BANCO DE ESPAÑA
Eurosistema

Strategic Plan 2024

Analysis and research priorities
for the Banco de España: 2020-2024

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1 Central bank policies and their interactions

Analysis of the impact and design of policies under the Banco de España's remit: 1) ECB monetary policy design and implementation, 2) supervision of the Spanish banking system along with the ECB, and 3) establishing and setting in place macroprudential measures for Spanish credit institutions.

Analysis of the implications of the ECB's monetary policy measures for the banking sector's intermediation capacity, for prudential supervision and for financial stability, against a background of low inflation and very low interest rates.

Analysis of the interactions between monetary policy and the new macroprudential tools.

2 Long-term trends in the Spanish economy

Analysis of the implications and consequences for the Spanish economy and the effectiveness of possible public policies resulting from the far-reaching processes of transformation worldwide:

1. The digitalisation of the economy.
2. Climate change and energy transformation.
3. Demographic changes: ageing and concentration of the population.
4. Economic and gender-based inequality.
5. Low trend inflation.

3 Risks and opportunities arising from the international environment

Closer focus on identifying, monitoring and assessing international economic developments with the most potential to impact, in terms of risks and opportunities, the Spanish economy.

Analysis of changes in economic structure, geopolitics and international relations, and their impact on the Spanish economy.

4 The aggregate consequences of the heterogeneity of households and firms

Development of tools enabling enhanced analysis of the aggregate implications of the heterogeneity of households and firms, and of their effects on public policy design and transmission.

5 New technologies and information sources: challenges for a central bank

Analysis of the digital transformation of the financial system and its effects on monetary policy, financial stability and the monitoring of bank risks.

Design and implications of introducing a central bank digital currency.

Launch of new avenues of research stemming from ongoing statistical innovation, including most notably:

– Analysis of the economy in real time for decision-making at times of stress.
– Early identification of investor and bank customer concerns, and analysis of the Banco de España's communication policies.

Foreword

The Banco de España enjoys long-standing status as a point of reference for quality economic analysis and research, with these functions helping underpin the pursuit of its remit[1]. One of the priorities of the Banco de España under its Strategic Plan 2020-2024 is to strengthen its analytical work. The aim is to prepare it for the challenges that the various changes in the economic and social environment pose for the functions entrusted to it in its capacity as the National Central Bank and as a member of the European System of Central Banks. To this end, the main subjects of analysis and research on which a particular focus is to be placed in the coming years have been identified. On disclosing them in this document, the Banco de España takes a further step in its policy of research activity transparency, seeking in turn to promote collaboration in these areas with academia and the community of economic analysts.

The COVID-19 crisis has abruptly disrupted the global economic and financial situation. The unprecedented national, European and global economic policy response will continue to require ongoing analysis over the coming years. A notable example of the consequences of the crisis meriting a particular analytical focus is the necessary transformation of the Spanish economy towards a more robust and sustainable growth model, based on the development of human capital, innovation and environmental sustainability. This transformation will call for an ambitious structural reform agenda and efficient R+D+i expenditure policies, which will in turn provide for the reduction of the imbalances built up during the crisis. Such imbalances include most notably increased unemployment, the deterioration of significant segments of the productive system and the shortfall in public finances.

The current crisis broke at a time of far-reaching global changes, with most significant economic and financial implications that require ongoing study, namely: the digitalisation of economies, climate change and the energy transition, population ageing, inequality and regional differences in population, among others.

In connection with the Banco de España's monetary policy competencies as a member of the Eurosystem, it has to contribute to the review in 2020 and 2021 of the monetary policy strategy of the European Central Bank (ECB), following several years marked by inflation rates systematically below their medium-term objective, i.e. below but close to 2%, and by very low or negative interest rates. This environment of low inflation and low interest rates likewise poses significant challenges for the banking industry and for prudential supervision and the oversight of financial stability, requiring in-depth study. Also, as the Banco de España has assumed new powers in the macroprudential

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1   See https://www.bde.es/bde/en/secciones/sobreelbanco/funcion/Funciones.html

area, it will be necessary to develop an advanced analytical framework enabling the early identification of risks and vulnerabilities, and a better understanding of monetary policy and micro- and macroprudential policy interdependencies. Ongoing digitalisation in the financial sector and the emergence of new competitors pose substantial challenges for prudential supervision, necessitating a significant analytical effort. Lastly, the efficiency of payment systems and the possible scenarios arising from the use of new technologies in this area raise important issues, such as the implications of digital currencies.

