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The Spanish economy: outlook and challenges

Third Economic-Insurance Meeting: “Economic future and insurance industry trends”

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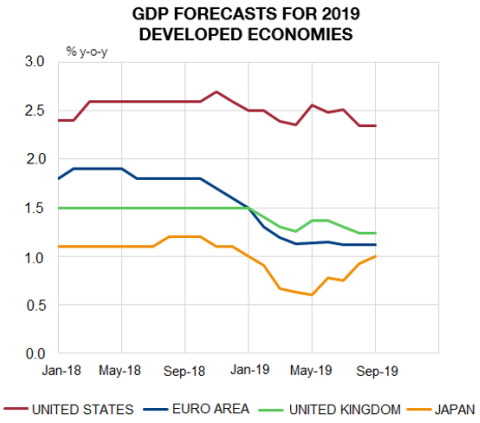
Governor

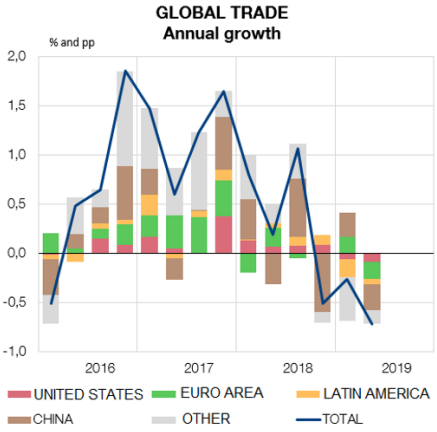
Ladies and gentlemen, good morning.

I should like to start by thanking the president of the Lawyers' Mutual Society, Enrique Sanz, for his kind invitation to deliver the closing address to this third economic-insurance meeting. It is an honour and a pleasure to participate in this event and to share with you some reflections on the economic outlook for the immediate future and, especially, on the main medium and long-term challenges facing the Spanish economy. The degree of vulnerability of the Spanish economy to possible shocks and, ultimately, the well-being of the Spanish people will largely depend on how the economy's main structural problems are addressed.

The economic situation

The global economic expansion in weakening against the background of the downturn in international trade…



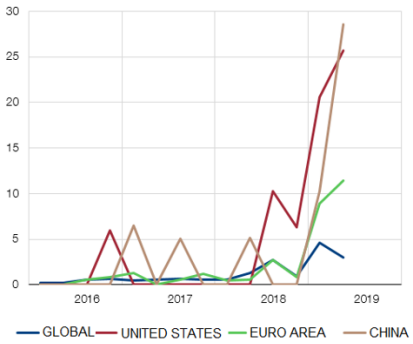


Source: Consensus and CPB.

The international economic environment in which the Spanish economy operates has become more unfavourable over the past year, with a slowdown in growth and, in particular, in international trade. Global GDP growth continued to moderate, to a rate of 2.8% year-on-year in the second quarter of 2018, down more than one percentage point (pp) from a year earlier. In addition, growth projections have been revised downwards in most economies in recent quarters. Indeed, global GDP growth is projected this year to be at its lowest level since the international financial crisis.

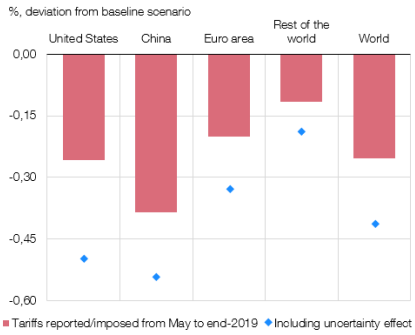
… and high geopolitical uncertainty

TRADE UNCERTAINTY INDEX



Source: Ahir H., N. Bloom and D. Furceri (2018). Latest observation: June 2019. Frequency with which concepts linked to uncertainty and trade feature in analysts' reports.

TRADE WAR ESCALATION: IMPACT ON 2021 Q4 GDP



Source: Own data, Banco de España.

The contraction in world trade, meanwhile, appears to have intensified, against a background of persistent uncertainty surrounding US and Chinese trade policy and intensifying geopolitical risks. Although the deterioration in activity has been particularly intense in manufacturing, the slowdown in recent months in the global services output PMI, which remains in expansionary territory, is indicative of an increased risk of a steeper slowdown in global activity.

Given its degree of openness, and the confluence of certain idiosyncratic elements, the euro area economy has been affected more than most by these international trade developments. Specifically, the euro area slowed significantly from the beginning of 2018, mainly due to the sharp moderation in exports. As a result, GDP grew at an average rate of 1.9% last year, down 0.7 pp from 2017, and year-on-year growth since end-2018 has fallen to around 1%.

On the latest information available, euro area GDP growth was only 0.2% quarter-on-quarter in Q2, down from 0.4% in Q1, weighed down by weak exports and slack investment. By contrast, private consumption continued to grow, driven by the relative relatively robust labour market. On the supply side, industrial activity contracted in this period, while services behaved more positively. By country, the decline in activity in the German economy and the stagnation in Italy were notable.

Moreover, the indicators available suggest that euro area economic activity remained weak in Q3. Thus, the trade and industrial activity indicators signalled continuation of the deterioration. Also, some qualitative indicators of services activity and employment showed a decrease, which may indicate that the weakness is beginning to spread to these activities. The slowdown in employment, along with the gradual decline in consumer confidence in Q3, points to more modest growth of private consumption, until now the main driver of growth.

Against this background, in September, the European Central Bank (ECB) revised its macroeconomic forecasts for the euro area as a whole. Expected GDP growth was revised downwards, especially for 2020. Specifically, growth of rates of 1.1% and 1.2% are now projected for 2019 and 2020, respectively, in both cases below the rates projected In June.

