Orkestra

BASQUE INSTITUTE
OF COMPETITIVENESS
DEUSTO FOUNDATION

THE BASQUE COUNTRY **COMPETITIVENESS REPORT 2018**

Deusto

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Basque Country Competitiveness Report 2018

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Online access of report

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Preface

The desirability to have analyses that are almost permanently updated leads us to implement an important change in the preparation (and we also hope in the use) of the Basque Country Competitiveness Report; which is now published annually rather than every two years.

The following assessment is a concise analysis of the evolution of the main indicators of competitiveness and well-being, through which we compare ourselves with other territories. This work is supported by an online platform which makes it possible to interact with and consult the indicators in real time with the most recent data. We invite you to try it and help us make improvements by sending us your comments.

In the near future, this reflection of the state of competitiveness in the Basque Country will be accompanied by an in-depth analysis of a specific aspect considered critical for ensuring the future of the Basque Country's ability to compete.

The Basque Country Competitiveness Report 2018 has been prepared in a context of achievements in economic and social performance. The Basque economy has bounced back after the deep economic recession that has shaped much of Orkestra's analysis since 2010. One of the missions of this Institute, especially in view of the difficulties that a significant part of society continues to experience on a daily basis, is to continue to analyse the determining factors that define our competitiveness.

The ability to compete sustainably in the long term implies continuing to improve conditions and behaviour that ensure good performance in terms of growth, employment and welfare. The Basque Country has improved in many of the determining factors of competitiveness analysed in this report. However, we are not the only territory to have improved in these parameters. Other territories are also improving, which explains the weakening of the Basque Country's relative position in some of the indicators presented.

We must also note that, although the overall economic outlook is favourable in the short term, it is also very uncertain in the medium to long term. The consistent decisions of some countries that introduce uncertainties and variability, and the likely slowdown, or change, in the economic cycle, can slow down and call into question economic growth.

In this regard, it should also be pointed out that, as we said in our Manifesto for Orkestra's tenth anniversary, we live in an era in which we are faced with major challenges relating to demography, the environment, resources and social cohesion; a historical stage in which geopolitical changes (such as Brexit or the questioning of international trade as it has been developing) can bring around important changes in markets and economic transactions in general.

In this context, the 2018 Competitiveness Report aims to serve as a tool to better understand our strengths and weaknesses, and how our capacity to compete behaves. This work will help us to anticipate and be able to react to new trends and potential threats that may arise in our response to the different challenges we face in the Basque Country according to our Manifesto to ensure the well-being of all people.

The work carried out at Orkestra would not be possible without the work and involvement of all the people who make up Orkestra, or who collaborate in different ways in its work. And, of course, it would not be possible without the invaluable support of our sponsors. We therefore find it only natural to thank the companies and institutions that support us, and the society for which we work.

We are confident that this work is in line with the trust placed in us.

Ignacio Mª Echeberria
Chairman
Orkestra-Basque Institute of Competitiveness
Deusto Foundation

Acknowledgements

This report has been prepared with funding from SPRI, the Basque Business Development Agency of the Basque Government.

The Basque Country Competitiveness Report 2018 has been prepared by a group of people[1] coordinated by Susana Franco. The entire Orkestra[2] team has also participated in different ways, and we thank them for their rigour, dedication and commitment throughout the process. We would also like to thank the members of Orkestra's Board of Directors and Advisory Board, along with the sponsoring institutions for their contributions.

The quantitative analyses that have served as the basis for the preparation of this report could not have been carried out without the collaboration offered by the Basque Statistics Institute (Eustat), Eurostat and Sabi-Informa. Our sincere thanks for all the services offered.

We are also grateful for the collaboration of all the agents who have participated and contributed to generating knowledge as part of the various projects carried out during the last few years.

Orkestra assumes responsibility for any errors or omissions in the content of this Report.

[1] Mari Jose Aranguren, Megan Briggs, Patricia Canto, Aitziber Elola, Ibon Gil de San Vicente, Lorea Larrabeiti, Usue Lorenz, Asier Murciego, Mikel Navarro, Eduardo Sisti, Rakel Vázquez, James R. Wilson, and Agustín Zubillaga

[2] https://www.orkestra.deusto.es/es/acerca-orkestra/equipo

Executive summary

Analysis of territorial competitiveness is important for identifying and implementing the most suitable policies to support socioeconomic development. It is interaction between firms and their environment that generates innovation, wealth and, ultimately, wellbeing. The aim of this analysis of the competitiveness of the Basque Country is to understand what determines the effectiveness of the firms located here to compete and so generate economic and social value. Competitiveness is not an end to itself, but a means of generating wellbeing among the population and a key lever to achieve the Sustainable Development Goals set by the United Nations.

The analysis in the report is structured around the competitiveness framework developed by Orkestra and used in Basque Country Competitiveness Reports since 2011. This evolving framework distinguishes between four levels: (i) ultimate outcomes of territorial competitiveness, reflecting overall goals in terms of citizen wellbeing; (ii) intermediate performance indicators, important in achieving those outcomes; (iii) determinants of competitiveness related to business performance/behaviour, territorial and cluster specialisation, and the quality of the business environment; and (iv) the endowments, or fundamental characteristics of the territory.

The report analyses over 50 indicators across these four levels, using the latest data available to compare the Basque Country with other European regions and countries, including a group of 30 reference regions with similar structural characteristics. The report is accompanied by an online platform that enables users to interact with the report and to develop their own graphics by selecting different time-periods and comparators.

The overall impression from the analysis of the report is of a Basque economy that continues to improve in many areas relative to other European regions, and that is delivering results for its citizens in terms of economic and social wellbeing. The positive evolution of social outcomes suggests that the recovery is proving to be fairly inclusive, but still poor employment and unemployment indicators hint at diverse realities behind the headline figures. Caution is also urged given the strong cyclical conditions in Europe that have accompanied the indicators analysed in recent years. The weakening of these «tailwinds» is likely to have a particularly strong impact on the economy of the Basque Country, due to its areas of specialisation and, in comparison with other European regions, a higher level of indebtedness, greater dependence on external indebtedness and high rates of openness in its economy. More generally there are also major uncertainties ahead related to demographics, the environment, resources, social cohesion, new models of employment relationships and geopolitics.

The relative position of the Basque Country has deteriorated in several indicators, and is a particular concern with regards the group of reference regions. This suggests the need for continual monitoring, analysis and action in several areas. It is important to continue to focus on some of the «weak spots» that are already well-known and particularly evident in small firms in the Basque Country. In general this means continuing to improve in innovation, productivity, internationalisation and strategic investments in key areas of specialisation.