Against this background, a series of analysis and research priorities have been identified for the 2020-2024 horizon. These are described below. Prioritising matters for analysis and research should enable us to improve the Banco España's decision-making and its ability to have a bearing on the main national and international economic debates.

The five subjects deemed to be priorities for the coming years are:

— Central bank policies and their interactions.

— Long-term trends in the Spanish economy.

— Risks and opportunities arising from the international environment.

— The aggregate consequences of the heterogeneity of households and firms.

— New technologies and information sources: challenges for a central bank.

1. Central bank policies and their interactions

As a member of the Eurosystem, the Banco de España participates in ECB monetary policy decisions and implementation. Also, within the Single Supervisory Mechanism (SSM), it is the supervisor of the Spanish banking system along with the ECB. Further, the Banco de España is the designated national authority for preparing, deciding on and implementing macroprudential measures for Spanish credit institutions. The impact and design of all these policies comprise one of the Bank's fundamental research agenda areas.

In the past decade, the ECB has significantly extended the tools available to it to fulfil its price stability objective. In this respect, the analysis of the implications of the new measures adopted in the recent period is a priority, in respect both of their impact on financial markets and on their final transmission to the economy as a whole. What will require particular attention is the study of the challenges posed by the current environment of negative interest rates and low profitability for the banking sector's intermediation capacity, for prudential supervision and for financial stability.

Another priority will be to further knowledge of the interactions between monetary policy and the new macroprudential tools, designed to preserve financial stability. In this respect, significant avenues of research must encompass improvements to macroeconomic models, so that the importance of the financial sector and monetary policy transmission for general economic developments is duly acknowledged, and improvements to capital markets analytical tools to identify the risks to financial stability. The exceptional nature of the measures adopted in response to the current crisis by the ECB Governing Council and by the SSM contribute to making the reinforcement of these analytical tools an even greater priority.

In 2020 and 2021, the priority avenues of research on this matter are the following:

— There will be a study, first, of the challenges posed by the current negative interest rate environment for the profitability of the banking industry, for prudential supervision and for financial stability. True, these challenges were already present before the COVID-19 outbreak. But they are now even more significant as the crisis has reinforced expectations of lower rates over a longer period. It is most worth analysing here the channels through which monetary policy can stimulate bank lending once interest rates fall below certain levels.

— Likewise, in relation to monetary policy, there will be a study of its impact on the allocation of resources among companies, and on the Spanish economy's productivity and long-term growth, in the current setting of low interest rates. There will also be theoretical and empirical studies on monetary policy transmission and optimal policy design in an analytical framework that considers heterogeneity across households and firms.

— There will be research into the impact of the ECB's latest monetary policy measures to mitigate the effects of COVID-19 on financial markets relevant for policy transmission; in particular, the unconventional measures relating to liquidity injection on money markets, the expansion of purchase programmes on capital markets and currency liquidity injection operations on money and foreign exchange markets. In parallel, tools will be developed enabling market expectations based on financial asset prices to be identified (e.g. inflation expectations drawing on inflation swaps and monetary policy interest rate expectations drawing on yield curves).

— Another priority area will be the interconnections between financial intermediaries, both in the interbank market and between banks and other types of intermediaries (insurance companies, investment funds, etc.). The aim is to achieve better knowledge of the transmission channels of financial risks, and of the extent to which the networks created by these interconnections help mitigate or heighten such risks. Further, models will be developed to understand the capacity of certain financial institutions to create risks to the stability of the overall system, and be able to analyse the effectiveness of macroprudential tools in mitigating these systemic risks.

— A priority as regards macroprudential tools will be the development of models that help understand the costs and benefits of their application to the banking sector, such as the requirements to hold certain capital buffers or to tighten lending standards for households and firms. The differing behaviour of credit risk by economic sector and region will also be modelled. The pandemic and the technological transition process in response to climate change are examples of disruptions to the economic system that have an asymmetric impact on sectoral and regional facets, representing a substantial motivation for this analysis. These developments will be incorporated into the Bank's stress tests, which evaluate banks' solvency and liquidity in the face of adverse economic scenarios.

