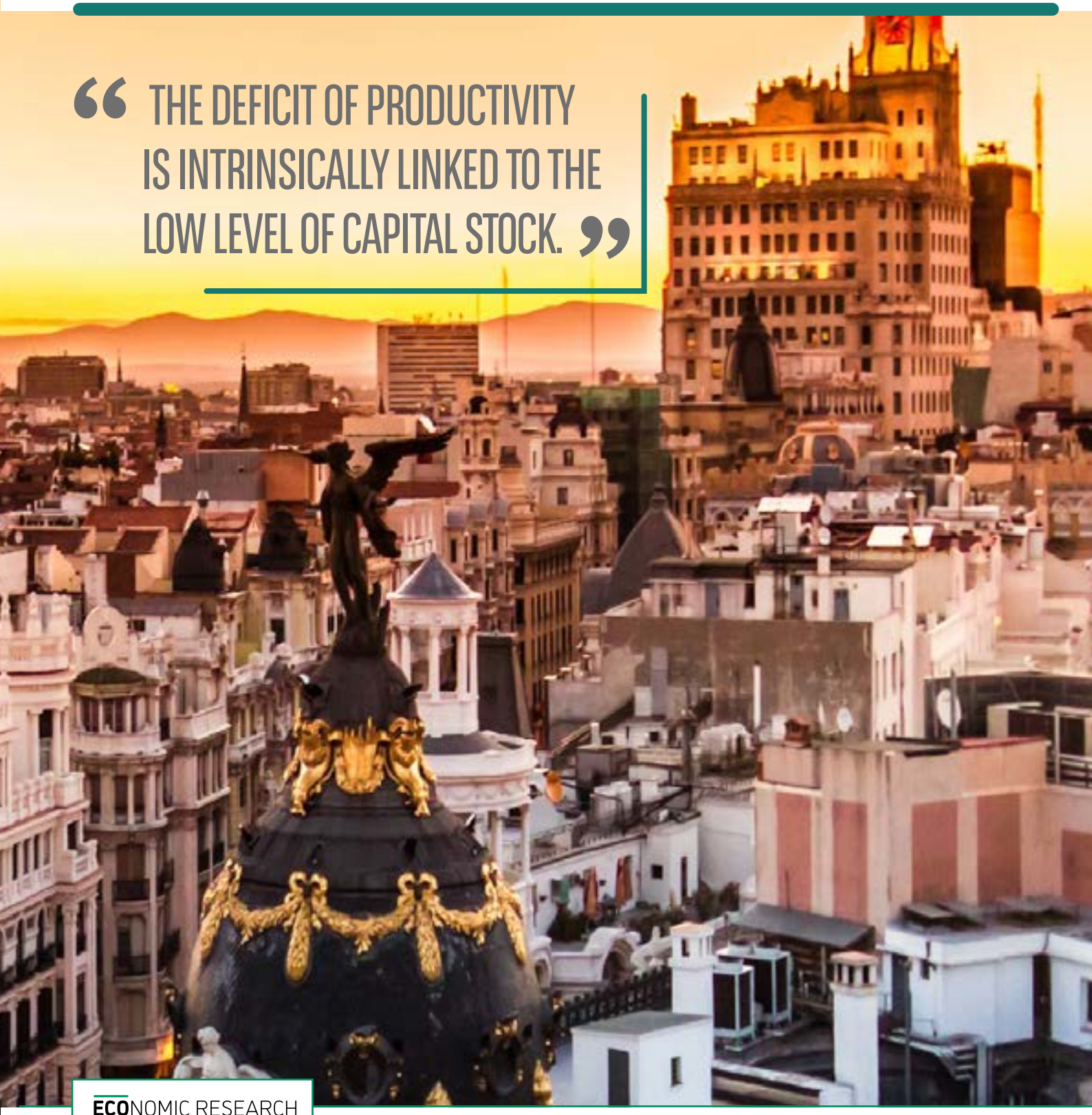
ECOCONJONCTURE

Issue 23.02
February 2023



> “THE DEFICIT OF PRODUCTIVITY IS INTRINSICALLY LINKED TO THE LOW LEVEL OF CAPITAL STOCK.”

ECONOMIC RESEARCH

BNP PARIBAS

The bank for a changing world

TABLE OF CONTENT

SPAIN: PRODUCTIVITY, AN ENDEMIC WEAKNESS OF THE SPANISH ECONOMIC MODEL

Guillaume Derrien (with Elias Krief, intern)

"España Digital 2026", "Estrategia Española de Ciencia, Tecnología e Innovación 2021-2027" and "España 2050": since the pandemic, there has been no lack of structural programmes designed to increase the competitiveness of the Spanish economy. The Spanish Government is right: the country's fundamental problems, which contributed to the 2011 crisis, persist today. Spain has one of the lowest levels of private and public investment and one of the lowest stocks per capita of productive capital in Europe. In addition, the country still suffers from a significant productivity deficit when compared to its major European partners, a deficit which it is struggling to make up as it is intrinsically linked to its low capital stock. In particular, significant delays remain in the acquisition of intangible assets. With the increasing importance last year and in 2023 of the national recovery, transformation and resilience plan (NRRP), the Spanish authorities have further fiscal room for manoeuvre to claw back some of these gaps. However, the targets set could be undermined by the economic situation in Europe at the turn of 2023 and the uncertainty this would cause with regards to corporate investment decisions.

4
MULTIPLE FACTORS BEHIND SPAIN'S LOW PRODUCTIVITY

8
IS A RECOVERY POSSIBLE?

PRODUCTIVITY, AN ENDEMIC WEAKNESS OF THE SPANISH ECONOMIC MODEL

"España Digital 2026", "Estrategia Española de Ciencia, Tecnología e Innovación 2021–2027" and "España 2050": since the pandemic, there has been no lack of structural programmes designed to increase the competitiveness of the Spanish economy. The Spanish Government is right: the country's fundamental problems, which contributed to the 2011 crisis, persist today. Spain has one of the lowest levels of private and public investment and one of the lowest stocks per capita of productive capital in Europe. In addition, the country still suffers from a significant productivity deficit when compared to its major European partners, a deficit which it is struggling to make up as it is intrinsically linked to its low capital stock. In particular, significant delays remain in the acquisition of intangible assets. With the increasing importance last year and in 2023 of the national recovery, transformation and resilience plan (NRRP), the Spanish authorities have further fiscal room for manoeuvre to claw back some of these gaps. However, the targets set could be undermined by the economic situation in Europe at the turn of 2023 and the uncertainty this would cause with regards to corporate investment decisions.