1
Introduction

Analysis of territorial competitiveness is important for identifying and implementing the most suitable policies to support socioeconomic development. Although it is firms and not territories which complete in the global marketplace, the countries, regions and cities or towns where they are located provide many of the elements that influence their ability to compete. In fact, it is interaction between firms and their environment that generates innovation, wealth and, ultimately, wellbeing.[3] The aim of this analysis of the competitiveness of the Basque Country is to understand what determines the effectiveness of the firms located here to compete and so generate economic and social value. Therefore, competitiveness is not an end to itself, but a means of generating wellbeing among the population and a key lever to achieve the Sustainable Development Goals set by the United Nations and adopted by the Basque Government.[4]

The framework for this competitiveness assessment incorporates both social and economic elements

The combination of the most important social and economic elements is shown in Illustration 1, the competitiveness framework which provides the structure for this analysis of competitiveness. This framework was developed by Orkestra as part of the European project known as the European Cluster Observatory. It has been used in the Basque Country Competitiveness Reports produced by Orkestra since 2011 and has also been adapted to analyse competitiveness in different territories. As the illustration shows, this framework is divided into four levels indicating the different factors which determine the territory's competitive performance.

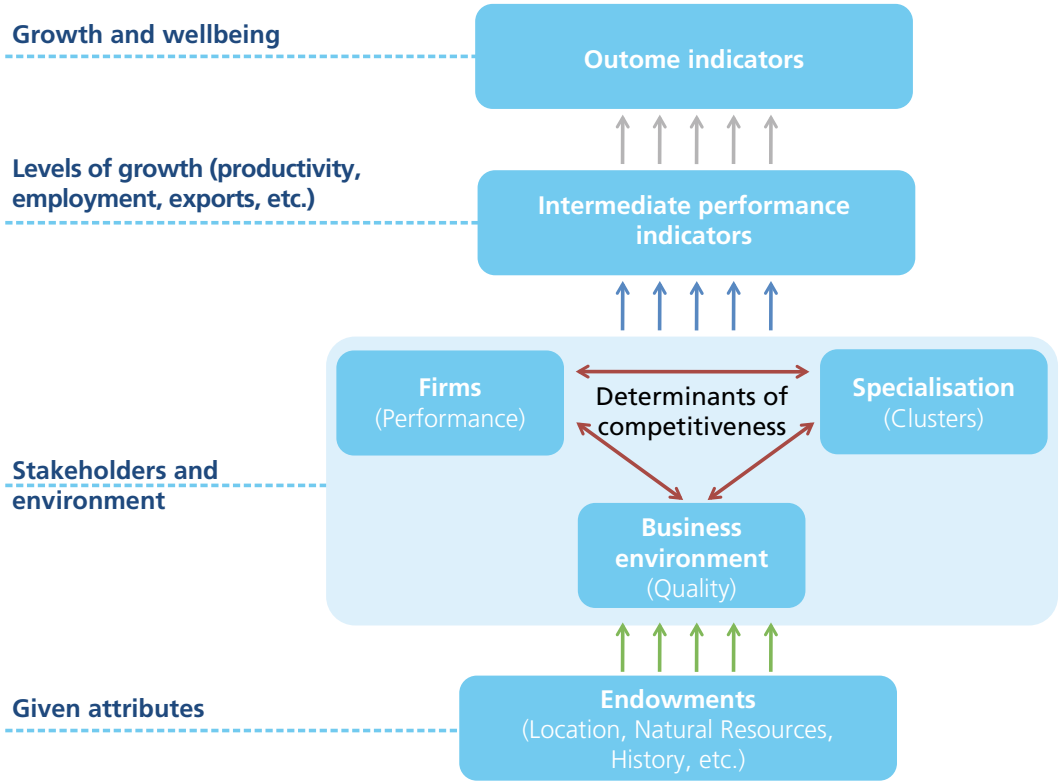
At the top are the outcome indicators, which contain the **overall goals** to be achieved in terms of citizen wellbeing. They include economic indicators, such as per capita income, as well as other, broader elements related to social cohesion.

Below this are the **intermediate performance indicators.** While these are not the overall aims to be achieved by the region, they are important to achieving the final outcomes. They include indicators related to employment, productivity, innovation and foreign trade.

[3] For a selection of recent analyses of these relationships, see Huggins, R. and Thompson, P. (Eds) (2017). *Handbook of Regions and Competitiveness: Contemporary Theories and Perspectives on Economic Development*. Cheltenham, UK: Edward Elgar.

[4] See: Basque Government (2018). *Agenda Euskadi Basque Country 2030.*

ILLUSTRATION 1 Framework for regional competitiveness



Source: Compiled by authors.

It is through the determining factors of competitiveness that policies can have the clearest impact

The third level is made up of the **determinants of competitiveness**, in other words, the elements that affect the results for the two levels above. This level is particularly important because it is where policies can have a more obvious impact. The determinants are divided into three categories: firm performance, territory and cluster specialisation, and quality of the business environment. This final category comprises aspects relating to three of the axes of Porter's diamond (1990)[5]: the quality of the territory's «factors» of production, the «demand» found there, and the «context for firm strategy and rivalry».

And lastly, at the base of the framework, **endowments** refer to certain characteristics of the territory that have an impact on competitiveness, but which can more or less be taken as givens, at least in the medium term (location of the territory, natural resources, size of the region, institutions, etc.).

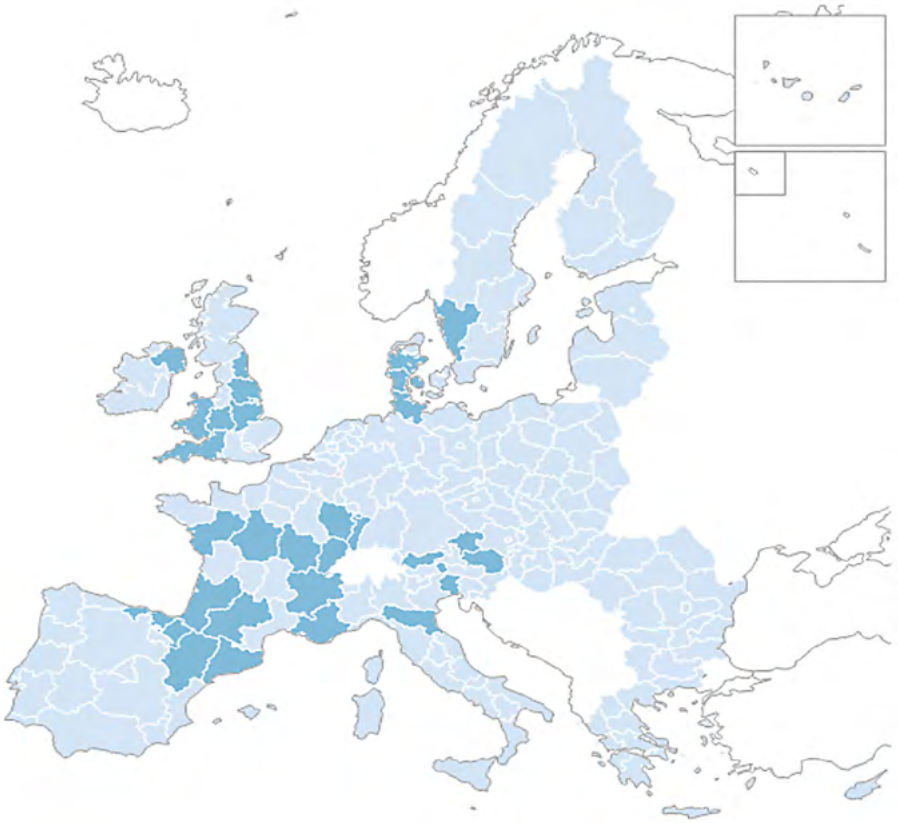
The assessment will show the value of each indicator for the last year for which there are data at the regional level in Europe. We will also indicate how they have changed in comparison to the previous year, in order to thus determine whether the indicator is following a positive or negative trend. However, changes in the indicators may reflect global trends. For this reason, it is important to conduct a comparative analysis. As in previous reports, the relative position of the Basque Country is compared with: the group of 218 European Union regions (UE-28); the 19 Spanish autonomous communities and cities (CCAA); and