2. Long-term trends in the Spanish economy

Economies worldwide, along with our European neighbours, are immersed in far-reaching transformation processes. And the Spanish economy is no exception. These processes include most notably digitalisation, climate change and the energy transition, population ageing, the geographical concentration of population and the growth of inequality.

The digitalisation of the economy is a difficult process to quantify given that it affects the various phases of production in different ways. The initial aim, therefore, is to attempt to make progress in measuring this phenomenon so it is comparable over time and across regional locations. Economic models will then be used to understand the macroeconomic consequences of this trend, e.g. in terms of employability, and of firms' productivity and market structure, which bear on inflation.

To check climate change, a wide-ranging international policy agenda is taking shape, which will affect the typology of financial and non-financial corporations' risks and investments. It will be a priority here to develop economic models for the analysis of these risks and to enhance the attendant data collection at the sectoral, firm and household levels, for the appropriate estimation of the physical and transition risks of climate change.

Another trend change is population ageing. Research on this subject should focus on models that analyse its macroeconomic consequences, and – inter alia – its fiscal, financial and healthcare implications.

Finally, many countries, Spain among them, have in recent decades witnessed notable growth in inequality in terms of wealth and income. In this area, it is of vital importance to come up with an appropriate diagnosis of the reasons for this increase in inequality so as to be able to assess potential alternative measures that can reverse this trend. This is in light of the adverse impact socially and on economic growth that high inequality can cause.

Generally, the current, health-related crisis has not altered several previous medium and long-term phenomena. But it may have exacerbated others, such as inequality and low inflation. All these trends have deep-seated implications for Spain's economic and financial situation, and for the effectiveness and suitability of possible public policies.

In 2020 and 2021, the priority avenues of research related to this area are the following:

— Regarding climate change, there will firstly be analysis of the consequences for economic growth and for the effectiveness of the main macroeconomic policy levers, namely fiscal policy (the capacity of different taxes and subsidies to promote the development of cleaner alternative

technologies, and their impact on public finances) and monetary policy (e.g. obstacles to central banks' assessment of the medium-term inflation outlook). Secondly, the measures launched by the European Union in this area will be analysed, focusing on ongoing improvements in energy efficiency in Spain across sectors, regions and individual firms. Thirdly, a multi-regional and multi-sectoral model will be developed to evaluate the effects of climate change on our economy's long-term growth.

— Turning to sustainable finances, research priorities will focus, first, on analysing the information content on sustainability being published in corporate annual reports (using text and content recognition techniques). Second, knowledge of the "green" financial products market will be enhanced. Third, there will be an assessment of the extent to which sustainability factors are being acknowledged on government debt markets

— Concerning population ageing, priority will be given to developing models enabling analysis of the consequences of this phenomenon on economic activity and employment. Further, there will be analysis of different aspects of the latest pension system reforms, the effectiveness of public policies aimed at smoothing work-life balance and the economic impact of an increase in public spending on health and social care as a result of demographic developments.

— In the field of automation and digitalisation, theoretical and empirical models will be developed to analyse their consequences for employment, productivity and prices.

— As to inequality, the COVID-19 crisis has affected the Spanish population very differently; its effects are particularly acute in the case of workers in the so-called "social industries", where there is a marked presence of youths and women. The priority, therefore, is to analyse the factors behind the increase in different forms of inequality (income, wealth, health) in different groups (age, gender, educational level) and the policies associated with this challenge. Among other projects, a distributional model will be estimated for the income process, incorporating specific aspects of the Spanish economy such as the high average level of the unemployment rate and its high cyclical fluctuations, and administrative data will be used to improve the measurement of the inequality of working opportunities comparing men with women.

— Regarding the geographical concentration of the population in Spain, a detailed description will be given of the breakdown of households and firms in Spanish territory and its effects on economic structure, inequality and the long-term growth of the Spanish economy.