In the medium term, activity is expected to recover, underpinned by favourable financial conditions and a slightly expansionary fiscal policy, in the event of a gradual disappearance of political and trade uncertainty.

Despite this downward revision to macroeconomic forecasts, the ECB's Governing Council emphasised the existence of significant downside risks to the baseline scenario, arising mainly from a possible escalation of trade tensions. It should be taken into account, as I have just stressed, that the baseline scenario of the ECB's macroeconomic projections, like those of the Banco de España, which I will refer to below, are based on the assumption that there will be a Brexit agreement and trade tensions will dissipate.

Inflation in the euro area, meanwhile, remains low. In Q3, inflation developments were marked by the downward dynamic of energy prices and the persistence of moderate rates for services. The 12-month rate of change of the harmonised index of consumer prices (HICP) fell by 0.8% in September, and underlying inflation, which excludes energy and food prices, stood at 1%. In fact, since 2013, average euro area inflation has also been 1%, less than half the rate observed during the first 10 years of EMU (2.1%).

This absence of inflationary pressures and the weakness of demand, along with the deteriorating global environment, led to a further downward revision to the Eurosystem inflation projections, to 1.2% in 2019 and 1% in 2020. In 2021, inflation is forecast to stand at 1.5%, clearly below the monetary policy objective. In turn, the long-term inflation expectations derived from financial markets are at historic lows.

In short, the euro area macroeconomic setting is characterised, first, by a downward revision to growth forecasts that were already relatively weak and remain subject to downside risks, owing to the persistence of trade tensions and other geopolitical uncertainties, such as those relating to the final Brexit outcome, and which in some countries of the area, such as Germany, even point to a risk of imminent recession; and, second, by medium-term inflation projections that have also been revised downwards and are well below levels that could be considered compatible with the ECB's price stability mandate.

This is the background to the measures adopted by the Governing Council of the ECB at its September meeting. In particular, and in accordance with previous communications, the Governing Council acted – with a package of expansionary measures – in response to inflation rates, both observed and projected for the next few years, that have remained persistently below the ECB's objective, in line with its commitment to symmetry in relation to this aim. In this context, symmetry means that the ECB undertakes to act with the same determination whether inflation is persistently above or below 2%.[1]

In particular, the Governing Council of the ECB took the decision to decrease the interest rate on the deposit facility by 10 basis points (bp) to -0.50% and reinforced its forward guidance on interest rates by indicating that they will remain at their present or lower levels until the inflation outlook is seen to be robustly converging on a level sufficiently close to, but below, 2%. Such convergence should also be consistently reflected in the observed behaviour of inflation.

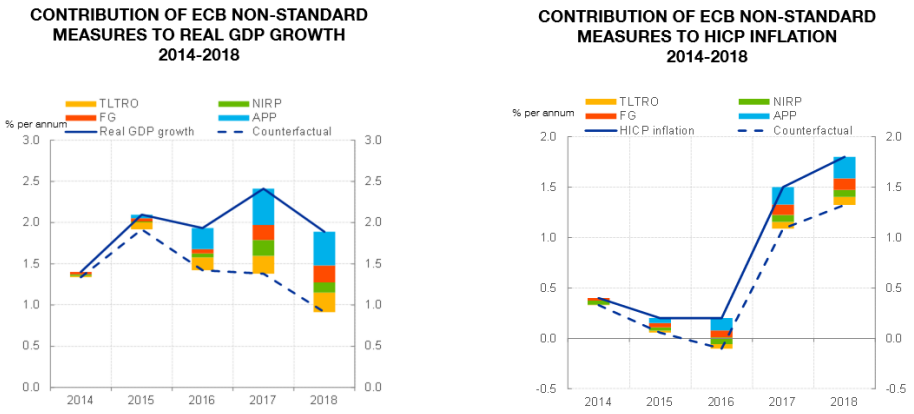
[1] See the Governor of the Banco de España's closing address of the La Granda Courses on 31 August 2019, "The European economic policy response to a scenario of lower growth and inflation".

The ECB also agreed to restart net purchases under its asset purchase programme (APP) at a monthly pace of €20 billion as from 1 November and without a defined time limit. In order to preserve favourable bank lending conditions, the modalities of the new series of quarterly targeted longer-term refinancing operations (TLTRO III) were also changed, eliminating the 10 bp spread established on the interest rates applied to them and extending their maturity from two to three years. Finally, in order to support the bank-based transmission of monetary policy, a two-tier system for reserve remuneration was announced, such that part of banks' holdings of excess liquidity will be exempt from the negative deposit facility rate.

These decisions aim to counter the worsening growth and inflation outlook by means of a package of measures that complement one another, easing financial conditions by a different route. The resumption of net purchases, without a defined time limit, also has an important signalling effect with respect to the Governing Council's commitment to meet its inflation aim, which is particularly relevant in the current context of inflation expectations at risk of becoming de-anchored.

In addition, the period of time over which the net asset purchases and the reinvestment of existing assets will continue is anchored to the normalisation of interest rates, thus enhancing the consistency and complementarity of the different measures and their dynamic adjustment to inflation. In a setting of heightened uncertainty, this automatic adjustment of the expectations about the future path of monetary policy in the face of potential changes in the macroeconomic environment is particularly desirable.

Monetary policy measures have contributed to the increase in activity and in inflation



Source: Rostagno, Altavilla, Carboni, Lemke, Motto, Saint-Guilhem, Yiangou (2019), forthcoming.