[5] Porter, M. E. (1990). *The Competitive Advantage of Nations*. London: The Macmillan Press.

the group made up of the Basque Country and 30 reference regions with similar structural characteristics.

Although the regions are the focal point of comparison, as they are considered more appropriate than countries, they have the disadvantage of updates being delayed longer at the European level. For this reason, if there are more recent data available for the Basque Country, they have been included in the time-based trend graphs, in which the Basque Country is compared with the European average, Spain and Germany (which is one of the most advanced countries).

MAP 1 European regions with similar structural conditions to the Basque Country



Code	Name
ES24	Aragón
ES22	C. F. de Navarra
FR51	Pays de la Loire
UKG	West Midlands
UKK	South West
UKN	Northern Ireland
FR41	Lorraine
UKC	North East
AT22	Steiermark
UKF	East Midlands
UKE	Yorkshire and the Humber
DK04	Midtjylland
ITH5	Emilia-Romagna
DK03	Syddanmark
FR24	Centre
ES13	Cantabria
FR62	Midi-Pyrénées
FR26	Bourgogne
DEF	Schleswig-Holstein
FR43	Franche-Comté
AT33	Tirol
FR61	Aquitaine
ES51	Cataluña
UKL	Wales
FR82	Provence-Alpes-Côte d'Azur
FR71	Rhône-Alpes
FR42	Alsace
ITH4	Friuli-Venezia Giulia
SE23	Västsverige
AT31	Oberösterreich

Source: Compiled by authors.

The group of the 30 reference regions for the Basque Country is shown in Map 1, organised according to the distance separating them from the Basque Country. This is somewhat different from previous reports, because the methodology used to identify them has been updated.[6] The identification is based on elements located at the base of the analytical framework and between components of specialisation. Without necessarily being good or bad per se, they influence intermediate performance and final outcomes. They are also difficult to change in the short term, as they are

The Basque Country is compared with 30 reference regions with similar structural conditions

[6] For details of the methodology, please see the technical report that accompanies this report.

natural characteristics or the result of long historical processes. Therefore, if the aim is to learn from others, it makes sense to compare ourselves with regions that have similar characteristics, as the same corporate behaviour or efforts to develop a favourable environment would have different results when applied in very different regions. The characterisation of the Basque Country with respect to these structural elements is presented in section 5 of this report.

2
Final outcomes

Table 1 summarises the position of the Basque Country with regard to final outcome indicators. As usual, the Basque Country maintains a very favourable position with regard to the GDP per capita indicator (for which the latest available figures are from 2016), improving in both value and ranking compared to the previous year.

The Basque Country is in a very favourable position with regards to the per capita GDP indicator

TABLE 1 Status of the Basque Country in terms of the final outcome indicators

Indicator	Values		Ranking in comparison with…					
			all European regions		reference regions		Spanish autonomous communities	
	Most recent	1 year before	Most recent	Δ	Most recent	Δ	Most recent	Δ
GDP per capita (PPP) (2016)	35,300	34,800	34	2	5	1	2	0
Household disposable income per capita (PPP) (2015)	18,000	17,800	88	–1	27	0	1	0
Long-term unemployment (% working pop.) (2017)	5.5	6.5	166	0	30	–1	5	–1
NEET rate (%) (2017)	6.4	7.5	37	13	7	2	1	0
Risk of poverty rate (%) (2016)	9.0	10.9	11	11	1	1	1	1
Life satisfaction rate (0–10) (2016) (*)	7.5	7.2	65	10	12	3	5	2

Source: Eurostat and European Social Survey (ESS). Compiled by authors.

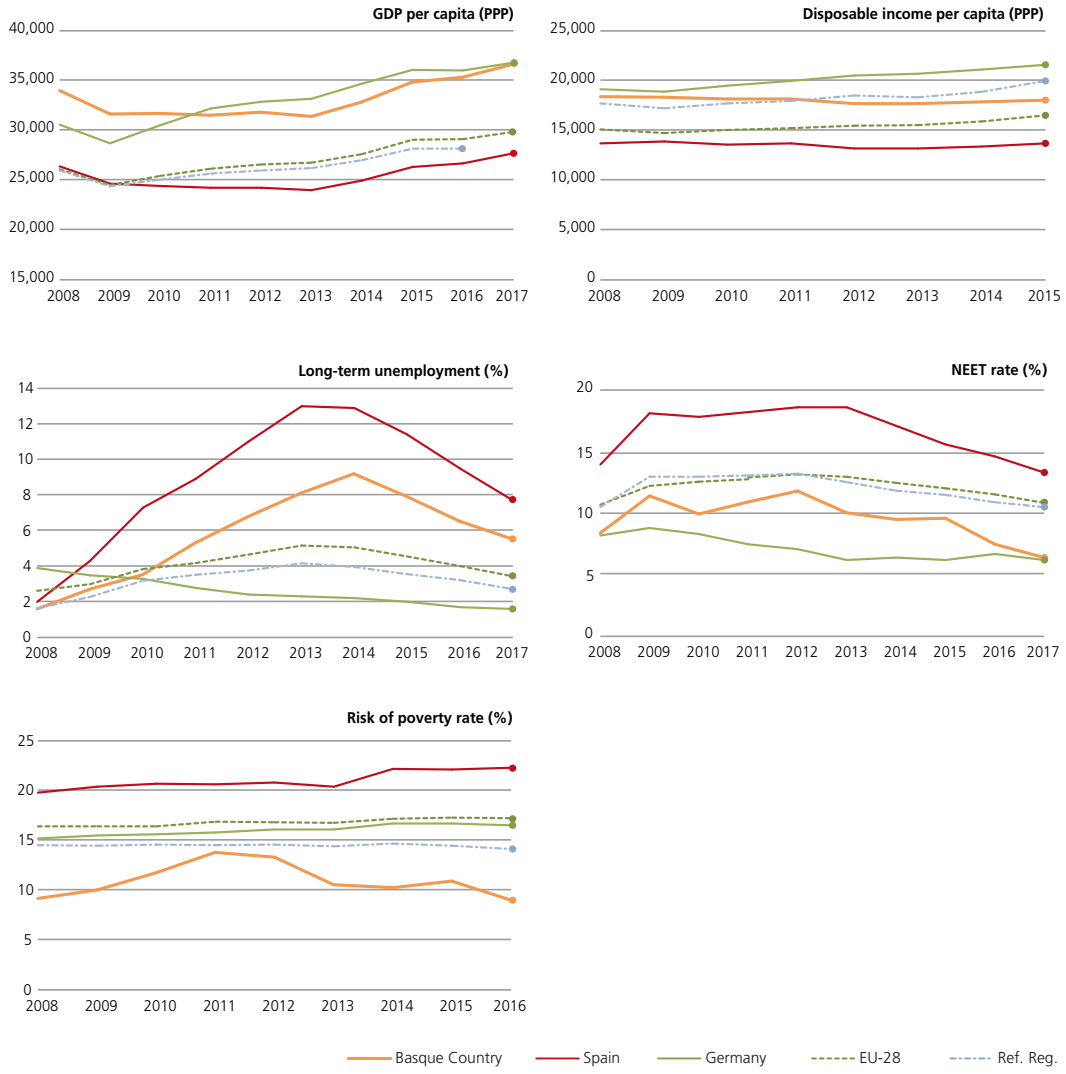
NB: The rankings have been compiled based on 218 European regions, except when no data were available (*217), the Basque Country and the group of 30 reference regions, and the 19 Spanish autonomous communities and cities. The life satisfaction rate indicator is compared with two years earlier, as the ESS is conducted every two years.