— Finally, as regards the low trend inflation in Spain and the euro area, and its persistence, particular attention will be paid to several factors such as wage bargaining, digitalisation, globalisation, population ageing, the dynamics of the degree of concentration in each productive sector, labour and product market slack, etc.

3. Risks and opportunities arising from the international environment

As earlier stated, the Spanish economy is not a case apart regarding the global economic trends affecting most of our EU peers. Global economic and social changes transcend national borders, as do economic policy responses, which frequently incorporate a supranational component. In the specific case of the Spanish economy, one initial relevant facet concerns its degree of integration into Europe, as a euro area and EU member, especially in the monetary, financial and trade areas and in respect of the movement of persons and the framing of common policies. Spain's participation in the EU, along with the economic weight of many of its corporations, means it has very close links with the rest of the global economy, notably – but not exclusively – with regions and countries such as Latin America, the United States and the United Kingdom.

This international interconnectedness means our economy is affected by developments in the rest of the world and, in turn, this affords Spain opportunities to expand and diversify its markets. This situation has become more complex, given the global dimension of the COVID-19 crisis. It may prompt changes worldwide in economic structure, geopolitics and international relations that will mark the coming decades. Against this background, the Banco de España's analysis and research priorities are to delve into identifying, monitoring and assessing international economic developments that have a greater potential impact, in terms of risks and opportunities, for the Spanish economy.

In 2020 and 2021, the priority research avenues related to this area are as follows:

— There will firstly be a particular focus on the European Union. This will bear especially on the measures and institutional changes rolled out in response to the current crisis, including most notably the NGEU recovery plan, and on the need to complete Economic and Monetary Union. Other priority areas for study will include, inter alia: the analysis of risk-sharing instruments (common unemployment insurance, loans as opposed to transfers in the EU's recovery plans); interaction between fiscal and monetary policy; the Banking Union and the Capital Markets Union; the role of euro-denominated supranational safe assets; the role of a common fiscal capacity for absorbing and mitigating macroeconomic risks; and the lessening of the EU's external vulnerability within the framework of globalisation, etc.

— Secondly, the potential changes in globalisation and multilateralism will be analysed, in the context of the dynamics accentuated by the COVID-19 health crisis.

— There will be a review in this area of the following: the consequences for the Spanish economy of potential "de-globalisation" phenomena, including the possible relocation to the EU of the production of certain goods, or restrictions on the free movement of productive factors; changes in trade

flows and tourism in the wake of the pandemic shock; the dynamics of the redressing of global, financial and real imbalances; the role of multilateral institutions in this context; and the global coordination of economic policies.

— Thirdly, there will be closely focused research on the interactions between the Latin American and Spanish economies, given their close economic and social links. Other priority areas include analysis of the current exposure and potential for development of economic and financial interactions; the role of Spain as a bridge between the EU and Latin America; and the relationship between public investment and potential growth in Latin America.

— Finally, priority will be given to identifying and characterising global risks and their impact on the Spanish economy. There will be an analysis of aspects such as: the design and review of the international experience with prevention and insurance mechanisms in the face of extreme events, including most notably health crises; geopolitical tensions, disruption to the global framework of trade and financial relations, and the spillover effects for the Spanish economy; the macrofinancial impact of global trade and economic uncertainty; and the measurement of political uncertainty and its economic effects using Big Data techniques.

4. The aggregate consequences of the heterogeneity of households and firms

The heterogeneity within groups of households and firms influences the course of the main macroeconomic variables and the impact of public policies. Conversely, such policies and macroeconomic developments can prompt changes in such heterogeneity. The differing economic impact of the current crisis according to the type of household and firm, and in terms of the crisis-mitigation measures adopted, testifies to this. It is thus a priority to develop tools providing for a better understanding of these interactions. To this end, deeper research is needed in two areas: the analysis of micro data in connection with macro issues, and macro modelling with regard to distributions of micro variables.

The growing availability of microeconomic data on firms, and on their employees, will help push an ambitious research agenda to analyse: the influence of business structure on the Spanish economy's resilience in the face of macroeconomic shocks; firms' market power in different sectors; and productivity differences across firms with a different staff make-up. Further, by exploiting different size, regional and sectoral constraints, the effectiveness of different recent policies on business results may be evaluated.