The Spanish economy suffers from chronically low productivity gains, which is symptomatic of southern European countries. Apparent hourly labour productivity has only recorded an average annual growth of 0.7% over the past 20 years (2000–2021), compared with a rise of 1.1% in Germany, 0.9% in France and 1.0% for the Eurozone (see Chart 1). Three countries performed worse than Spain during this period: Italy (+0.3%), Greece (0.0%) and Luxembourg (+0.1%), although Luxembourg's level of productivity is already high and its economic structure bears little comparison to Spain. Even if these differences in productivity growth seem modest, they have lasted over an extended period of time, and Spain already had a much lower level than most of its European neighbours. Therefore, there has been no catch-up effect over the past 20 years. In fact, the gap has widened.

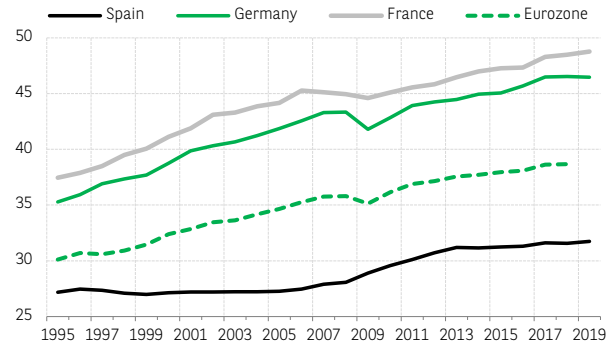
More specifically, Spain experienced a drop in productivity at the end of the 1990s, followed by a period of near-stagnation which lasted more or less until the global financial crisis of 2008. This was in singular contrast with the sustained annual growth rate in real GDP, which averaged 3.1% between 2000 and 2008. This significant gap in growth between productivity and GDP was a clear indication that the expansion model followed by Spain during that time was not sustainable, being mainly driven by unproductive investments and private debt. Indeed, the high level of gross fixed capital formation (GFCF) during this period was excessively based on the construction of buildings, which generates fewer productivity gains than other types of investments.

In addition, in the years preceding the Covid-19 pandemic, the Spanish economy relied mainly on the volume of hours worked to stimulate its GDP growth. On average over the period 2014–2019, the hours worked actually contributed as much as 70% of GDP growth, a share well above that estimated in France and Germany (Chart 2).

This is partly a result of the high number of jobs created over this period, linked to the economic recovery following the major recession and financial crisis of 2008. Furthermore, the contribution made by hours worked to GDP growth has been rising for the last three decades, although the increase has been slowing down for 20 years. Conversely, the contribution made by investment has fallen.

Although real GDP growth bounced back during the five years preceding the pandemic (it rose by 2.6% per year on average between 2014 and 2019 compared to 1.9% for the Eurozone as a whole) the gap in real GDP per capita continued to worsen compared to Germany.

APPARENT HOURLY LABOUR PRODUCTIVITY* (EUROS)

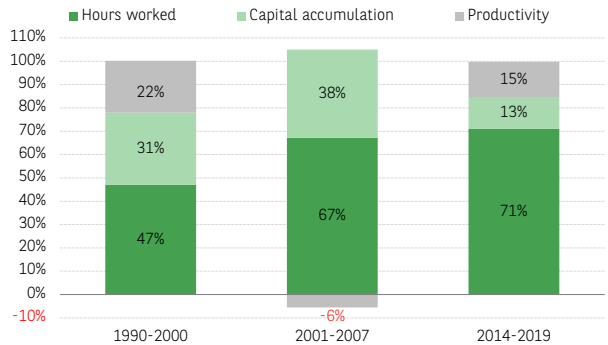


*Ratio of GDP to total hours worked

CHART 1

SOURCE: OECD, BNP PARIBAS

CONTRIBUTION TO REAL GDP GROWTH



Note: the 2008-2013 period is excluded because it is a recessionary period

CHART 2

SOURCE: KLEMS, BNP PARIBAS

Over the past 20 years, it went from a (negative) gap of 26% in 2000 to 30% in 2019. This gap widened further once the pandemic struck and was 34% in 2021. In 2021, Spain ranked 11 out of the 19 Eurozone countries in terms of per capita wealth[1].

1 Source: Eurostat

WHAT IS PRODUCTIVITY EXACTLY?

In this article, we have focused on the apparent hourly labour productivity, calculated as the ratio between the value added and the number of hours worked. This aggregated measure is simple to identify and encompasses the interaction of four important sub-indicators, namely: (i) labour productivity (which can be increased by professional training); (ii) capital productivity (which can be increased by incorporating more technical progress into investments); (iii) the capital-output ratio (capital intensity), whose growth tends to increase productivity; (iv) total (or multi-factor) factor productivity (TFP), which is the level of efficiency of use between capital and work. The OECD publishes estimates for the annual growth rate of the last three indicators. Changes since 2000 are summarised in the table below. Over the past 20 years, capital productivity and TFP largely explain Spain's inability to keep up with other European countries, while in contrast, the capital-output ratio has increased more sharply in Spain. Nevertheless, this increase in the ratio is essentially due to the period of recession which lasted from 2009 to 2013 (not detailed here) and which directly increased the ratio via a decrease in the denominator (output).

There is no perfect measure of productivity. Calculations of the TFP and capital productivity are particularly difficult and there are margins for error; these are caused, for example, by a miscalculation of deflators or an incorrect estimation of the contribution to growth made by information and communication technologies. However, since these limitations are common to all economies, they should not significantly influence the differences in productivity between them, which constitute the central theme of this article.

BREAKDOWN OF PRODUCTIVITY AND HOW IT HAS CHANGED SINCE 2000

	Capital productivity			Total factor productivity			Capital stock to output ratio		
	2000-2008	2014-2019*	2000-2019*	2000-2008	2014-2019*	2000-2019*	2000-2008	2014-2019*	2000-2019*
Spain	-2,4	0,8	**-1,9**	-0,2	0,5	**0,1**	1,3	-1,5	**1,1**
Germany	-0,6	0,1	**-0,4**	0,8	0,7	**0,6**	-0,4	-1,0	**-0,5**
France	-1,7	-0,9	**-1,5**	0,5	0,4	**0,3**	0,6	-0,1	**0,5**
Italy	-1,9	0,5	**-1,3**	-0,3	0,3	**-0,2**	0,9	-1,1	**0,5**

Note: These figures are average annual rates. Latest data available for Spain.