GDP measures what is produced within the territory, but this production is not always reflected in the population's wellbeing for various reasons: generating this production may have involved non-resident factors of production (both workers and capital) which take part in the income generated (for example, residents of Cantabria who work in Bizkaia); in the interests of solidarity or for other reasons, some of the income may be transferred to other territories (to either other autonomous communities or

developing countries); or the government and firms may appropriate part of the income to reduce their debt. For this reason, the OECD and Eurostat[7] consider per capita household disposable income to be a much more suitable indicator for measuring the development of the population's level of wellbeing. When disposable income is considered, the Basque Country's position is clearly worse, especially compared to the reference regions, and the statistics do not provide information to identify which of the explanatory factors discussed earlier is most significant. Additionally, in contrast to the situation in Germany, the EU-28 and the reference regions, the increase in the Basque Country's level of GDP per capita in recent years have not raised its per capita household disposable income (see Graph 1). This may be due to the fact that 2015 is the last year for which we have data on disposable income, and in the Basque Country and Spain, the economic recovery took place later than in the EU as a whole.

But the increase in GDP per capita in the Basque Country has not been reflected in the disposable income of households per capita

GRAPH 1 Variation in final outcome indicators



Source: Eurostat. Compiled by authors.

[7] On this subject, see the OECD publication *How's life? 2017: Measuring Well-being* and the Eurostat statistical annex *SDG 10 – Reduced inequalities* (statistical annex).

The level of long-term unemployment is another indicator in which the Basque Country has much more unemployment than Spain, but it has been trending positively in absolute terms in recent years (down from 6.5 to 5.5 percent from 2016 to 2017). However, it is still in a poor position in relative terms compared to Europe. As Graph 1 shows, this is due to the significant increase at the start of the crisis. Although it has made a recovery in absolute terms since 2015, it is still quite a bit higher than the average for the EU-28 and the reference regions, and even more than Germany.

Despite the positive evolution in recent years, the Basque Country still holds low positions in the long-term unemployment rankings

In contrast, in both absolute and relative terms, the NEET (percentage of young people aged 15–24 who are not in education, employment or training, which is included as a final outcome indicator because it is an indication of unemployment, probably undesired, among the youth population) and risk of poverty rates are very positive. The first, whose values have dropped in recent years, approaching those of Germany, demonstrates that young people are continuing to educate themselves in the event that they do not want to or cannot work. The second indicates that, despite what was mentioned above about disposable income, there is a transfer of resources to the most disadvantaged strata of the population, making it possible for the Basque Country to rank high among European regions in terms of lower poverty rates. This would seem to indicate that income is distributed in a more uniform fashion with less inequality, as confirmed by the indicators shown in Table 2, where we can see that the Basque Country has better values in terms of the Gini coefficient (which measures inequality on a scale from 0, perfect equality, to 100, maximum inequality), the S80/S20 index (which measures the ratio between the 20% of people with the highest equivalent per capita income in the income distribution and the 20% of people with the lowest income), and the percentage of total income received by the 10% poorest among the population.

TABLE 2 Comparative inequality indicators (%). 2015–2016

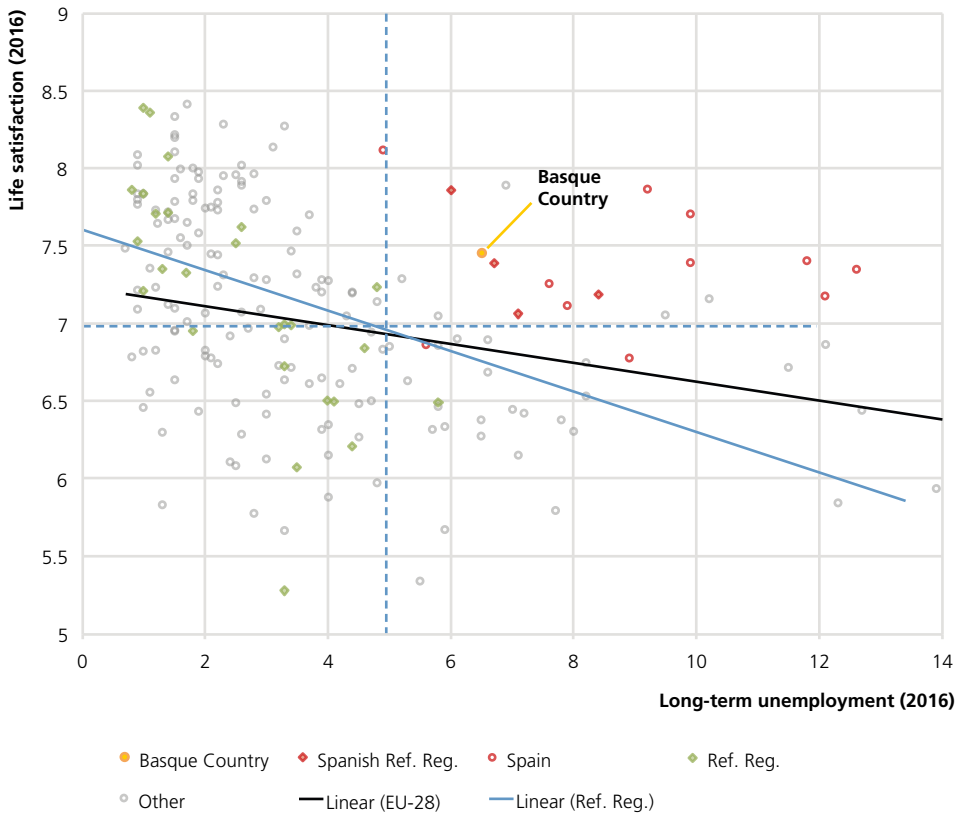
	Gini coefficient	S80/S20 Index	Total income of the poorest 10%
Basque Country	25.8	3.9	3.5
Spain	34.6	6.9	1.7
Germany	30.1	4.8	2.9
EU-28	31.0	5.2	2.8

Source: Eustat (Basque Statistics Office).