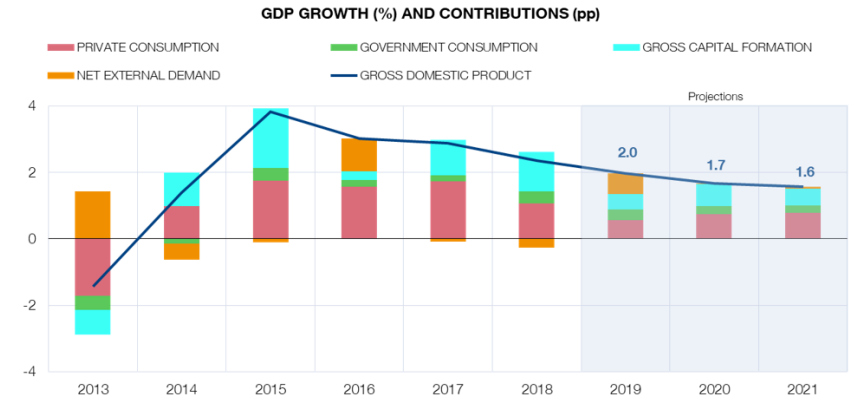
Note: The chart shows the impact of ECB non-standard measures on GDP and inflation based on a macroeconomic model with financial variables where the estimated impact of the monetary policy measures is conditional upon the yield curve.

Economic research shows that these measures have been effective in the recent past, in terms of easing financial conditions and encouraging lending. Bearing this in mind, the new package of measures will boost economic activity in the euro area against a background of high uncertainty and will help to bring about the convergence of inflation to levels in line with the ECB's mandate.

As regards negative interest rates, although there is no conclusive evidence to date that they have adversely affected the supply of bank credit, we cannot rule out that maintaining

rates at very low levels for an additional, potentially extended, period of time, could ultimately have some negative consequences for the bank-based transmission of monetary policy. In this regard, the mitigating measures adopted by the ECB, consisting of a tiered system for remunerating excess liquidity holdings, are intended to soften the negative impact on bank profitability of the new reduction in reserve remuneration, and thus ensure the expansionary effect on activity and inflation of the interest rate cuts in the current setting.

Prolongation of the current expansionary cycle, albeit at a more moderate rate than in previous years



Source: Banco de España.

In relation to the Spanish economy, the latest economic data point to a gradual weakening of activity. First, the indicators that measure agents' confidence have tended to gradually deteriorate since the beginning of 2018, albeit less so than in the euro area as a whole.

In Spain, as in the euro area, the deterioration in these qualitative indicators has been comparatively more pronounced in the case of manufacturing than in that of services. The quantitative indicators, which in principle tend to be more closely related to activity, have also tended to show less favourable behaviour in manufacturing than in services.

This mixed behaviour across sectors, and developments coinciding with the timing of the global trade tensions between the United States and China are consistent with the shocks observed since the beginning of 2018, which appear to have had a more pronounced impact on manufacturing, being external in origin; from the viewpoint of demand, manufactures are typically more closely linked to exports than are services.

In addition, the regulatory changes in the car industry sector, which came into force after the summer of 2018, have also contributed to explaining the weakness of exports and of manufacturing as a whole, while services, a much smaller proportion of whose value-added is exported, have shown greater resilience.

One area in which the slowdown in activity has made itself plain is the labour market. This is a reason for concern, given that the rate of unemployment in the Spanish economy is still high, something that I shall refer to later in greater detail. In particular, Social Security registrations have lost significant momentum since the beginning of the year, growing in September at a year-on-year rate of 2.4%, as against 3.1% at the end of 2018. A similar

conclusion is drawn from the Labour Force Survey data for 2019 Q3 published last week, which also imply a moderation in the rate of generation of employment, to 1.8% year-on-year, down 0.6 pp from Q2 and 1.4 pp lower than at the end of 2018. Moreover, the magnitude of the fall in the rate of unemployment in Q3 – to 13.9% of the labour force – was more modest than has been typical since the start of the recovery.

Against this background, the latest macroeconomic projections of the Banco de España, published on 24 September, foresee a moderation in the Spanish economy's growth rate over the next two years, in response to the loss of momentum of domestic demand, which has already begun to be observed, in the latest period, and which has affected both private consumption and private investment. As I have mentioned already, this behaviour appears to have been fundamentally influenced by the deterioration in the external environment, as well as by the uncertainty regarding the future outlook.

In any event, under the baseline scenario, which assumes that export markets will gradually recover (following their recent weakness) and that budgetary policy will acquire a neutral stance over the projection horizon, the accommodative stance of monetary policy and the improvement in the financial position of firms and households over the last few years, should allow the economy to continue to grow at slightly above its potential rate (which according to our estimates is somewhat less than 1.5%).

However, as in the euro area, this baseline scenario for economic activity is subject to significant downside risks. In fact, the projected recovery in world trade and activity could be hampered by factors such as the possible adoption of further protectionist measures, the worsening of geopolitical tensions and the high level of indebtedness of certain agents in particular regions of the world. A source of further uncertainty, which has still to be clarified and has been highly unpredictable, is the process of the United Kingdom's departure from the European Union and the subsequent negotiation of the future UK/EU trading relationship.

Lastly, we cannot rule out that the uncertainty surrounding the future course of some domestic economic policies (such as budgetary policy and the structural reform agenda), arising from the difficulty in recent years of forming solid parliamentary majorities, or the recent events in Catalonia, may also, if they persist, have an adverse effect on the spending decisions of private agents.

Transformations and vulnerabilities of the Spanish economy

In this context, the Spanish economy, despite the improvements made during the recovery, continues to suffer from significant vulnerabilities. Progress in correcting these is urgently required, in order to enhance the economy's resilience to possible adverse shocks.