BOX 1

SOURCE: OECD, BNP PARIBAS

MULTIPLE FACTORS BEHIND SPAIN'S LOW PRODUCTIVITY

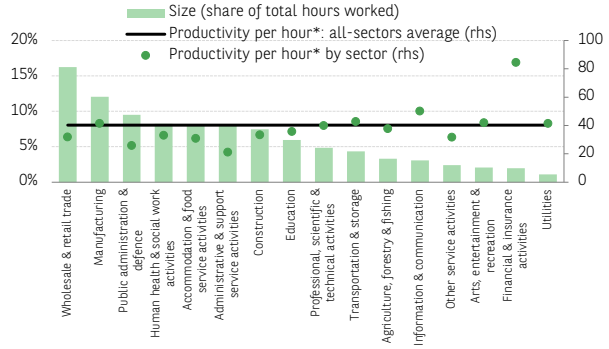
Role of composition effects

This productivity deficit has been fuelled by composition effects of activity linked to a reorientation of the economy towards "consumer" services which is labour intensive, especially in trade (retail, wholesale, catering and hotels) and public services (education and health), while jobs in industry fell.

Since the late 1990s, the process of deindustrialisation in Spain has gone further and faster than in most other European countries[2]. The Spanish economy now essentially relies on the performance of sectors that have grown in size over the past two decades and whose productivity levels are lower, particularly in relation to manufacturing (Chart 3) and services classed as "knowledge-intensive", which encompass a large proportion of jobs in information and communications, and professional, scientific and technical services in particular.

This rebalancing of the employment landscape is not the only explanation for Spain's weak productivity gains, as there is a significant gap within the business sectors themselves. In 2018[3], Spain registered hourly labour productivity above the Eurozone average in only eight of the 31 industries studied (see Table 1), with an average productivity deficit of 18%. The difference is more than 30% when set against Germany and France[4].

SIZE AND HOURLY PRODUCTIVITY BY INDUSTRIAL SECTOR (2018)



* Gross Value Added / Total hours worked

CHART 3

SOURCE: KLEMS, BNP PARIBAS

2 See BNP Paribas EcoConjoncture Spain: the tortuous path to reindustrialisation, 22 September 2021.
3 The OECD does not provide level data for productivity by sector. We are thus using the latest available EUKLEMS data (https://euklems-intanprod-llee.luiss.it/), which are for 2018. Despite this constraint, it is unlikely that sector productivity levels have varied significantly since then.
4 Our calculation method is similar to that used in an article by the Bank of Spain: P. Cuadrado, E.Moral-Benito and I. Solera (2020) A Sectoral Anatomy of the Spanish Productivity Puzzle, Bank of Spain working document

SPAIN, APPARENT HOURLY LABOUR PRODUCTIVITY GAP BY INDUSTRIAL SECTOR (2018)			
Sector (%)	**Germany**	**France**	**Eurozone**
Agriculture, forestry and fishing	32	1	55
Mining and quarrying	26	-13	-5
Manufacturing	-36	-35	-15
Food products, beverages and tobacco products	5	-22	-1
Textiles, wearing apparel, leather and related products	-29	-15	28
Zood, paper, printing and reproduction	-28	-31	-17
Coke and refined petroleum products	33	3	43
Chemicals, basic pharmaceutical products	-33	-55	-31
Rubber, plastic products and other non-metallic mineral products	-22	-28	-8
Basic metals and fabricated metal products, except machinery and equipment	-27	-27	-10
Computer, electronic, optical products and electrical equipment	-39	-41	-20
Machinery and equipment n.e.c.	-32	-19	-21
Motor vehicles and other transport equipment	-52	-57	-26
Other manufacturing	-34	-44	-17
Utilities	1	1	30
Construction	-21	-31	-9
Wholesale, retail trade and repair of motor vehicles	-38	-40	-25
Transportation and storage	-18	-26	-12
Accommodation and food service activities	15	-19	5
Information and communication	-35	-38	-24
Publishing, motion picture, video, television programme production and others	-47	-52	-37
Telecommunications	-15	-19	9
Computer programming, consultancy and information service activities	-52	-50	-41
Financial and insurance activities	-3	-11	-14
Real estate activities	-38	-27	-17
Professional, scientific and technical activities	-35	-44	-28
Administrative and support service activities	-46	-43	-32
Public administration and defence	-44	-46	-34
Education	-14	-32	-7
Human health and social work activities	7	-17	1
Arts, entertainment and recreation	-24	-13	-5
Other service activities	-48	-37	-27
Activities of households as employers	-4	15	27
Total	**-32**	**-35**	**-18**

TABLE 1

SOURCE: KLEMS, BNP PARIBAS

Capital stock levels too low

Although net capital stock continued to grow (Chart 4), this process was interrupted from the 2008 global financial crisis onwards. Following an initial phase where the accumulation slowed, it became more acute in 2012 after the sovereign debt crisis in the Eurozone. More specifically, investment in housing and other buildings and civil engineering works (see "construction" below) fell strongly. This logically caused a slowdown in the accumulation of capital in construction: average annual growth fell from 3.7% between 1998 and 2008, to 1.6% the following decade[5]. As the rate of depreciation of this capital (construction) is relatively slow – unlike, in particular, that of intangible assets which quickly become obsolete[6] – the volume of gross investment, although falling, has therefore remained sufficient for the net capital stock to increase.

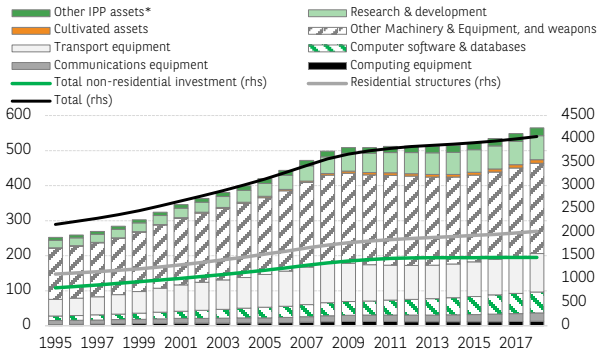
Until 2008, the increase in investment in the construction sector therefore helped sustain economic growth and thus mask the low levels of investment in other asset classes that are more likely to generate productivity gains. Investment in construction as a share of total GFCF reached a peak of 70% in summer 2006, whereas the EU average did not exceed 55%. This unsustainable pattern reversed abruptly from 2008, and a rebalancing took place. The share of investment in construction in Spain has now fallen below the Eurozone average, which has also declined slightly compared to 15 years ago (Chart 5). This significant volume gap between investment in construction and in other items largely explains why productivity in Spain remained well below the rest of the Eurozone, despite an overall rate of investment which was much higher than the average across these same countries.