The Basque Country has lower rates of risk of poverty and inequality than other territories, and a better perception of the rate of satisfaction with life

Lastly, as regards the subjective level of wellbeing, the life satisfaction rate values estimated by the European Social Survey indicate that improvements observed in the objective final outcome indicators are also being perceived as a subjective improvement in quality of life. Thus, in Graph 2 we see, for example, that the life satisfaction rate inversely correlates with the level of long-term unemployment. This is even more marked in the reference regions than in the European regions as a whole. In the case of the Basque Country, satisfaction levels are above what would correspond to the level of long-term unemployment.

GRAPH 2 Long-term unemployment rate (%) versus life satisfaction (scale 0–10) (2016)



Source: Eurostat and European Social Survey. Compiled by authors.

In general, the final results of the Basque Country have improved significantly

It can therefore be concluded that the final outcomes have improved significantly. Social indicators indicate that the needs of the most disadvantaged strata are being met, with lower poverty and inequality rates than in other territories, as well as a high positive perception as regards life satisfaction rates. Although in terms of disposable income, the results are worse than in other regions, this is something which may have improved in more recent years and should be monitored, as it is a more suitable measure of household wellbeing than GDP per capita. The most problematic indicator is long-term unemployment, as despite the reduction achieved, the Basque Country still ranks comparatively low in Europe, and especially when compared with the reference regions.

3
Intermediate performance

We will now discuss the intermediate performance indicators, those which lead to achieving the final outcomes presented in the previous section. These indicators, which are shown in Table 3 and Graph 3, include elements related to employment and unemployment, productivity, innovation outcomes and, compared only with countries and the European average, international trade.

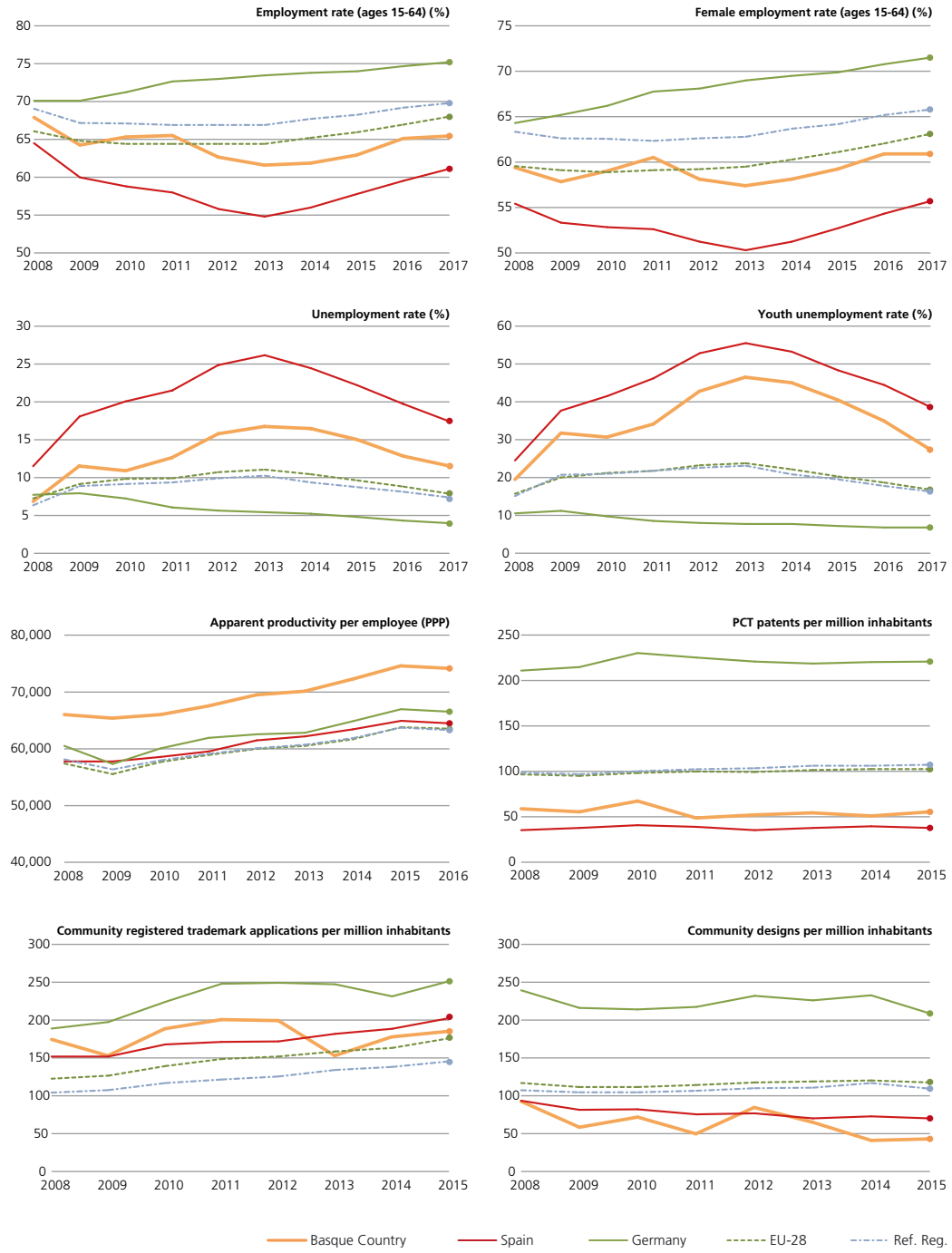
TABLE 3 Status of the Basque Country in terms of the intermediate performance indicators

Indicator	Values		Ranking in comparison with ...					
			all European regions		reference regions		Spanish autonomous communities	
	Most recent	1 year before	Most recent	Δ	Most recent	Δ	Most recent	Δ
Employment rate (2017)	65.4	65.1	133	–13	26	–2	7	–2
Female employment rate (2017)	60.9	60.9	120	–5	27	0	4	0
Unemployment rate (2017)	11.3	12.6	168	1	29	0	2	0
Youth unemployment rate (2017)	27.3	34.9	162	12	27	3	1	3
Apparent productivity per employee (PPP) (2016)	75,310	75,898	21	–1	1	0	1	0
PCT patents per million inhabitants (2015)	55.4	50.7	92	4	25	2	3	1
Community registered trademark applications per million inhabitants (2015)	184.8	177.7	61	–6	13	–1	8	0
Community designs per million inhabitants (2015)	43.0	41.1	117	14	23	2	7	1
Sales from products that are new to the company or market (index) (2014)	0.64	0.34	10	33	7	4	1	4

Source: Eurostat, OECD RegPat and Regional Innovation Scoreboard. Compiled by authors.