In fact, some positive elements stand out from the evolution of the Spanish economy in recent years, such as, for example, the ability to continue to run external surpluses during the upswing, something that was not normal in previous recoveries, and which would indicate that at least part of the correction of the external imbalance is structural in nature, and is associated with cumulative improvements in competitiveness and the increase in the geographical diversification of exports and in the number of firms that regularly export to the rest of the world. This growing internationalisation of Spanish companies has served, in

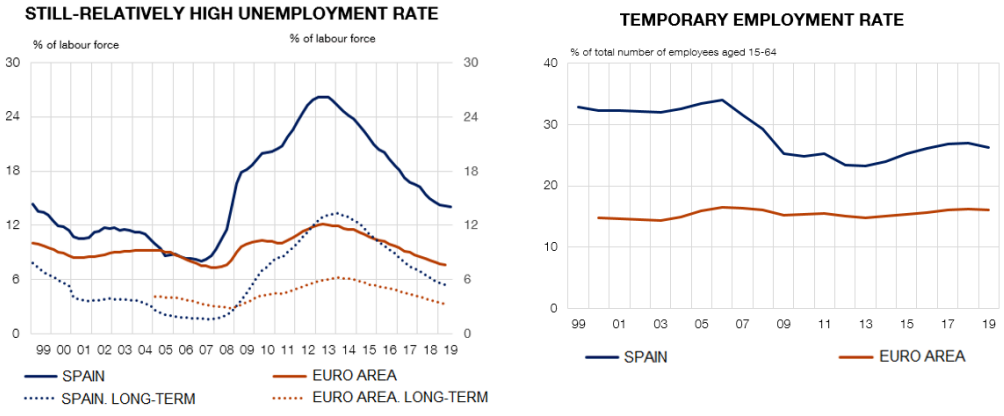
turn, to stimulate business investment and employment. Indeed, more than 2.5 million jobs have been created since the beginning of the recovery.

Also notable in recent years has been the deleveraging carried out by the non-financial private sector. This has reached a very advanced stage, both in the case of non-financial firms and households. For example, the debt to GDP ratio of Spanish companies has been reduced by more than 40 pp from its peak and it is now below the average level in the euro area.

In the same vein, I would like to highlight the intense process of banking industry rationalisation, recapitalisation and restructuring. This has led to a more efficient allocation of capital across firms and sectors, which, as we will see later, has contributed to productivity growth. In particular, the non-performing loan ratio for lending to the resident private sector, in business in Spain, stood at 5.3% in June 2019, down 8.7 pp from the high levels recorded in December 2013. Foreclosed assets, meanwhile, have fallen continuously during the years of recovery; a total cumulative reduction of 50% from the peak levels recorded in 2011 had brought them down to below €40 billion by June 2019.

As I was saying, this progress should not cause us to forget that the Spanish economy has significant imbalances, among which the still high levels of unemployment, government debt and external debt stand out. Since the start of the recovery progress (of varying intensity) has been seen on these fronts, but the magnitude of the imbalances built up in terms of the stocks of these variables means that they still amount to vulnerabilities (to turbulence in international markets, for example). At the same time, the Spanish economy's growth capacity continues to be constrained by its very poor productivity dynamics, which is particularly worrying insofar as it will also be adversely affected by the impact of population ageing.

Main challenges facing the Spanish economy



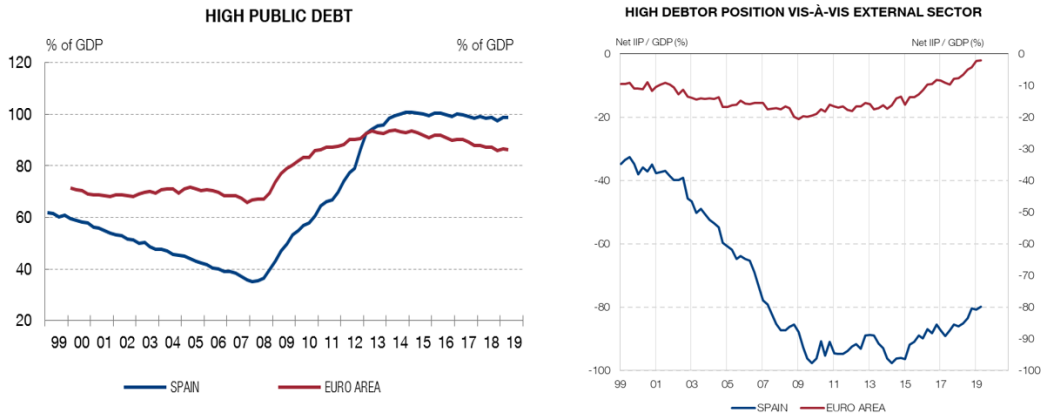
Sources: INE and Eurostat. Latest observation: 2019 Q3 (unemployment rate Spain), 2019 Q2 for the other variables.

Turning to focus on the labour market, as you all know, the Spanish economy's rate of unemployment remains very high, at around 14%. Also, around 45% of the unemployed have been seeking work for a year or more, a factor that reduces their likelihood of success.

There thus seems to be a need to improve the employability of this more vulnerable group notable for the presence of very young and very old workers, as well as individuals with fewer skills. To do this, it would be desirable to increase the human capital of these workers, a task which, in particular, would need training tailored to employers' requirements. Furthermore, it should not be overlooked that the higher inequality in household income emerging in the crisis was, above all, a consequence of job destruction, which underscores the need to ensure that these people can get a job as soon as possible.

