change or changing consumer behaviour. In short, because they did not adapt to a change in the environment.

I would highlight two points. Firstly, that the analysis of potential changes in setting that can affect business solvency is an essential part of risk assessment and management in the financial system, irrespective of whether this change in setting is caused by technological, customer behaviour-related, regulatory or environmental factors.

Secondly, we should not lose sight of the fact that the environmental transition has indeed been planned and announced. I have already pointed out that the European Commission's goal is to achieve a fully decarbonised economy by 2050. This is a reasonably long term, but achieving this goal will necessarily entail regulatory and structural changes in the economy, which will particularly affect specific sectors of activity. So we cannot say that this transition has come as a surprise or that we were not warned.

In addition, we should not forget that transition risk may also materialise as a result of changes in people's behaviour, which in practice may foreshadow future regulatory changes.

One clear conclusion would be that when it comes to assessing transition risk, we should not focus on our past but should look to the future. Indeed, if we analyse the information available in the Banco de España's Central Credit Register, we can see that after the

outbreak of the crisis, credit exposures financing polluting activities had lower default rates than other exposures.

If we eliminate the bias in these findings resulting from the inclusion of construction and real estate activity, which should not be included under either polluting ("brown") or "green" activities, polluting activities continue to have a lower default rate, although the gap between the two is much narrower.

In any event, I believe the findings are unsurprising. Many companies labelled as "brown" have high profit margins and their ability to generate profit is partly a result of their being regulated activities and having, in many cases, a dominant market position. Moreover, to date these companies have not had to assume the cost of the pollution they cause, so in an energy transition scenario their advantage in terms of profit margin could be affected.

The banking sector as a facilitator of change in the production model

I should like to refer briefly to the second point I mentioned above. As indicated in the 2015 Paris Agreement, the banking sector has an essential part to play to facilitate change in the production model. Indeed this second goal is related to the first, as correctly measuring environmental risk should assist in the transition towards a more sustainable model and would, therefore, be a logical consequence of the first goal.

As I have said previously, one essential feature of any viable business model is that banks identify and quantify all the costs and risks involved and pass them through to prices and capital. Accordingly, if banks incorporate climate-related risks into costs and capital, they indirectly become "facilitators" of change, by reducing the cost of financing of activities that contribute most to the sustainable transformation of the economy, while at the same time discouraging more contaminating activities.

The role of investors

I also wish to refer to the role that investors should likewise play as facilitators of this transition. Interestingly, the emergence of "green bonds", which was not in response to any official initiative, came well before the Paris Agreement, which could be considered to mark the beginning of the involvement of the banking sector.

In fact the history of green bonds began in 2007 with the first issue by the European Investment Bank. As you know, green bonds must be used to fund projects that are directly linked to sustainability, preservation of the natural environment and transition towards a low-carbon economy. To achieve the green bond certificate, issues must satisfy certain principles, such as the Green Bond Principles (GBP) issued by the ICMA in 2014, to be verified by external appraisal.

In general, green bonds are placed among investors with higher demand and lower costs than equivalent standard issues. The market has been particularly active in recent years, especially since the GBP were published in 2014. At June 2019, green bonds outstanding amounted to an estimated USD630 billion.

I believe it is highly significant that this market has developed aside of official initiatives, based entirely on private standards such as the GBP. Investor demand for green bond

issues is a clear sign of the growing concern about the effects of climate change, but it may also reflect a lower underlying risk. In any event, this change in attitude by investors should also serve as a catalyst for change towards more sustainable activities.

Taxonomy

I should, however, also mention a general problem that may be holding these markets back. Although the establishment of various green principles, such as the GBP, facilitated the launch of the green bond market, the lack of a commonly accepted taxonomy[4] could be hampering its subsequent development.

A shared taxonomy is essential to be able to make a coherent analysis of the green/brown bond yield spread. It is also important for the supervisor, as it permits aggregate risk and default analysis, consistent stress testing and the development of macroeconomic models, all of which are required to assess medium and long-term effects on the economy.

Lastly, a common taxonomy is needed to provide clear and consistent information to investors and the general public, as will be required of all listed companies in the future Spanish legislation on environmental transition.

In this setting, the European Commission's action plan, presented in March 2018, is crucial. The plan includes three sustainable finance regulations, including one on the creation of a "common taxonomy". I trust this regulation will be approved shortly, in accordance with the objectives set by the new European Commission, and that this taxonomy will finally provide us with a common definition of what may be considered "environmental" or "sustainable".

