

Taking the pulse of the Spanish economy's competitiveness: part I

- In this article we analyse the trends in the productivity indicators of the Spanish economy, comparing them with those of other developed economies in order to measure its competitiveness.
- Although productivity has recovered from the steady decline suffered in the first decade of this century, it remains below that of its main European partners in terms of output per hour worked (with the exception of Portugal).
- The Spanish economy's lower productivity is not so much due to its sectoral composition relative to other countries but rather to the fact that its economic sectors are less productive.

Competitiveness is a key factor in a country's economic prosperity. The ups and downs of the business cycle can influence economic growth to a greater or lesser extent. However, over the long term, the fundamental factor that determines an economy's ability to generate wealth and prosperity in a global environment is competitiveness. With this article, we begin a series that will analyse how the competitiveness of the Spanish economy has evolved over time. As we shall see, it suffered a steady decline in the first decade of the millennium, and although it has regained some of the lost ground since then, it still has a long way to go.

How do we measure competitiveness?

A country's competitiveness shows «the degree to which it can produce goods and services with exposure to competition in international markets while maintaining and expanding the real incomes of its individuals over the long term.»¹ A country's competitiveness is therefore determined by a set of institutions, policies and factors that are interrelated and include elements such as the country's human capital, the degree of innovation incorporated into the products and services produced by its companies, the efficiency of their productive and organisational processes, as well as many other factors. Thus, assessing all of these determining factors would clearly be a major undertaking.²

However, it is also possible to measure competitiveness not by assessing its determining factors but rather based on the results arising from it. Under this approach, two types of indicators can help to measure a country's competitiveness:

- **productivity indicators**, and
- **indicators related to the performance of the foreign sector**.

1. See OECD (1992). «Technology and the Economy: the Key Relationships». Paris.

2. The WEF Global Competitiveness Report documents almost a hundred determining factors for competitiveness, which it uses to produce a ranked list of countries. However, it does not allow us to establish how these determining factors are used and combined to increase competitiveness. For further details, see <http://reports.weforum.org/global-competitiveness-report-2018/>.

Greater competitiveness should be related to greater productive efficiency relative to that of other countries and, therefore, greater relative productivity. A competitive country can also be expected to gain more market share than its competitors.³

In this article, we will focus on analysing the trends in the productivity indicators of the Spanish economy and we will compare them to those of other developed economies. We will postpone the analysis of indicators related to the foreign sector for future articles.

Productivity indicators

Productivity measures the degree of efficiency in the use of inputs in a productive process. An increase in productivity, therefore, indicates that fewer inputs are required to produce the same unit of a particular product or service.

The two main indicators for measuring productivity are:

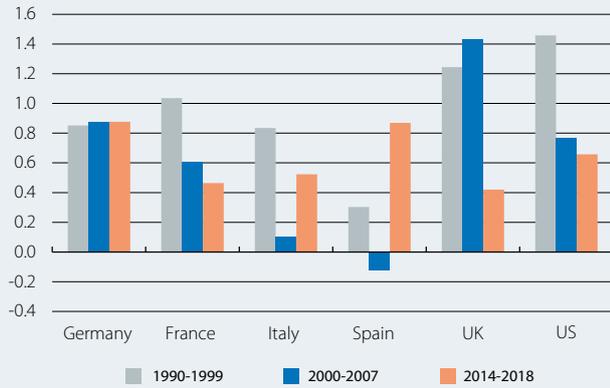
- **Total factor productivity (TFP)**, or the portion of the increase in output that is not explained by the accumulation of production factors (such as capital or employment). The problem with this indicator is that it is difficult to measure.
- **Apparent labour productivity**, or the output per hour worked. This measure is influenced by other factors, such as the capital per worker or human capital, but it has the advantage that more reliable data are available to measure it and it allows comparisons to be made between countries.

The change over time in Spain's productivity relative to that of other developed economies according to the TFP can be seen in the first chart. Between 1990 and 2007, TFP in Spain grew below that of the world's major developed economies. On the other hand, since the start of the economic recovery following the financial crisis, Spain's TFP has managed to grow above that of its main competitors.