In addition, the incidence of temporary employment remains very high (nearly 27% in the third quarter of 2019), which, among other things, makes for high employment volatility and reduces worker productivity.

Main vulnerabilities of the Spanish economy



Sources: Banco de España, ECB, European Commission and INE. Latest observation: 2019 Q2.

A second source of vulnerability originating as a legacy of the crisis is the high government debt, which in the second quarter of 2019 stood at around 99% of GDP, more than 60 pp above that in 2007. It is in this terrain where headway has been less satisfactory in the last few years, as evidenced by the fact that the budget deficit continues to have a high structural component, estimated by the European Commission at above 2.5 pp of GDP. This figure is still far from the medium-term structural budgetary balance, convergence to which is required by the so-called "preventive arm" of the Stability and Growth Pact (SGP) applicable in Spain since July.

It is therefore a priority to make headway in cleaning up the public finances so as to reduce this source of vulnerability of the economy and to be able to make full use of national fiscal policy as an effective macroeconomic stabilisation instrument in the event of a sharper economic slowdown in the future. In addition, this improvement in the budgetary situation must be compatible with other challenges which the public finances will have to face in coming years, including most notably the consequences of population ageing, which I will discuss later.

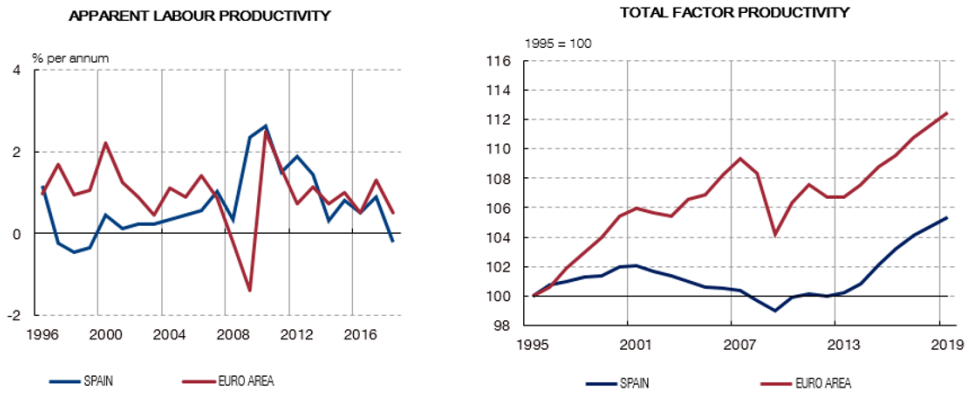
A third and final area of vulnerability of the economy to which I would like to refer is the external debt. Despite the correction achieved to date in the form of current-account surpluses, much work still remains to be done, as shown by the negative net international

investment position and the gross debt, which stood, respectively, at around 80% and 170% of GDP in the second quarter of 2019.

To continue correcting these two magnitudes, the external surpluses will have to be sustained over time, which in turn will require further headway in the gains in competitiveness achieved in the last few years. Having said that, while these gains have so far been based mainly on the moderation of labour and financial costs, in the future they will have to come increasingly from genuine increases in productivity.

Long-term growth of the Spanish economy: the challenge of productivity

The productivity challenge



Sources: Banco de España, European Commission and Eurostat.

The timid gains in productivity seen in the past recession and subsequent recovery proved to be insufficient to close the gap separating us from the core European countries. The limited headway in productivity by the Spanish economy should be a cause for great concern, since productivity gains are the only mechanism which can generate sustained, stable growth of per capita income in the long term. The consensus in this respect in economic circles is practically unanimous, and the repute of the studies in this area is attested to by the Nobel prizes in economics awarded to Robert Solow and Paul Romer in 1987 and 2018, respectively, for their contributions in the fields of productivity and long-term economic growth.

A few figures will suffice to illustrate how improvements in a community's standard of living over the long term depend almost entirely on productivity gains. Thus, for example, 80% of the increase in US per capita income since 1948 can be attributed to the growth of total factor productivity (TFP).[2] In other words, increases in TFP of around 2% per year have allowed the average US citizen to enjoy inflation-adjusted annual income which in 2015 was about US$ 30,000 higher than in 1948.

In Spain, the recent growth of TFP has been notably lower, and was even negative for a good part of the first decade of the 21st century. Thus, in the past 25 years, TFP in Spain

[2] See C. Jones (2015), *The facts of economic growth,* NBER Working Papers 21142.

has grown by approximately 0.2% per year, 0.3 pp below the euro area average, according to European Commission estimates.

A simple calculation suggests that, if in that period the Spanish TFP had performed the same as in the euro area, Spain's per capita income would now be nearly 92% of the euro area average, instead of 87%. Expressed in euro, Spain's per capita income would now be €28,000 per year, or €2,000 more than the observed value (8% in percentage terms). And if the TFP had grown at a rate of 2%, in line with the world technological frontier, the annual income of the average Spanish citizen would be nearly €40,000, or more than €1,000 extra each month.

There are two intimately related factors which would at least partly explain why productivity has behaved less dynamically in Spain than in other euro area economies in the past two decades. The first is that the Spanish business sector consists to a larger extent of small, less productive firms; the second is that the inefficiency of the resource allocation mechanisms facilitates the survival and growth of less productive firms.

The determinants of these two factors are many and diverse. Allow me to focus on three particularly important ones in which the Spanish economy is in a worryingly poorer position than our European partners: human capital, technological capital and the financing of innovation.