The role of supervisors – external initiatives

As supervisors, we clearly have responsibility for urging on these changes. We need to be proactive; in particular, we need to enter into a dialogue with banks to analyse how they are incorporating environmental risk. At the Banco de España we are intent on pressing ahead with this dialogue.

Let me mention just a few examples of recent steps taken. To assess the level of preparation for environmental risk, we conducted a survey among the 12 banks directly supervised by the SSM and several other smaller banks. Subsequently we discussed the survey findings with the participating banks, conveying to them the importance of this issue and the supervisory expectations.

According to the survey findings, many banks that were already explicitly considering environmental risk have included it in their social responsibility areas. Almost all have a team dedicated exclusively to Sustainable Finance and some also indicate that they have established specific committees, reporting in some cases to the Area General Manager or Corporate Secretary and in others directly to the Board of Directors.

[4] In general, the Green Bond Principles are updated once a year, to reflect the latest market developments. Other standards established by the Climate Bond Initiative and the credit rating agencies have also defined criteria for assessing the degree of "greenness" of issues earmarked for certain projects. Some jurisdictions, such as China, have set their own standards.

All the banks are working with ESG sustainability factors,[5] with the lack of a common taxonomy being one of the main challenges for defining these factors. But very few banks have processes and tools allowing them to identify, measure and manage environmental risk.

The supervisory expectation in the short and medium term would be for all banks to include the environmental dimension in their strategic approach and in their risk analysis and monitoring. They should keep the Board informed and should compile all relevant information, at least for new operations.

From a methodological standpoint, banks are at least expected to understand the implications of environmental risk and how it may affect their business models, including it in their risk appetite frameworks. In all cases, in a way that is proportionate to their size and complexity.

As this is a new development, we have also started work on a document that will reflect all these supervisory expectations. We hope to publish it for consultation shortly.

In addition to directly interacting with banks, we have entered into a dialogue with other agents, such as the big auditing firms, and we are also organising sessions and workshops to discuss methodological developments, for example relating to risk measurement in investment portfolios.

The role of supervisors – in-house initiatives

As well as these initiatives, which may be considered external, we are also working in the Banco de España to adapt to this new reality. Firstly, we have created an internal function entrusted with assessing the impact we as an institution have on the environment. The aim is to articulate and coordinate the necessary measures to reduce that impact.

Secondly, as a macroprudential supervisor, we clearly need to be able to assess and quantify the risks that the transition towards a more sustainable economy poses, both for individual banks and the financial sector as a whole.

Among other functions, we need to be able to assess the level of financial institutions' exposure to high-carbon emission activities, perform stress tests for the financial system overall and define scenarios and methodologies to be applied by banks individually.

In consequence, we are designing internal governance structures and methodologies, actively participating in the cultural shift in the SSM supervisory model. Naturally, we are also evaluating the information and data requirements needed to address this challenge.

Nor should we forget that central banks are also important investors in the debt markets, both in the area of monetary policy and reserve management. Although we have not yet included environmental risk assessment in our credit analysis, we are working to remedy this.

[5] ESG - Environmental, Social and Governance.

In the framework of the Eurosystem, an in-depth review of risk assessment processes is under way, aiming to ensure that all relevant factors – such as environmental ones – are taken into account for prudent central bank portfolio management.

Consideration and application of these criteria is without doubt a new development, and also for central banks. In September, for instance, the Banco de España made its first green investment, participating in a fund launched by the Bank for International Settlements (BIS) that invests entirely in green bonds.

With this type of initiative the Banco de España aims to include environmental sustainability goals in its reserve management. This is consistent with its membership of the NGFS, which less than two weeks ago published a Sustainable and Responsible Investment Guide for Central Banks' Portfolio Management.

Conclusions

I wish to conclude by emphasising, once more, how important it is that the financial sector contribute to the collective effort that meeting the goals set in the Paris Agreement represents.

The decarbonisation goals set by the Commission for 2050 pose a major challenge. 2050 may seem a long way off, but if we wish to meet these goals it is clear that the public at large, firms, banks, governments and public authorities will all have to start addressing the challenge today, with a sufficiently ambitious but also realistic approach.

The path ahead, to incorporate environmental risk into internal control and management, is a considerable one and we, as supervisors, also have much work before us. Yet we set out on this path only very recently and I must say that the progress made has been surprisingly fast.

For all our sakes, we trust that we will be up to the challenge.

Thank you.