NB: The rankings have been compiled based on 218 European regions, except when no data were available (*204), the Basque Country and the group of 30 reference regions, and the 19 Spanish autonomous communities and cities. The products that are new to the firm or market indicator is the normalised value provided by the Regional Innovation Scoreboard, which is compared with two years earlier, as the Community Innovation Survey on which the data are based is conducted every two years.

GRAPH 3 Variation in intermediate performance indicators



Source: Eurostat and OECD REGPAT. Compiled by authors.

3.1 Employment and unemployment

Total and female employment rates in the Basque Country are below the European average

As regards the indicators related to employment rates, we see a slight upturn in the total employment rate in the last year. However, as this was smaller than in other regions, the Basque Country lost positions in the ranking for this indicator compared with all territories. The female employment rate is also sluggish (with lower values than the general employment rate), losing positions in comparison with European

regions as a whole. As a result of this, the Basque Country is in a medium-to-low position when compared with European regions as a whole, and trailing behind in comparison with the reference regions, although better positioned within Spain as a whole. As the trend graphs show, the results for the last year seem to break with the trend in previous years, in which there had been an increase in these indicators, which, having fallen below the European average starting in 2012, were approaching that level. In comparison with the reference regions, we can see that both the total and female employment rates for the Basque Country remain consistently below the European average. There is therefore some potential for an increase in employment which may reach that of other territories, especially in the case of female employment.

Raising employment depends on both increasing the labour force participation rate and employing the people who take part in the labour market. For this reason, it is of interest to analyse what is happening with unemployment rates. We present both the total unemployment rate and that which affects the youngest group of people, between the ages of 15 and 24 (which is more than double that of the population as a whole). Both improved in the last year in both absolute and relative terms, and the Basque Country remains among the autonomous communities with the lowest unemployment levels. Despite this, the Basque Country's position in the European rankings is still worse than in the case of employment indicators, indicating that the percentage of people who form part of the working population is greater but they are not obtaining work. This is due to the increase in unemployment rates that occurred until the year 2013, and which has been dropping since then. However, it has not achieved the levels of the European average and the reference regions, which are very similar. In these territories, although they have much lower levels, youth job creation also represents a challenge, as the youth unemployment rate (around 16%) is also double that of the population as a whole.

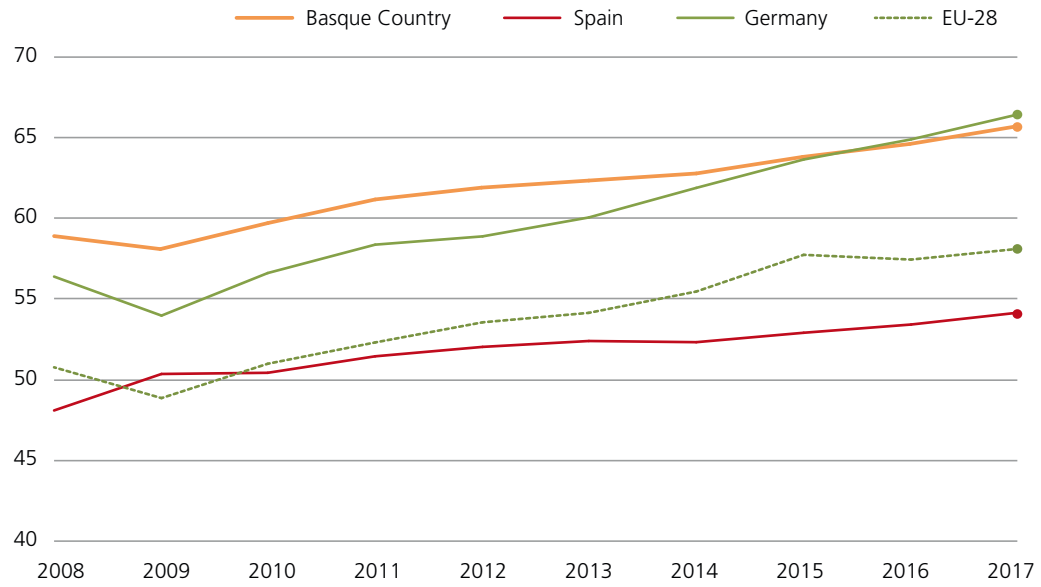
Despite the significant reduction, unemployment in the Basque Country is still higher than in the whole of Europe and the reference regions

3.2 Productivity

The results achieved in terms of productivity constitute another intermediate performance indicator, as improving this area is a requirement in order to be competitive. Table 1 and Graph 3 show the values and trends in apparent productivity per employee, in purchasing power parity terms up to the year 2016, the last year available from Eurostat for the regions. In the last year, we see a slight drop in productivity in the Basque Country, something which, as the trend graph shows, also occurred in the rest of the territories. As a result, the Basque Country remains high in the rankings. If we compare productivity values in constant terms to counteract the effects of inflation, and use the Eustat (Basque Statistics Office) data to also include the figures available for 2017, we can see that productivity in the Basque Country increased between the years 2015 and 2016, as well as in 2017 (see Graph 4). It remains far above the European average and even more than the Spanish average, although it was slightly surpassed by Germany's average values in the last two years. One positive aspect is that even though some years ago, increases in productivity were primarily due to production remaining steady with job cuts, in recent years, it has been accompanied by net increases in employment. This will be discussed in greater depth in section 4.1.3, when we analyse trends in labour costs and their relationship to productivity.

Productivity has increased in recent years in the Basque Country and is well above the European average

GRAPH 4 Apparent productivity per employee (thousand 2015 constant €), 2008–2017



Source: Eurostat and Eustat (Basque Statistics Office). Compiled by authors.