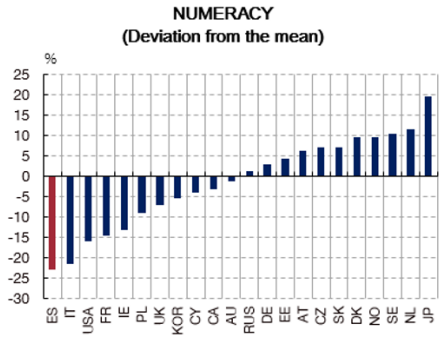
According to the available evidence, the presence of human and technological capital shortfalls is the main reason for the low productivity of Spanish firms.[3] And the difficulty in obtaining finance for highly productive business projects has shown itself to be a determinant of the inefficient allocation of resources to firms.[4]

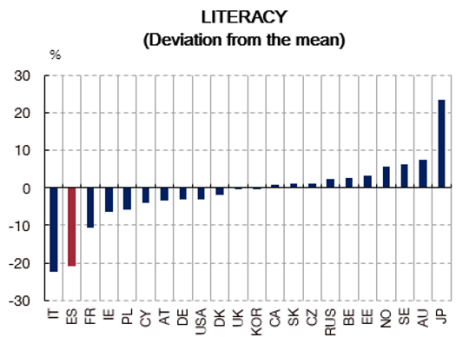
The need to correct the human and technological capital shortfalls is particularly urgent when viewed in the current context of technological change. The advances in digitalisation, automation and technological development are altering certain crucial aspects of the economy, such as consumption patterns, production processes or the provision of public and private services.

Thus, for example, the spread of new technologies has allowed the financial sector to provide services in more flexible ways not requiring customers to be physically present. As an example, the percentage of Internet users in Spain reporting that they use electronic banking services has increased by 30 pp from 2003 to 2018.[5] However, all sectors to a greater or lesser extent are caught up in the so-called "digital revolution".

[3] See F. Schivardi and T. Schmitz (2019), "The IT Revolution and Southern Europe's Two Lost Decades", *Journal of the European Economic Association,* forthcoming.
[4] See Chapter 4, "Business dynamics in Spain: characteristics, determinants and implications", *Informe Anual 2015,* Banco de España.
[5] Encuesta sobre Equipamiento y Uso de Tecnologías de Información y Comunicación en los Hogares, Instituto Nacional de Estadística.

Human capital





SOURCE: Programme for the International Assessment of Adult Competencies (PIAAC).

Educational policies at all levels are crucially important for fostering innovation and adapting the labour force to new occupations and, in general, enabling individuals to acquire and preserve the skills needed to work in an environment characterised by digitalisation, robotisation and artificial intelligence. Specifically, these phenomena will foreseeably affect the future labour market, which will be characterised by increased demand for qualified workers with high technical skills, at the expense of demand for lower skilled workers engaged in routine tasks.[6]

Having said that, Spain's starting point to address this challenge of accelerated technological innovation is not the most favourable one. The low performance of Spanish students in standard international exams indicates that the quality of the Spanish educational system leaves room for improvement in comparison with other developed countries. What is more, Spain's educational system is characterised by high rates of early school leaving: 18.3% in the population between the age of 18 and 24, compared with 10.6% in the European Union as a whole.

These shortfalls are also apparent in the adult population as a whole. Thus, in the qualifications obtained in the Programme for the International Assessment of Adult Competences (PIAAC) for the working age population, relating to mathematical reasoning and reading comprehension, Spain was ranked last and second last, respectively, among the OECD countries.

The disadvantageous levels of human capital compared with those in other developed economies are apparent in both workers and employers. On Eurostat data, in Spain 40.5% of the self-employed, 35.1% of employers and 32.6% of employees have a low educational level, compared with much smaller percentages (24.8%, 20.1% and 19.8%, respectively) in the euro area as a whole.

[6] See, for example, D. Acemoglu and P. Restrepo (2018), "The Race between Man and Machine: Implications of Technology for Growth, Factor Shares, and Employment", *American Economic Review,* vol. 108, pp. 1488-1542.

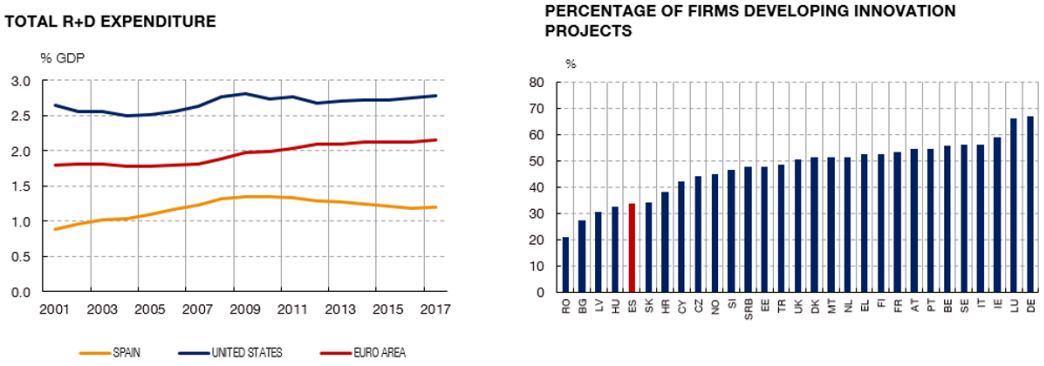
Spain also has a shortfall in terms of the proportion of the population with profiles related in some way to disciplines such as engineering or mathematics. For example, 9% of university graduates in Spain have qualifications in mathematics, science or IT, compared with 14% in Germany or 11% in the European Union as a whole.

It is also foreseeable that the massive eruption of new technologies will result in greater importance being afforded to non-cognitive skills (such as a desire to innovate, self-control, ability to concentrate, or adaptability to a changing environment),[7] in which Spain also performs poorly in the international comparison.