Under-investment in intangible assets

Capital stock in assets other than construction remains lower than in most other industrialised countries. In 2018, net capital stock per capita (excluding construction) was approximately 25% lower than in France, 50% lower than in Germany, and almost a third lower than the Eurozone average (Chart 6). More specifically, while in 2018 Spain's net capital stock per capita was close to its major European partners in terms of transportation and communications equipment and in IT equipment (hardware), it was significantly behind in research and development (R&D) and, to a lesser extent, in capital goods excluding transportation. R&D plays an important role in generating productivity gains[7], particularly in high-tech manufacturing industries and in the services classed as "knowledge-intensive" mentioned earlier. This low level of capital stock in R&D reflects the many years of under-investment in this area. In addition, a measure of GFCF which captures a larger set of intangible assets (some are not taken into account in the current calculations of GDP) would indicate an even greater deficit in Spain's investment in this area compared to its major European neighbours (see Box 2).

Although the data used in this article (KLEMS) currently ends in 2018, it is highly unlikely that a reversal of the trend has occurred since then: Eurostat figures indicate that the gap in investment in intangible assets, mainly derived from intellectual property rights (software and databases, R&D) has persisted to date (Chart 7).

NET CAPITAL STOCK (EUR BN)



* Mineral exploration and evaluation services', 'Entertainment, literary or artistic originals' included

CHART 4 SOURCE: KLEMS, BNP PARIBAS

CONSTRUCTION GFCF BY VOLUME (% GDP)

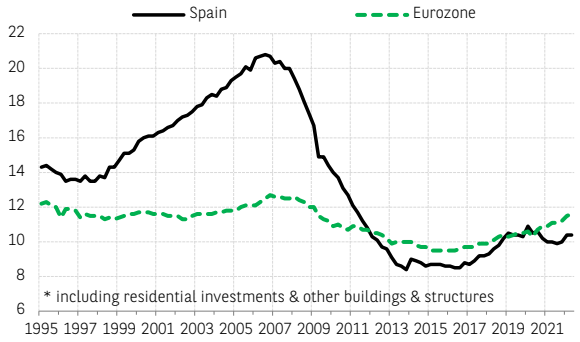


CHART 5 SOURCE: KLEMS, BNP PARIBAS

NET CAPITAL STOCK PER CAPITA EXCLUDING CONSTRUCTION (EUROS)

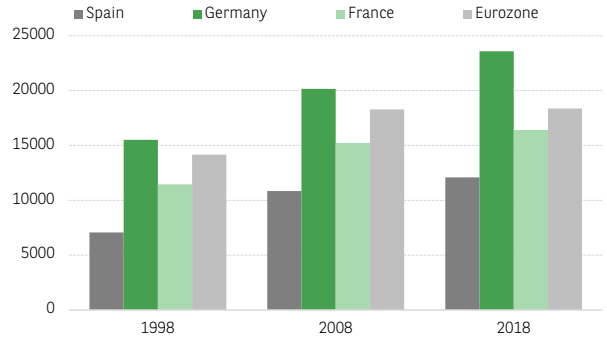


CHART 6 SOURCE: KLEMS, BNP PARIBAS

5 According to KLEMS, net capital by volume of residential assets rose from EUR 1,187 billion to EUR 1,728 billion between 1998 and 2008, a total increase of 46%. Subsequently, it only increased from EUR 1,779 billion to EUR 2,022 billion between 2009 and 2018 – growth of 13.7%.
6 According to KLEMS estimates, the annual asset depreciation rate, in ascending order, is as follows: housing (1.1%); other construction (3.2%); communications equipment (11.5%); machinery and equipment other than transportation (13.1%); other intellectual property rights (13.1%); transportation equipment (18.9%); cultivated biological resources (20.0%); research and development (20.0%); software and databases (31.5%); ICT equipment (31.5%).
7 See, for example, D. Guellec and B. van Pottelsberghe de la Potterie (2001). R&D and Productivity Growth: Panel Data Analysis of 16 OECD Countries, OECD research paper.

WHAT HAPPENS IF THE LIST OF INTANGIBLE INVESTMENTS IS WIDENED?

At the last review of the System of National Accounts (NAS) in 2008, three intangible assets previously recorded as intermediate consumption were included as final investments: (i) research and development; (ii) software and databases; (iii) "original literary and artistic works, expenditure for mineral or oil exploration". These investments have now been transferred to the intellectual property rights category. On the basis of these figures, Spain suffered already from a significant lack of spending compared to its main partners (as illustrated in Chart 7).

Yet the analysis can be developed further: other private intermediate consumption items, listed as intangible investments in the EU KLEMS database, remain excluded from the current GDP measure – even though they make up a considerable share of total intangible assets (57% in 2018, see Table below) and their contribution to company efficiency is recognised by academic research. The aim of this expenditure is to increase companies' productivity, both in terms of physical capital (industrial design, organisational capital) and human capital (continuous professional development). The list, as well as the respective weight of each item within the total GFCF, is presented in Table A below.

To this end, we have calculated a wider measure of intangible GFCF incorporating these items. It shows that in 2018 (the most recent data available), intangible investment in Spain more than doubles once these components are added (+130%) with total added value increasing by 5%. This level effect, which is shared by all countries, is nevertheless lower than that observed in Germany, France and the United States (Chart A). In France and the US, we can see that intangible investment rises above 10% of total value added, while the increase does not exceed 5% in Spain. Consequently, and even if it remains difficult to evaluate the precise stock of these assets, enlarging the GFCF measure in the national accounts would lead Spain to record an even wider deficit in intangible assets investment (Chart B), although these assets constitute critical expenditure to adapt the economy to technological changes and the digital revolution of production processes.