3.3 Innovation

The positive performance of the Basque Country in innovation inputs (R&D expenditure) is not reflected in the output obtained (patents)

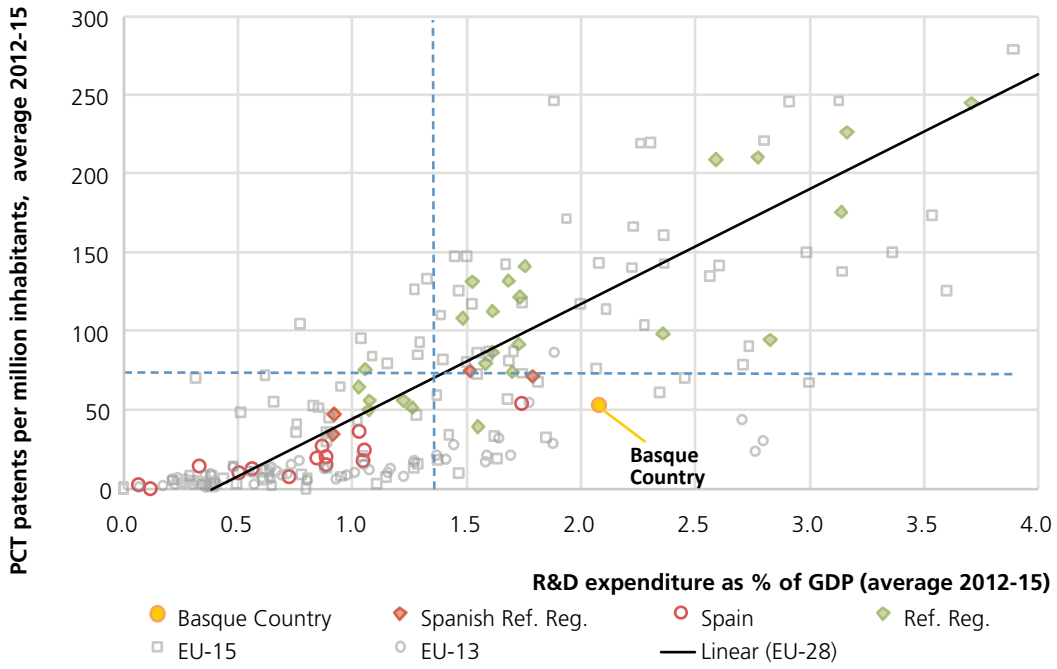
As regards the indicators which measure innovation performance, the one most commonly used to measure technological output is patents per million inhabitants, despite the limitations this entails (for example, not everything that is patented is commercially exploited or takes the form of a true innovation.) As shown in Table 1, the Basque Country's position with regard to this indicator stands out positively when compared to the Spanish autonomous communities and cities, but it is in an intermediate position as regards the European regions as a whole, and at the bottom of the ranking among reference regions. As the trend graph shows, the number of patents per capita is a considerable distance from Germany's value, as well as the EU-28 average and the reference regions. This is even the case when, as we can see in Graph 5, R&D expenditure (as a percentage of GDP) for the 2012–2015 period was above the average for European regions. In other words, although the Basque Country is performing well in terms of innovation inputs (R&D expenditure), the output obtained (patents) is not as good. As we can see in this graph, the output per unit of input (R&D expenditure) is not only below the EU-28 average, but it is also less than the average for Spanish regions (as it is some distance from the latter in the line of best fit between R&D expenditure and patents).

Innovation output is also measured using the applications for registered trademarks and community designs indicators, which may reflect non-technological innovations. The Basque Country particularly stands out in the applications for registered trademarks indicator when compared to both the European regions as a whole and the reference regions (although it experienced a decline in these rankings in the last year). For this indicator, it comes in above the EU-28 average, but below Germany and the Spanish average. As regards designs, the Basque Country is not as well posi-

tioned, and despite having gained positions in the last year, the value is quite a bit lower than that for the other territories under consideration.

The community design indicator does not perform well, however two indicators that do perform well are the community trademark applications and sales from products that are new

GRAPH 5 PCT patents per million inhabitants and R&D expenditure (% GDP) (average 2012–2015)



Source: Eurostat and OECD REGPAT. Compiled by authors.

NB: The blue dashed lines indicate the average values for all EU regions. There are 11 regions with over 300 PCT patents per million inhabitants and/or R&D expenditure greater than 4% of GDP.

Another aspect used to measure innovation performance is the percentage of sales that come from products that are new to the firm or the market, as this makes it possible to analyse to what extent innovation translates into better sales. It supplements the previous indicators, which can be affected by differences with regard to regulation or traditional practice in the area of intellectual property protection. The data for this sales indicator come from the last two editions of the Regional Innovation Scoreboard, which only provides normalised data and has an even longer delay than the previous data, as they are based on the Community Innovation Survey for 2014 (in the RIS for 2017), and 2012 in the edition for the previous year. Even so, they indicate a strong performance, with the Basque Country in a very good position in all three rankings, moving up compared to its position two years earlier. However, it must be borne in mind that these sales do not only include totally new products, but can also reflect the dissemination of technology among firms.

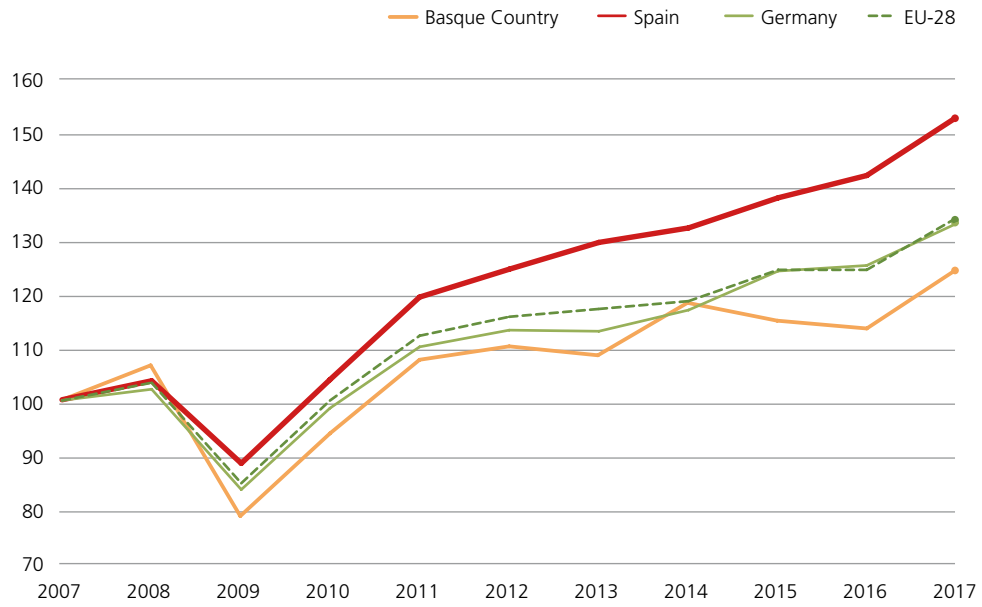
3.4 Exports

The comparison of the intermediate performance indicators is supplemented by a more detailed analysis of exports. As Graph 6 shows, although after 2010 the Basque Country's foreign exports reached the value they had had before the crisis, in most years, the nominal growth of Basque exports remains below that of the other territories included in the graph. However, in 2017 we see a significant change in the

Against the backdrop of a strong increase in domestic demand, Basque exports grew faster than those of other territories in 2017

performance of Basque exports: from the economy with the worse progress over the period as a whole, it becomes the economy with the biggest growth in the last year (up 10.5% compared to exports for 2016). It is possible that this is partially related to the Basque economy's specialisation in sectors which are more dependent on the economic cycle, so that in the year when the European economy reports the best performance, this creates more favourable conditions for Basque exports. In any event, it is positive that, with Spain's strong growth in domestic demand in 2017, Basque firms did not concentrate on the Spanish market and demonstrated such positive export performance.