It therefore seems advisable to rethink the institutional design of the educational system, the content of the curriculum and the learning system itself. In this respect, it is crucial to treat this project of improving human capital as a collective task. The government will play a leadership role, evaluating and adjusting the educational system on an ongoing basis at all levels to attune it to the needs of the business world, but, at the same time, firms must become involved in the training of their employees, particularly young workers in their first job.

Technological capital

Technological capital



SOURCE: Eurostat.

In the field of technological capital, there is a broad consensus on the positive effect which research and development and innovation (R&D&I) have on the productivity of firms.[8] In this respect, the available indicators of the degree of intensity of these activities suggest that Spain ranks poorly in the international comparison. Specifically, according to Eurostat, the proportion of innovative firms is 33.6% in Spain, compared with 53.4%, 56.1% and 66.9% in France, Italy and Germany, respectively.

[7] See G. Zamarro, C. Hitt and I. Méndez (2016), *When Students Don't Care: Reexamining International Differences in Achievement and Non-Cognitive Skills,* EDRE Working Paper No. 2016-18.
[8] See, for example, U. Doraszelski and J. Jaumandreu (2013), "R&D and productivity: estimating endogenous productivity", *Review of Economic Studies,* vol. 80, pp. 1338–1383.

Similarly, the investment in research and development activities in Spain is, in aggregate terms, still very low in both the public sector (0.54% of GDP in 2017) and the private sector (0.66% of GDP in 2017), which makes Spain's R&D spending 26% and 54% lower, respectively, than the European average. It is therefore no surprise that the lack of innovation and the scant accumulation of technological capital of Spanish firms is a determining factor in explaining why Spanish firms are less productive than their European counterparts.

This technological capital gap between Spain and its European partners is at least partly due to structural characteristics which limit firms' innovative capacity, such as the lack of available human capital referred to above, or a productive structure skewed towards sectors with a low technological content.

Another basic determinant requiring special attention and which poses major challenges in the current context of technological change, is the access to finance – whether public or private – for business projects with a high innovative content.

Financing of innovation

In general, the growth of firms is conditioned by the availability of external finance to undertake new investment projects. But external finance also plays a particularly vital role in the success of the innovative projects of small new firms whose characteristics make it more difficult for them to obtain funds.[9]

These greater difficulties have their origin in information asymmetries between firms and financiers and in the comparatively higher inherent risk than that for established companies, all the more so when the returns will only be received in the long term. These characteristics contrast with the preferences of capital market financiers, who tend to seek more short-term returns and have a certain aversion to risk.[10]

Evidently these asymmetries apply to any investment project. But they are particularly important in the case of innovative projects in Spain, where external finance comes mainly in the form of bank loans, due to the absence of sufficiently developed alternative capital markets, as evidenced by the fact that bond issues still represent barely 10% of the total finance received by Spanish non-financial corporations, compared with 40% in the USA.

[9] See S. Fazzari, R. Hubbard and B. Petersen (1988), "Financing Constraints and Corporate Investment", *Brookings Papers on Economic Activity,* vol. 1, pp. 141-206.
[10] See A. Goodare and I. Tonks (1995), "Finance and Technological Change", in P. Stoneman (ed.), *Handbook of the Economics of Innovation and Technological Change,* Wiley-Blackwell, pp. 298-341.

RELATIONSHIP BETWEEN PRODUCTIVITY AND LOAN APPROVAL AT FIRMS (a)

SOURCE: Banco de España *Annual Report* 2015, Chapter IV.

a. A negative (positive) coefficient denotes a negative (positive) correlation between productivity and loan approval. The broken lines refer to the confidence intervals of the estimate.

The most recent period has seen some growth of non-bank financing in Spain and a certain improvement in the allocation of bank financing compared with the period immediately before the crisis, during which the firms receiving credit were characterised by their low productivity and a high proportion of real estate assets on their balance sheets. This largely explains the low dynamism of aggregate productivity in that period.[11] By contrast, in the recovery phase funds tended to go to firms with a comparatively more favourable economic and financial position and which were more productive.[12]

In any event, this relative improvement in the allocation of bank credit cannot be allowed to hinder the development of specific financial products to facilitate the financing and growth of small and/or newly created innovative firms. This is particularly important in a country such as Spain where the business sector consists basically of small firms, since these firms generally lack collateral, have highly uncertain future cash flows and do not have credit ratings allowing investors to get an idea of the risk associated with investing in them.

Furthermore, the high uncertainty surrounding the return on investment in R&D&I and the long time horizon at which it materialises (above five years)[13] are arguments for government involvement in their financing, particularly in the area of basic research. This is all the more so in view of the positive – and potentially disruptive – effects which certain investment in these areas may have on the population as a whole. It should be noted in this respect that the seed of the Internet was a basic research project for military use undertaken by an agency of the US Department of Defence, an initiative which would have had little chance of obtaining finance from the private sector. Moreover, the range of possible government actions go beyond providing an R&D&I investment budget. For example, they also encompass the introduction of changes to the researcher promotion and career system so as to stimulate the entry and development of promising new researchers, or the overall