GFCF FOR INTELLECTUAL PROPERTY PRODUCTS (% GVA)

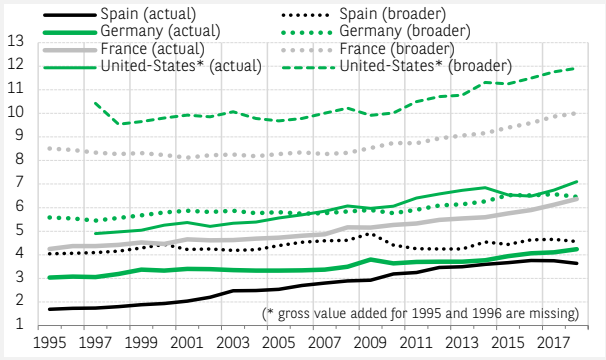


CHART A

GAP AGAINST GFCF INTELLECTUAL PROPERTY PRODUCTS (% POINT)

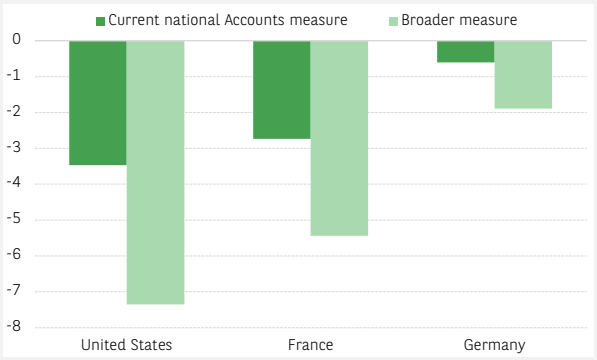


CHART B

Note: a wider gap indicates a larger GFCF deficit for Spain than the comparator country.

LIST AND WEIGHTING OF INTANGIBLE INVESTMENTS WITHIN THE "ENLARGED" GFCF

Category	Assets	Weight in "broader" GFCF (2018)
Computerised information	Computer software & database*	22.6
innovative property	Other intellectual property products (mineral exploitation & evaluation; entertainment, literacy & artistic originals; other IPP)*	4.2
	Research & Development*	16.4
	Industrial Design	13.3
	New product development costs in the financial industry	2.3
Economic competencies	Advertising & market research	19.4
	organisational capital	14.1
	Training	7.8

* already included in National Accounts

BOX 2

SOURCE: KLEMS, BNP PARIBAS

Cuts in public investment

Spain's investment deficit cannot only be attributed to private sector companies. Public sector GFCF in Spain has also fallen sharply. As a share of GDP, it declined from 5.2% in 2009 at its peak to 2.7% in 2021 (Chart 8). Set against national GDP, these investment levels remain among the lowest in the OECD today. However, there may be significant synergy between public and private sector investment: the first allows new sectors and activities to emerge and receive support, which ultimately furthers the development and productivity of private companies.

The fiscal austerity policies implemented in Spain following the two major economic crises of 2008 and 2011 were at the expense of this long-term public investment. The budget category of "economic affairs" (*asuntos económicos*), which accounts for the largest share of state investments, suffered in particular.

Despite a slight recovery in recent years, the amount of spending on this item in 2019 was hardly above the level seen in the early 2000s and was almost 60% below 2010, which was the record high year. All sectors were affected by these budget cuts, but especially transport, the largest item (down 65% compared to 2010), as well as energy (down 80%) (Chart 9).

IS A RECOVERY POSSIBLE?

After a short but sharp fall during the first lockdown (-8.3% q/q in Q2 2020), investments in intellectual property rights in Spain recovered. They hovered at around 3% above pre-pandemic levels, reaching 3.5% as a share of GDP at the end of 2022. The figure is likely to rise soon above 4% of GDP, especially as the investment plans contained in the National Recovery and Resilience Plan (NRRP) become a reality on the ground.

The digitisation of business activities, which accelerated with the pandemic, is one lever to increase the productive efficiency of Spanish companies. Given Spain's low level of investment in this field, it is paradoxical that the country is ranked among the most advanced in the EU in this area. According to the Digital Economy and Society Index (DESI) compiled by the European Commission and updated last July[8] (Chart 10). Spain ranks seventh in the EU, two places higher than last year. One of Spain's main improvements in the new report is in the integration of digital technologies into businesses, where the country is ranked eleventh, five places higher than in 2021. However, the report underlines that *"companies are not capitalising enough on new technologies such as artificial intelligence, big data and the cloud, which could help drive productivity and the expansion of e-commerce."* Training workers in new digital technologies

is the other obstacle, which will take time to resolve. In particular, and as emphasised previously in this article, information and communications technology (ICT) specialists as a share of total employment is even lower than the European average (4.1% in 2021, compared to an EU average of 4.5%). In terms of digitisation, Spain therefore has a number of attributes that should be strengthened with the help of the structural programmes announced by the executive since the Covid-19 crisis – especially the España digital 2026 agenda and the España 2030 industrial policy, which form the basis for the Strategic Projects for Economic Recovery and Transformation (PERTEs).

GFCF IN INTELLECTUAL PROPERTY RIGHTS, BY VOLUME (% GDP)

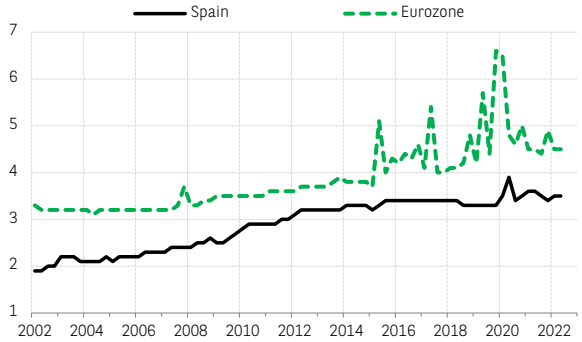


CHART 7 SOURCE: KLEMS, BNP PARIBAS

GENERAL GOVERNMENT GFCF BY VOLUME (% GDP)

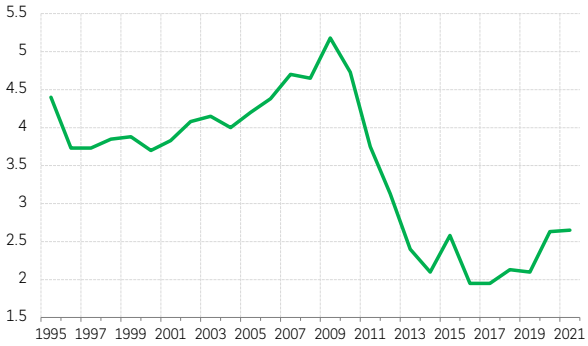
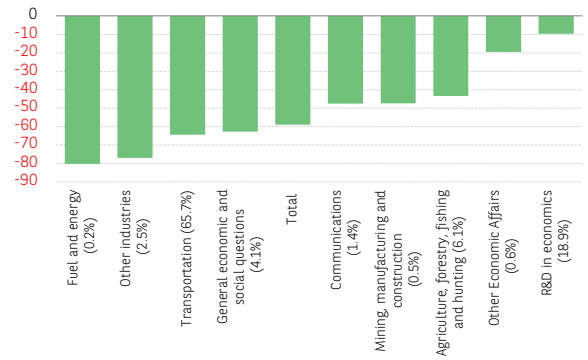


CHART 8 SOURCE: EUROSTAT, BNP PARIBAS

EXTENT OF CUTS TO THE "ECONOMIC AFFAIRS" BUDGET IN % (2010–2019)



Note: the figures in brackets represent the share of each item in the total.