In the case of Spanish households, there will be a focus on the deep-seated changes in their fundamentals (increased longevity, the decline in the birth rate, the persistence of unskilled population segments, the training needs demanded by the labour market, and income, wealth and gender inequality, among others), which impact the effectiveness of economic policies (monetary, fiscal, health, education, social, labour market, environment, etc.) and are in turn affected by these policies in greatly differing ways.

In 2020 and 2021, the priority avenues of research related to this area are as follows:

— First, methods will be developed to identify the most vulnerable groups in a crisis situation. In particular, there will be analysis of the best means of measuring households' financial position and the role of financial competencies in a situation like the present.

— Second, households' economic decision-making will be analysed, including most notably consumption, saving and investment decisions, and whether housing is rented or owned. The analysis will be by means of the development of models that take into account the differences inherent to each juncture in individuals' life cycles and to how individual expectations are formed about what the future holds.

— Third, the spread of negative supply- and demand-side shocks between firms and sectors will be studied.

— Fourth, the effect of fiscal policy on productivity and long-term growth will be analysed, also through public-private interactions.

— Finally, the impact of the present crisis on employment means it is a priority to document the current situation in Spain, along with best international practices, in terms of collective bargaining, instruments for the temporary adjustment of employment, types of contract, and active and passive policies.

5. New technologies and information sources: challenges for a central bank

The digital transformation of the economy and society, and the new possibilities afforded by technological progress, pose significant challenges both for the financial sector and for the functions entrusted to the Banco de España. In this respect, it is not only important to analyse and understand the changes taking place in the financial system; it is also imperative to make headway in including such changes in the analyses and research undertaken in areas such as monetary policy, financial stability, and the identification and monitoring of bank risks. In addition, the use of these technologies can improve services the central bank provides such as those relating to means of payment, allowing for possibilities such as the introduction of a digital currency, whose implications and design should be analysed in depth.

The new technologies have also led to a spurt in mechanisms that allow information to be extracted from various and mass granular data sources, which converts statistical innovation, in itself, into a priority research area. The development of capabilities in this area will enable current statistical sources to be expanded, drawing together data over time and sharing them with third parties, thereby boosting general economic knowledge.

In turn, these capabilities will pave the way for new avenues of research. Here, consideration may be given to analysing and monitoring the situation of the economy in real time for decision-taking at times of stress (a need highlighted once again in the context of the health crisis). Further analysis might address the effects of the Banco de España's communication policies on financial markets and economic agents, e.g. using techniques such as natural language processing, which provides for early identification of concerns among investors and bank customers.

In 2020 and 2021, the priority avenues of research related to this area are as follows:

— The implications for the financial system and the economy as a whole of the introduction of a central bank digital currency will be analysed, considering various design proposals and including aspects relating to digital identification.

— An analytical framework will be developed to provide for assessment of the use of machine learning and Artificial Intelligence models in financial services, particularly in the case of extending credit. Risks and best practices in banks' use of new technologies will likewise be identified. The fresh possibilities provided by technological progress entail major opportunities and significant challenges for the sector. Digital transformation is among banks' priority strategic objectives, as is so with the other economic sectors. The implications, benefits and risks of the financial sector using the most widespread advanced technologies will be analysed.

— Study will be made of the relationship between developments in the financial instruments issued by banks and monetary policy decisions or the publication of news such as that linked to banks' results.

— Another priority avenue of research will focus on the possibilities that new technologies offer for wholesale and retail payment settlement systems, both from the standpoint of the central bank as a Treasury services provider and in terms of its surveillance and supervisory function.

— The implications of the activity of new agents such as FinTech and the financial activity of BigTech will also be analysed.

— Finally, there will be a deeper study of the use of advanced data analysis techniques in different areas including, for example: improvements to short-term forecasting and analysis capacity in respect of the Spanish economy; the analysis of balance sheets and corporate annual reports; the measurement of economic uncertainty in Latin America and how it is reflected in the Spanish economy's exposure to the region; the development of economic and political risk indicators for a broad set of emerging countries; and the development of indices supporting ongoing euro area and EU integration, through the study of legislative texts and speeches by institutions and public representatives.