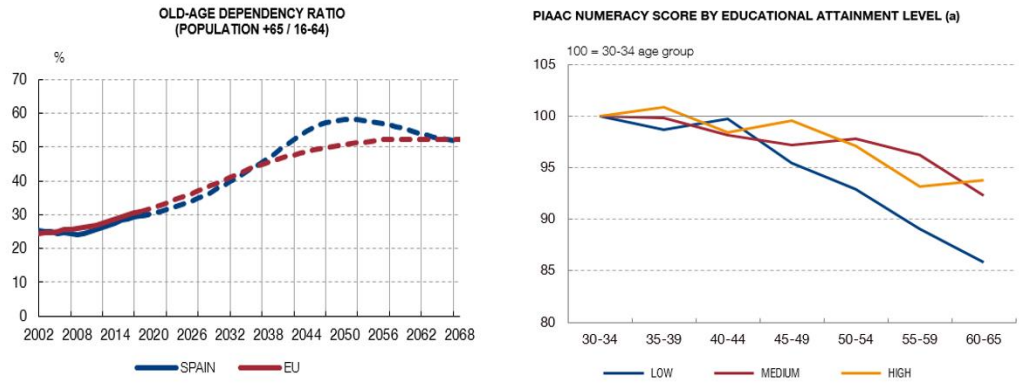
[11] See E. Moral-Benito (2018), *The microeconomic origins of the Spanish boom,* Occasional Paper 1805, Banco de España.
[12] See Chapter 2, "Financing and investment decisions of Spanish non-financial corporations", *Annual Report 2016,* Banco de España.
[13] I. Dierickx and K. Cool (1989), "Asset Stock Accumulation and Sustainability of Competitive Advantage", *Management Science,* vol. 35, pp. 1504-1511.

restructuring of government organisations engaging in innovation so as to exploit synergies between them. The government research assessment systems could also be redesigned to ensure that the allocation of funds to research centres reflects their academic excellence[14] and a public-private collaboration framework could be developed in which the private sector can efficiently channel government funds through the design of well-defined incentives.

The demographic challenge: population ageing

The challenges associated with slow productivity growth and with the transformations resulting from the technological progress I have just described above take on even greater importance when they are framed in the context of the transition to a new demographic paradigm characterised by population ageing which, although present in many Western economies, has a particularly strong impact on Spain.

The ageing challenge



Sources: INE, Eurostat and OECD (PIACC 2013).

Indeed, the combination of a low birth rate, high longevity and the impending retirement of the generation known as the baby boomers makes Spain one of the countries where the dependency ratio, which measures the proportion of persons at least 65 years of age to those aged from 16 to 64, is increasing most sharply. Specifically, according to the latest projections by the Spanish National Statistics Institute, the dependency ratio will grow from 29.9% in 2019 to 51.8% in 2050, i.e. it will practically double in three decades. This increase in the Spanish dependency ratio amply exceeds that projected for the European Union as a whole, where it will rise by a factor of 1.6 in the same period, according to Eurostat.

This change in the age composition of the Spanish population will affect a very wide range of economic factors. The most obvious is perhaps the challenge it represents to Spain's welfare state. The increasingly higher proportion of older people puts upward pressure on the expenditure of the pension, health and dependency system, which poses a challenge to its financial sustainability that must be faced soon.

[14] See the 2014 report entitled *ERAC Peer Review of the Spanish Research and Innovation System,* commissioned by the European Commission.

But the issues associated with population ageing are not limited just to the public expenditure of the welfare state. Their implications encompass many more facets of the economic arena and range from the potential growth of the economy to the management of economic policy.

Firstly, I would like to point out the close connection between population ageing and the long-term growth of the economy. As we have seen, the latter is affected by changes in employment and in productivity, which in turn is inextricably linked to technical progress. Thus, it is important to extend people's working life to stop the employment rate from falling and thus sustain Spain's capacity for long-term growth. However, there is evidence that older workers have fewer of the skills required to use new technologies because of their lesser human capital endowment, which moreover becomes depleted over time. Hence an older population may also pose difficulties for productivity growth because the digital technologies tend to complement each other better with less technologically challenged workers, who are usually younger.[15]

Moving on to the impact of ageing on the conduct of economic policy, it should be noted that, in the monetary policy arena, the central banks face a scenario which some have called "the new normal", characterised by low interest rates and balance sheet expansion. Although part of this situation is unquestionably a legacy of the financial crisis, there are other longer-term causes which prompt the persistence of a low interest rate environment. Key among these are demographic factors acting through the associated increase in the saving rate. This scenario reduces the ability of conventional monetary policy to react to future crises and poses the advisability of a wide-ranging discussion on the most appropriate strategy for the conduct of monetary policy in the future.

Fiscal policy, or, to be more specific, its government revenue side, is also affected by population ageing. There is evidence that the composition of income or the consumption basket change over the life cycle of individuals, so a change in the composition of tax bases could give rise to substantial variations in tax revenue.

Conclusion

To sum up, in the last few quarters we have witnessed a deceleration of the global economy, particularly sharp in the euro area and affecting also the Spanish economy. As a result, the macroeconomic projections have been revised downward in most countries, including Spain, and the diagnosis as to the balance of risks also remains on the downside, mainly as a result of the geopolitical uncertainty over developments in trade tensions and Brexit and, in the case of Spain, over the future course of economic policies.

Against this background, the Spanish economy, despite the improvements achieved during the recovery, continues to face significant imbalances, including most notably the high unemployment, government debt and external debt. In addition, Spain's capacity for future growth is constrained by its very weak productivity dynamics and the foreseeable impact of population ageing.

[15] See D. Acemoglu and D. Autor (2011), "Skills, Tasks and Technologies: Implications for Employment and Earnings", *Handbook of Labor Economics,* 4, pp. 1043-1171.

Given this setting, the government resulting from the coming elections must urgently take the initiative and marshal sufficient support to push through reforms to resolve the vulnerabilities still persisting in the Spanish economy and enhance its growth capacity. It is, therefore, time to put our headlights on high beam and forge a broad consensus to protect the well-being of the coming generations.

Thank you.