3. A country can gain market share in the international market without having increased its relative productivity by introducing new products/services into these markets.

Spain: international comparison of total factor productivity

Average annual growth (%)



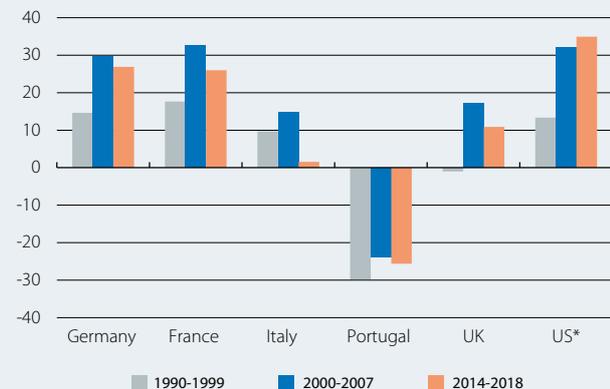
Source: CaixaBank Research, based on data from AMECO.

This indicator, however, cannot be used to directly assess differences in absolute terms in the degree of productivity between countries. Nevertheless, such a comparison can be made if one calculates apparent labour productivity in Spain relative to that of those same other countries. The second chart shows the differential, expressed as a percentage, in output per hour worked between these countries and Spain, adjusted for purchasing power parity.⁴ Two main conclusions can be drawn from the chart:

- Firstly, as reflected in the chart above, Spain's productivity declined relative to other countries between the 1990s and the first decade of this century.
- Secondly, the improvement in productivity since the economic recovery began has allowed to reduce the

Apparent labour productivity

Differential of each country relative to Spain (%)



Note: * Annual average for 2014-2017.

Source: CaixaBank Research, based on data from the OECD.

4. By way of example, the first grey bar in the chart, which refers to Germany, denotes that the output per hour worked in that country between 1990 and 1999 was around 15% higher than in Spain.

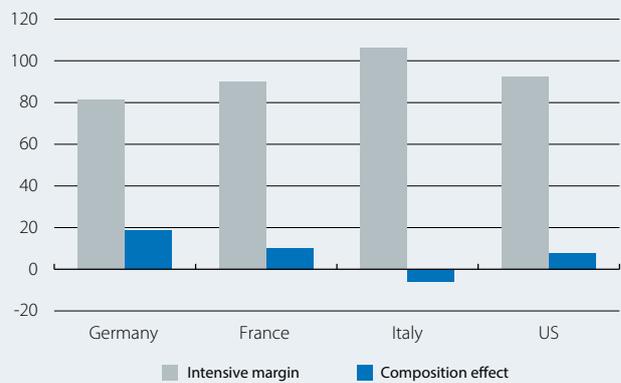
gaps (except for with the US), although there is still a long way to go: Spain remains less productive, in terms of output per hour worked, than these countries in absolute terms (except for Portugal).

Breakdown of the productivity gap between countries

What is the reason for the lower productivity relative to these countries? To investigate this matter, we analyse what portion of the contribution to the gap in apparent labour productivity can be attributed to the intensive margin and what portion is due to the composition effect. By **intensive margin**, we refer to the portion of the gap that can be explained by differences in the productivity of the same sector of the economy between Spain and another country. To calculate this effect, we

Spain: breakdown of the productivity gap

Data for 2015 (%)



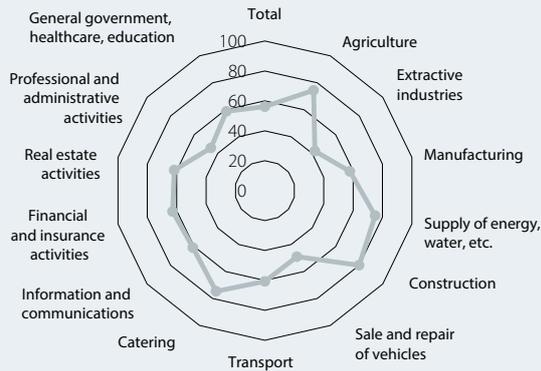
Note: A positive value means that the effect makes a negative contribution to Spain's level of productivity, given that it contributes to widening the gap.

