STRUCTURAL INDICATORS. Methodological notes

The publication of STRUCTURAL INDICATORS is divided into three Sections:

I. GDP PER CAPITA AND COMPONENTS

This section presents GDP per capita, at current and constant prices, as well as the decomposition of the latter in three components: (i) Ratio of working-age population to total population; (ii) Employment rate, i.e., the percentage of the employed population over the working age population (iii) Labour productivity, i.e., the rate between the aggregate production and the number of employed workers:

INDICATOR	OBSERVATIONS	SOURCE
GDP per capita in current euros	GDP at current prices and purchasing power parities (PPPs) of the EU 28 per head of population. The population is obtained from the National Accounts.	AMECO
GDP per capita in constant euro	GDP at current prices and purchasing power parities (PPPs) of 2015 per head of population.	AMECO
Population 15-64/Total population	Ratio of working-age population to total population. Series obtained from the European Union Labour Force Survey.	AMECO
Employment rate (%)	Ratio of persons aged 15 to 64 employed to the working-age population. Series obtained from the European Labour Force Survey.	AMECO
Labour productivity (thousands of PPP of 2015 per person employed)	Output per person employed. Calculated as GDP at constant prices and PPPs of 2015 divided by the number of persons employed.	AMECO

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II. TOTAL FACTOR PRODUCTIVITY AND CAPITAL STOCK

This section includes the total factor productivity (TFP) as proxied by the Solow residual (as a proxy of technological change). Also includes capital stock, both physical and human. The physical capital stock is disaggregated, while the human capital stock is corrected for quality.

INDICATOR	OBSERVATIONS	SOURCE
Total factor productivity (index 2015=100)	Variable that measures the technological evolution of an economy. Its variation rate is calculated as the difference between GDP growth in real terms and the respective variation rates of the production factors used (capital and labor) weighted by the relative weight of each of these factors. productive res in GDP.	AMECO
Total capital stock / employment (thousands of euros / person)	Ratio between the total net capital stock of the economy and the total number of employees according to National Accounting. The total capital stock is obtained by the permanent inventory method from the gross fixed capital formation flows (GFCF) and the consumption of fixed capital (CCF), both in constant terms, with base year 2016.	AMECO
Productive capital stock / employment (thousands of euros / person)	The productive capital stock is the sum of the private and public productive capital stock. The ratio is constructed dividing by the number of employed persons, a series obtained from the National Accounts.	Banco de España from AMECO
Private productive capital stock / employment (thousands of euros / person)	The private productive capital stock is obtained using the permanent inventory method, using the private	Banco de España from AMECO

INDICATOR	OBSERVATIONS	SOURCE
	productive GFCF in constant currency as the flow series. A depreciation rate of 8.5%[1] is considered.	
Public capital stock / population (thousands of euros / person)	The public capital stock is obtained using the permanent inventory method, using the public GFCF in constant terms as a flow series. A depreciation rate of 3.5%[1] is considered. The permanent inventory method requires allocating a level of the capital stock in the initial year. This has been estimated assuming that the initial capital stock for each type of capital is calculated as the ratio between the investment of the first period and the depreciation rate.	Banco de España from AMECO
Residential capital stock / population (thousands of euros / person)	The public capital stock is obtained using the permanent inventory method, using the public GFCF in constant terms as the flow series. A depreciation rate of 2%[1] is considered. The permanent inventory method requires assigning a level of the capital stock in the initial year. This has been estimated assuming that the initial capital stock for each type of capital is calculated as the ratio between the investment of the first period and the depreciation rate.	Banco de España from AMECO
Technological capital stock / GDP (%)	The technological capital stock is obtained by accumulating the flow of R&D spending. A depreciation rate of 15% is considered[2].	Banco de España from AMECO

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[1] Depreciation rate taken from Núñez, S. and M. Pérez (2010), which, in turn, are based on the works of Fraumeni (1997) and OECD (1992 and 2001). These authors consider constant depreciation rates both over time and between countries for different sub-aggregates of the capital stock.
[2] Depreciation rate taken from Puente, S., and M. Pérez (2004).

INDICATOR	OBSERVATIONS	SOURCE
Human capital stock (%)	This indicator is a weighted average of the educational level of the working age population.	Banco de España from EUROSTAT
Quality corrected human capital stock (%)	This indicator corrects the human capital stock previously calculated using the quality of the educational system in each country. To make the correction, the results obtained in the OECD's PISA (Program for International Student Assessment) are used.	Banco de España

III. OTHER INDICATORS

This third Section contains some indicators that influence the physical, technological and human capital stocks described in the previous block. This group of variables includes R&D spending, the use of patents, gross fixed capital formation, public spending on education, and investment in venture capital securities. It also includes some indicators of social spending that try to present information on the distribution of economic well-being, as well as the unemployment rate and the dependency rate.