CHART 9 SOURCE: IGAE, BNP PARIBAS

8 https://digital-strategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi-2022

PERTE: a public-private partnerships to transform the Spanish economy

The PERTE programme, which is a key plank of the NRRP, forms a set of 11 projects aiming to underpin the long-term transformation of the Spanish economy. The originality of the programme is in the creation of a public-private partnership through which the government supports investment by private companies and research centres via grants and loans. Since its launch in July 2021 and until 2027, EUR 33 billion in public funds (2.7% of Spanish GDP) will gradually be allocated to the financing of these strategic projects. These state support payments to companies – mainly SMEs – should, according to estimates from the prime minister's office (Moncloa), raise an additional EUR 36 billion from the private sector (2.9% of GDP) by 2030.

Owing to their significant contribution to growth and employment in Spain, several projects focus on key sectors of the economy. Examples include the automotive industry, which accounts for 15% of Spanish exports, and the naval industry and the food processing industry, sectors set to be transformed to ease the passage of the energy and digital transitions. Other projects aim to develop activities that remain limited but are essential in the long term to allow Spain to face additional challenges related to energy (renewable hydrogen, electricity storage, the circular economy), industry and technology (aerospace, semiconductors) and the population (social economy, health and social care). In particular, these initiatives should enable an increase in spending on research and development in line with the España 2050 strategy, which would then constitute an important first step towards improving productivity in the country.

Boosting productivity: essential in the long run

Insufficient productive investment and chronically low productivity gains are weighing on the potential growth of the Spanish economy, which since the 2008 crisis has been growing at an average annual rate much lower than before (Chart 11). There is a real risk that this potential growth will reduce further to the point of approaching near-stagnation – primarily because of Spain's ageing population and the impact of this on the level of working population. The contribution of the labour factor, the main driver to growth in Spain, is therefore likely to weaken over time. In these circumstances, investment and productivity gains will need to grow stronger in order to maintain a growth trajectory which is sustainable and sufficient to contain the country's debt trajectory, in particular.

The lack of investment and low stock of productive capital is reflected in Spain's delay in creating jobs in highly technical sectors, especially, for example, "information and communications" services and "scientific and technical professional activities". These two sectors currently account for one in 10 jobs in the country. The structurally high unemployment rate in Spain and difficulties for young people to enter the labour market[9] are also hampering job creation in these sectors. Although the youth unemployment rate is falling, it still stood at 27.9% in December 2022, almost double the Eurozone average (14.8%). Another feature of Spanish society is that it has one of the highest education dropout rates in the Eurozone, with almost half (48%) of the working population aged 25–64 without qualifications in 2019.

DIGITAL ECONOMY AND SOCIETY INDEX (DESI, 2022)

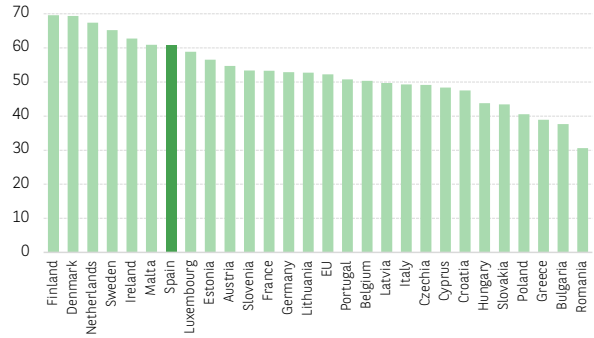


CHART 10 SOURCE: EUROPEAN COMMISSION, BNP PARIBAS

SPAIN: POTENTIAL GDP, ANNUAL GROWTH (%)

CHART 11 SOURCE: EUROPEAN COMMISSION (AMECO), BNP PARIBAS

SCHEDULE OF GRANTS ALLOCATED TO SPAIN UNDER THE EU RECOVERY AND RESILIENCE FACILITY (EUR BN)

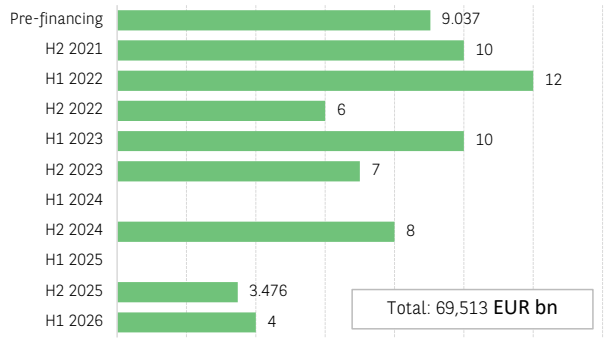


CHART 12 SOURCE: EUROPEAN COMMISSION, BNP PARIBAS

9 From primary school to vocational training and university, Spain has some of the highest levels of educational failure of all the advanced economies. In 2019, 29% of 15-year-old students had repeated a school year at least once, compared to 11% across the OECD; 17.3% of young people left the education system after secondary school, the highest rate in Europe (compared to 10.2% across the EU-27). And for those who completed secondary education, only 70% were studying in 2019, compared to 85% across the EU-27.