Source: CaixaBank Research, based on data from EU KLEMS.

compare the apparent labour productivity in each sector of the economy between two countries, while keeping the relative weight of that sector in both countries constant. On the other hand, the **composition effect** measures the portion of the gap that can be attributed to the fact that the sectors in question in each country represent a different portion of the total economy. Therefore, a country can be more productive not because its sectors are themselves more productive than those in other countries, but rather because the most productive sectors have a greater weight in the economy as a whole.

The main factor that explains the productivity gap between Spain and the other countries analysed is the intensive margin: i.e. Spain's lower productivity is a phenomenon that is common across the various economic sectors. This is evident in the third chart, in which the productivity gaps between Spain and the other countries have been normalised at 100 and the various contributions to this gap are presented. This

Spain: productivity gap with France by sector
(100 = France)



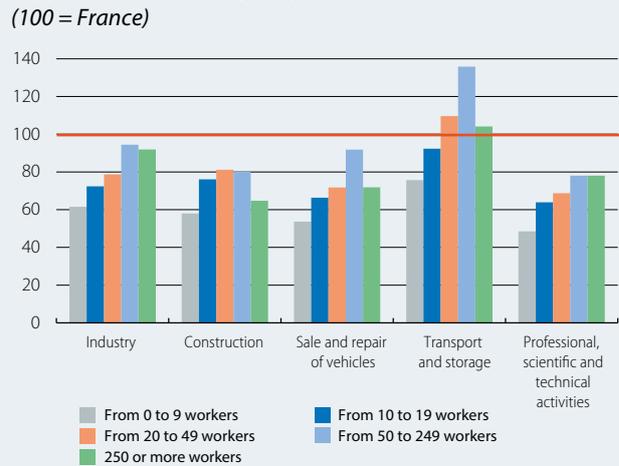
Note: The line shows the productivity of each economic sector in Spain compared to its French equivalent (normalised to a value equal to 100).
Source: CaixaBank Research, based on data from EU KLEMS.

shows how over 80% of the gap is due to the intensive margin.⁵

As such, the productivity problem in Spain is common to all sectors, rather than being specific to any one sector in particular. As shown in the fourth chart, there is a significant productivity gap between Spain and France in each productive sector.⁶ In all sectors, Spain's productivity is lower than that of France, particularly in sectors ranging from professional and scientific activities, to commerce, to the manufacturing industry and even general government.

There are a multitude of causes that lie behind this lower productivity. Nevertheless, it is worth analysing how it relates to the country's business sector. The productivity gap is much greater for small and medium-sized Spanish enterprises than it is for larger companies, as shown in the fifth chart. In each sector, the latter are more like their French counterparts in terms of productivity, which suggests that bigger companies are able to achieve greater efficiency in the use of inputs in the production process.⁷

Spain: productivity gap with France by sector and company size
(100 = France)



Note: The chart shows the productivity of companies of different sizes in each economic sector in Spain compared to their French equivalents (normalised to a value equal to 100).
Source: CaixaBank Research, based on data from Eurostat («Structural business statistics»).

Oriol Carreras and Josep Mestres

5. As an example, in the case of Germany, we see that around 80% of the productivity gap is due to the intensive margin and that only 20% can be explained by the composition effect.

6. The data used to analyse the gap by sector comes from EU KLEMS, whereas the trend over time shown previously was analysed using data from the OECD and corresponds to different time periods, hence the figures do not match exactly.

7. For further details on the interaction between productivity and business size, see C. Guillamón, E. Moral-Benito and S. Puente (2017). «High growth firms in employment and productivity: dynamic interactions and the role of financial constraints?». Working Papers 1718. Bank of Spain.