INDICATOR	OBSERVATIONS	SOURCE
R&D expenditure / GDP (%)	Percentage of total R&D expenditure (private and public) over current GDP.	EUROSTAT and AMECO
Public R&D expenditure / GDP (%)	R&D expenditure made by public administrations as a percentage of current GDP.	EUROSTAT and AMECO
Private R&D expenditure / GDP (%)	Sum of R&D spending by companies, universities and non-profit institutions serving households as a percentage of current GDP.	EUROSTAT and AMECO
Patent applications to the EPO/Inhabitants (units per million inhabitants)	Patent applications to the European Patent Office (EPO) per million inhabitants	EUROSTAT

INDICATOR	OBSERVATIONS	SOURCE
Venture capital investment /GDP (%)	El Venture capital is defined as the stock of resources used to finance firms having difficulty in gaining access to other sources of financing during their early or expansion stage. This indicator is expressed as a percentage of current GDP. EUROSTAT has stopped producing this statistic, being the last available year of the 2015 series.	EUROSTAT
Gross fixed capital formation/GDP (%)	Total flow of gross fixed capital formation in the economy in constant euro as a percentage of constant GDP.	AMECO
Private productive GFCF/GDP (%)	The gross formation flow of private productive fixed capital in constant currency is obtained as the total GFCF minus the residential GFCF and minus the public GFCF. All the series that make up this indicator are expressed in constant currency.	Banco de España from AMECO
Public GFCF/GDP (%)	The public GFCF used in this indicator is obtained by applying, to the public GFCF in current currency, a deflator that combines that of capital goods and that of other constructions. GDP is expressed in constant terms.	Banco de España from AMECO
Residential GFCF/GDP (%)	Residential GFCF in constant euro is calculated as the investment in housing plus a certain portion of the investment in other products. GDP is expressed in constant euro.	Banco de España from AMECO
Non-residential construction GBCF/GDP (%)	Non-residential construction GFCF in constant euro is calculated as investment in other construction plus a certain portion of the investment in other products. This indicator includes, among other items, all the	Banco de España from AMECO

INDICATOR	OBSERVATIONS	SOURCE
	investment in infrastructure by the whole economy. GDP is expressed in constant euro.	
Public expenditure on education per 100 inhabitants 16-64 years (thousands of PPP)	Public expenditure data in current terms (as a percentage of GDP) is obtained from Eurostat. To obtain them in constant terms, it is multiplied by the GDP deflator and divided by the public consumption deflator. With this we have the series at constant prices. Then it is multiplied by the GDP in purchasing power parity and divided by the population between 16 and 64 years old.	Banco de España from Eurostat
Life-long learning (%)	Percentage of people between 25 and 64 years of age who have received some type of training in the 4 weeks prior to the Labor Force Survey.	EUROSTAT
Higher studies (%)	Percentage of people between 25 and 39 years old who have completed higher education.	EUROSTAT
Total social expenditure per 100 inhabitants (thousands of PPP)	Sum of spending on health care, social security and housing. The indicator and its components are presented in real terms using the public consumption deflator and in PPS of the last year represented in the tables for the GP. The population used is that estimated in the National Accounts. It includes interventions by public or private bodies aimed at lightening the burden placed on households and individuals by certain risks or needs, called "functions", provided that there is no simultaneous and reciprocal consideration paid by the beneficiary.	Banco de España from EUROSTAT

NOTA METODOLÓGICA

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INDICATOR	OBSERVATIONS	SOURCE
Health expenditure per 100 inhabitants (thousands of PPP)	Includes expenditure on the sickness–health care function (temporary disability and benefits in kind.)	Banco de España from EUROSTAT
Health expenditure per 100 inhabitants (thousands of PPP)	Includes the household-children function income maintenance during maternity, family allowance per dependent child and other money or in-kind benefits), the disability function (disability pension and other money or in-kind benefits), the survivors function and the old-age function (retirement pensions and other benefits.)	Banco de España from EUROSTAT
Public spending on housing per 100 inhabitants (thousands of PPP)	Includes the housing function, which comprises social and other housing rental assistance and house purchase assistance.	Banco de España from EUROSTAT
Unemployment rate (%)	The unemployed as a percentage of the labour force, both series being obtained from the European Labour Force Survey.	EUROSTAT
Dependency ratios (%)	People aged over 65 in proportion to the labour force.	EUROSTAT

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