LIST OF PERTE PROJECTS

Sector/Activity	Approval	Time horizon	Amounts invested (EUR bn)			Goals	Actions
			Public	Private	Total		
Development of electric vehicles	July 21	2023	4.3	19.7	24.0	(i) Creation of 140,000 jobs; (ii) Contribution to GDP between 1% and 1.7%; (iii) Target production of 250,000 electric cars, and between 80,000 and 110,000 charging stations deployed	(i) Electrification of the vehicle production chain; (ii) Creation of a manufacturing ecosystem for electric car batteries; (iii) Digital tasks training programme for employees in the automotive sector
Agri-food	February 22	2023	1.8	n.a.	1.8	(i) Strengthening and Transformation of the agri-food industry; (ii) Improved water management with modernisation of irrigation; (iii) Impact of EUR 3 bn on the Spanish economy	(i) Improvement in the production process relating to the competitiveness, sustainability and traceability of food production; (ii) Digitisation of activities; (iii) Support for innovation and research
Design and production of semiconductors	May 22	2027	12.3	n.a.	12.3	(i) Strengthen the design and production capabilities of the microelectronics and semiconductor industry and promote national and European strategic autonomy in this sector.	(i) Strengthening of science capacities (R&D); (ii) Development of microprocessor design strategies; (iii) Construction of manufacturing plants; (iv) Building of a stronger ICT industry through the creation of a chip-focused capital fund to finance innovative start-ups, scale-ups and SMEs in the national semiconductor sector"
Renewable energy, hydrogen and storage	Dec. 21	2026	6.9	9.5	16.4	(i) Creation of 280,000 direct and indirect jobs; (ii) Climate targets (Renewable Hydrogen Roadmap) to achieve 4 GW of production capacity by 2030, i.e. 10% of the EU's total capacity	(i) Development of renewable hydrogen and other renewable energies targeting the equipment-producing sectors for renewable infrastructures (replacement of turbines, recycling and processing of obsolete equipment; development of biogas from agricultural activities/waste to be converted into biomethane; (ii) Electrical infrastructures ("smart" grids, energy storage)
Aerospace	March 22	2025	2.2	2.3	4.5	(i) Strengthen the position of Spain in the aerospace sector and promote its participation in international programmes; (ii) Develop aeronautical infrastructures meeting the requirements of the Single European Sky regulation	(i) Training in zero-emission technologies and systems for the aeronautical industry; (ii) Strengthening of monitoring, quantum communications and security capabilities; (iii) Promotion of innovation, sustainability and digitisation actions in manufacturing centres and training and education focused on the aerospace sector
Healthcare	Nov. 21	2021-22	1.0	0.5	1.5	(i) Development of innovative procedures to improve the prevention, diagnosis, treatment and rehabilitation of patients in a personalised way	(i) Innovation and development of advanced treatments aimed at curing diseases such as diabetes and neurodegenerative diseases; (ii) Introduction of a digital National Healthcare System (integrated database enabling the collection, processing, analysis and use of patient data to improve prevention, diagnosis, treatment and research)
Circular economy	March 22	2026	0.5	0.7	1.2	(i) Creation of 70,000 jobs	(i) Actions on key sectors (textiles, plastics, capital goods for renewable energies); (ii) Cross-functional actions at company level (all sectors combined) - aid divided into 4 categories, namely (a) reduction in the consumption of commodities; (b) development of eco-design; (c) waste management; (d) digitisation.
Maritime industry	March 22	n.a.	0.3	1.2	1.5	(i) 15% increase in competitiveness; (ii) Creation of 3,100 skilled jobs, mainly in outlying regions	(i) Digitisation, training, ecological transition and diversification of activity, with particular focus on the use of offshore wind and other renewable energy sources.
Digitisation of water management	March 22	2030	1.9	1.2	3.1	(i) Creation of 3,500 skilled jobs (engineering, IT, science and telecommunications); (ii) Reduce water waste by 10% (vs. 23% in 2022)	(i) Digitisation/automation of irrigation systems (increase the establishment of meters in water intakes and on land plots, improve control systems for soil moisture and conductivity, enhance the measurement of fertiliser inputs; (ii) Promote the digitisation of administrative procedures (strengthen programmes for monitoring and control of discharges with the help of real-time monitoring systems).
Social and care economy	May 22	2026	0.8	n.a.	0.8	(i) Increase the size of the sector to 11% of GDP, compared to 10% in 2022	(i) Better protection for employees, defence of the interests of various groups; (ii) Strengthening policies on equality and facilitating the conversion of companies in difficulties or lacking in generational change
New language economy	March 22		1.1	1.0	2.1	Make Spain a benchmark for the Spanish language, benefiting the entire Spanish-speaking community	(i) Promote the knowledge and culture of the Hispanic world; (ii) Coordinate the activities of Spanish cultural organisations around the world; (iii) Promote the teaching of Spanish; (iv) Financing of cultural activities
Total		**EUR bn**	**33.0**	**36.1**	**69.1**		
		% GPD	**2.7%**	**2.9%**	**5.6%**		

TABLE 2 SOURCE: MONCLOA

These causes of disengagement, which were amplified during the period of economic recession in the country that started in 2009, fuel the country's low employment rate. The employment rate has been rising markedly since.the major lockdown in 2020 ended (65.4% for 15-64-year-olds in Q4 2022), nevertheless remaining below what can be found elsewhere Europe – the employment rate in the Eurozone sits five points above Spain, at 69.5% in Q3 2022.

The increase in high-tech investments and in productivity, labour and capital, rightly form the central pillars of the España 2050 plan[10] unveiled by the government of Pedro Sanchez in May 2021. Composed of 50 indicators divided into nine major themes, the principal aim of this long-term programme is to close the gap between Spain and the most advanced European countries. The first part of this plan, which is summarised in Table 3, aims to raise labour productivity – especially by targeting an increase of 10% by 2030, and of 50% by 2050. To this end, there will be a major boost in R&D spending, the objective being to achieve a level of spending equivalent to 3% of GDP, more than double the current level (1.4% of GDP in 2020, according to the OECD).

Raising the employment rate is a third important lever which would help restrict the negative effects of an ageing population on the labour market. The Spanish government expects the employment rate of 15-64-year-olds to rise to 68% by 2030 (compared to around 65% in Q4 2022), which would bring Spain closer to the Eurozone average (70% according to OECD data) without closing the gap though. For the time being, the España 2050 plan only offers major policy orientations. It must be supported by concrete projects or structural measures in order to assess its potential for success. Nevertheless, it already has the merit of putting on paper the profound weaknesses of the Spanish economy and the strategic indicators designed to remedy them, which seem credible and achievable.

Some interesting trends are already in place with regard to the labour market. Employment bounced back vigorously after the pandemic, reaching record levels in 2022. The unemployment rate fell back to 12.4% in the summer of 2022, a level not seen for almost 14 years. The employment structure also improved following the reform of employment law introduced in early 2022, which led to a record rise in permanent employment contracts[11]. An improvement in workforce stability should encourage companies to make greater use of on-job training, which would increase the quality and productivity of work, in turn supporting potential growth.

When it comes to investment, the volume of financing unlocked for the NRRP is growing perceptibly: between the beginning of the year and mid-September 2022 (14 September), the Spanish government released almost EUR 19 billion via this programme – EUR 7 billion more than at the same time last year. These funds are fully financed by subsidies from the EU Recovery and Resilience Facility, payments which are strongly concentrated in 2022 and 2023 (Chart 12). The effects on investment are contained for the time being, and at the end of 2022, the ratio of GFCF to GDP remained below its level of 2019. Nevertheless, the impact of this plan on investment is expected to be most apparent over the next two to three years, while the benefits in terms of productivity and jobs will be spread out more over time.

Furthermore, one reason for the decline in private investment was that Spanish companies as a whole had been heavily indebted in the years leading to the great crisis of 2008, and that the subsequent debt reduction phase was long, leading to a cut in corporate capital expenditure. Although still historically high, and up recently as a result of the pandemic, overall non-financial corporations' debt-to-GDP ratio is currently lower than in the past. This will not prevent companies from suffering very severely from the current spike in production costs, but it should allow them to better withstand the shock than if it had occurred a decade ago. In the short term, the tightening of lending conditions, the challenging economic situation in Europe and uncertainty about the outlook for 2023 risk weighing on companies' investment decisions. While the Spanish economy still has a long way to go to close its investment and productivity gaps and therefore its competitiveness compared to the rest of Europe, the scope for doing so appears greater than in the past.

Completed on February 1, 2023

guillaume.a.derrien@bnpparibas.com

10 200521-Estrategia_Espana_2050.pdf (lamoncloa.gob.es – in Spanish)
11 See BNP Paribas "Chart of the week": "The effects of labour market reforms in Spain are clearly visible", 19 July 2022.

KEY INDICATORS IN THE FIRST PART OF THE 'ESPAÑA 2050' PLAN TO INCREASE LABOUR PRODUCTIVITY

Indicators	Current level		Goals		
	Average 2015-2019	2021	2030	2040	2050
Gap with the UE-8 Per capita income	-22%		-18%	-15%	-10%
Labour productivity level (constant euros, PPP 2015)	42		46	53	63
Employment rate (16-64 years, % population)	62%	62.7%	68%	72%	80%
Total expenses in R&D (% of GDP)	1.2%	1.4%	3%	3.5%	4%
Company by size (% of total employment)					
Big (+250 employees)	31%	n.a	32%	33%	35%
Medium (20-249)	23%	n.a	25%	28%	30%
Small (1-9)	45%	n.a	42%	38%	35%
Underground economy (% of GDP)	20%		15%	12%	10%

TABLE 3

SOURCE: MONCLOA

GROUP ECONOMIC RESEARCH

William De Vijlder Chief Economist	+33 1 55 77 47 31	william.devijlder@bnpparibas.com

OECD ECONOMIES AND STATISTICS

Hélène Baudchon Head - Eurozone, United States	+33 1 58 16 03 63	helene.baudchon@bnpparibas.com
Stéphane Colliac France, Germany	+33 1 42 98 43 86	stephane.colliac@bnpparibas.com
Guillaume Derrien Southern Europe, Japan, United Kingdom - International trade	+33 1 55 77 71 89	guillaume.a.derrien@bnpparibas.com
Veary Bou, Tarik Rharrab Statistics		

ECONOMIC PROJECTIONS, RELATIONSHIP WITH THE FRENCH NETWORK

Jean-Luc Proutat Head	+33 1 58 16 73 32	jean-luc.proutat@bnpparibas.com

BANKING ECONOMICS

Laurent Quignon Head	+33 1 42 98 56 54	laurent.quignon@bnpparibas.com
Céline Choulet	+33 1 43 16 95 54	celine.choulet@bnpparibas.com
Thomas Humblot	+33 1 40 14 30 77	thomas.humblot@bnpparibas.com
Marianne Mueller	+33 1 40 14 48 11	marianne.mueller@bnpparibas.com

EMERGING ECONOMIES AND COUNTRY RISK

François Faure Head – Argentina, Turkey – Methodology, Modelling	+33 1 42 98 79 82	francois.faure@bnpparibas.com
Christine Peltier Deputy Head – Greater China, Vietnam – Methodology	+33 1 42 98 56 27	christine.peltier@bnpparibas.com
Stéphane Alby Africa (French-speaking countries)	+33 1 42 98 02 04	stephane.alby@bnpparibas.com
Pascal Devaux Middle East, Balkan countries	+33 1 43 16 95 51	pascal.devaux@bnpparibas.com
Hélène Drouot South Korea, Philippines, Thailand, Andean countries	+33 1 42 98 33 00	helene.drouot@bnpparibas.com
Salim Hammad Latin America	+33 1 42 98 74 26	salim.hammad@bnpparibas.com
Cynthia Kalasopatan Antoine Ukraine, Central European countries	+33 1 53 31 59 32	cynthia.kalasopatan.antoine@bnpparibas.com
Johanna Melka India, South Asia, Russia, Kazakhstan	+33 1 58 16 05 84	johanna.melka@bnpparibas.com
Lucas Plé Africa (Portuguese & English-speaking countries)		lucas.ple@bnpparibas.com

CONTACT MEDIA

Mickaelle Fils Marie-Luce	+33 1 42 98 48 59	mickaelle.filsmarie-luce@bnpparibas.com

GROUP ECONOMIC RESEARCH

ECOCONJONCTURE
Structural or thematic topics.

ECOEMERGING
Analyses and forecasts for a selection of emerging economies.

ECOPERSPECTIVES
Analyses and forecasts with a focus on developed countries.

ECOFLASH
Data releases, major economic events.

ECOWEEK
Recent economic and policy developments, data comments, economic calendar, forecasts.

ECOTV WEEK
A weekly video discussing the main event of the week.

MACROWAVES
Our economic podcast.

Published by BNP PARIBAS Economic Research
Head office: 16 boulevard des Italiens – 75009 Paris France / Phone : +33 (0) 1.42.98.12.34
Internet: www.group.bnpparibas.com - www.economic-research.bnpparibas.com
Head of publication : Jean Lemierre / Chief editor: William De Vijlder

BNP PARIBAS

The bank for a changing world