GRAPH 6 Variation in export value, valued in euros (2007 = 100)



Source: Unctad and Eustat (Basque Statistics Office). Compiled by authors.

There are a relatively high number of exporting companies in the Basque Country, with a relatively small average export size, although the percentage of regular exporters is increasing

In order to understand export behaviour, Table 4 shows the characteristics of exporters and how they have changed since 2007. The number of exporters in the Basque Country is relatively high (more than 16,000 firms). They account for over 22% of all Basque firms with paid employees and 10% of all Spanish exporters. The average amount of exports by Basque firms, which in the past was higher than the Spanish average, is now lower. This can be explained by the fact that the sharp growth in the number of Basque exporters has been particularly concentrated among those that export less than €50,000. These small exporters account for 80% of all Basque exporters, but just 0.2% of export value.

The increase in the number of Basque exporters due to the entry of smaller actors is positive, because it lays the foundations for future export increases: as a learning process takes place in the international market, the value exported by each agent will increase. To this effect, it is positive that the percentage of regular exporters (those that have had exports over the past four years in a row), which dropped between 2007 and 2012, has been growing since then. In other words, although on average, Basque exporters move smaller volumes, this has not prevented the activity from becoming normal and the percentage of regular exporters from growing considerably.

TABLE 4 Profile of Basque exporters compared to Spanish

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Indicators linked to the number of exporters	No. of exporters	6,837	7,171	7,162	7,479	11,399	13,180	13,547	13,923	14,461	14,831	16,151
	% Spanish firms	7.0	7.1	6.7	6.8	9.3	9.6	9.0	9.4	9.8	10.0	10.0
	% total firms with paid employees		8.5	8.7	9.3	14.7	17.3	17.6	18.6	19.6	19.5	22.3
	% firms with over €50,000 in exports	40.6	40.4	37.3	37.9	25.3	23.3	22.8	22.6	21.0	20.7	19.5
	% Spanish firms with over €50,000 in exports	7.8	8.2	7.9	8.1	8.0	8.1	7.9	8.0	7.9	8.0	8.2
	% regular exporters, Basque Country	37.5	35.6	38.2	36.4	23.0	20.4	21.7	31.6	32.2	32.8	30.8
	% regular exporters, Spain	40.2	39.1	36.5	35.4	30.3	27.9	27.2	31.0	32.4	33.5	31.3
Indicators linked to export value	Value of exports, Basque Country (million €)	19,072	20,279	14,942	17,875	20,487	20,971	20,631	22,501	21,866	21,615	23,860
	Value of exports, Basque Country (% Spain)	10.3	10.7	9.3	9.6	9.5	9.3	8.7	9.4	8.8	8.4	8.6
	Average value of exports per firm, BC (thousand €)	2,790	2,828	2,086	2,390	1,797	1,591	1,523	1,616	1,512	1,457	1,477
	Average value of exports per firm, Spain (thousand €)	1,899	1,866	1,486	1,708	1,748	1,644	1,560	1,627	1,695	1,725	1,716
	% exports, firms with over €50,000 in exports	99.8	99.8	99.7	99.7	99.8	99.8	99.8	99.8	99.8	99.8	99.8
	% exports, 5 largest, Basque Country	23	23	22	21	23	23	21	24	23	25	26
	% exports, 25 largest, Basque Country	43	42	39	43	43	43	41	44	43	44	45
	% exports, 5 largest, Spain	11	10	11	10	9	10	10	10	10	11	11
	% exports, 25 largest, Spain	25	24	23	23	23	24	25	25	25	25	25
	% exports, regular exporters, Basque Country	92	92	93	91	93	92	93	91	93	94	96
	% exports, regular exporters, Spain	90	90	92	91	91	91	92	93	93	94	95

Source: ICEX (Spanish Institute for Foreign Trade) and INE (National Statistics Institute). Compiled by authors.

3.5 Summary of intermediate performance indicators

To summarise the intermediate performance indicators, it should be pointed out that, while significant progress has been made in reducing unemployment, the Basque Country has not yet returned to pre-crisis levels. Therefore, although the levels are much better than in the rest of Spain, the situation is worse than in Europe as a whole, the reference regions and Germany. Creating more jobs (especially female and youth employment) thus remains a challenge. In recent years, it has also been demonstrated that the Basque Country can maintain high levels of productivity not only by maintaining production and reducing employment, but also through job creation which generates high production levels. Thus, productivity levels remain much higher than the European and Spanish average.

As regards innovation outcomes, which are necessary to continue increasing productivity in the future, the results are uneven. We are not seeing good results in the traditional patent indicator of innovation performance in technology (although they have improved) and it does not seem to match the high levels of input (R&D expenditure). We are also not seeing good results in one of the indicators that may reflect non-technological innovation (community designs), but applications for registered trademarks are doing well. However, it does appear that firms recognise that innovations generate a large percentage of their sales, although it is not clear whether this is from the introduction of radical innovations or the dissemination of technology or adoption by firms from existing products.

We also see a significant increase in exports in the last year, growing stronger despite the increase in domestic demand in Spain, with a relatively high number of firms that move small volumes but are increasing the base of regular exporters.

4
Determinants of competitiveness

The determinants of competitiveness are the most critical elements of the theoretical framework presented in Illustration 1, as they are the factors which affect the performance of a territory in terms of the outcomes (final and intermediate) analysed in the previous sections. Additionally, whereas public policies cannot usually directly impact outcome indicators,[8] it is still possible to reinforce the factors which underpin these outcomes.

The theoretical framework identifies three groups of determinants of competitiveness: those associated with firm performance, those associated with the structure of clusters and groupings of related activities in the economy, and those associated with the business environment in general. Although it would be possible to think of many potentially interesting elements in each one of these groups, the available information is normally limited for the European regions as a whole. The aim of this section is to focus the analysis on certain aspects which are particularly significant and for which there exist available data for regional comparison, accompany them with other analyses specific to the Basque Country without a regional comparison, and present an overview in order to learn how the Basque Country is positioned in comparison with these other regions.

4.1 Firm performance

4.1.1 Innovation inputs

As we can see in Table 5, the firm performance indicators available at a regional level are very limited and are limited to performance relating to R&D, in both personnel and expenditure. Additionally, they are only available up to 2015, year in which we see a slight drop in the Basque Country in values compared to the previous year. In the case of expenditure, this also meant a slight drop in the rankings. Although progress that year was slightly negative, it should be noted that the Basque Country was still at the top of the ranking in the Spanish comparison, in a very high position among European regions as a whole and in a medium-to-high position with regard to the reference regions. However, it should be taken into account that these

Despite the negative evolution experienced in recent years, the Basque Country is well positioned in terms of personnel and R&D expenditure

[8] Among the outcome indicators considered, disposable income per capita is in fact directly influenced by the effect of valuation and transfers.

figures include the R&D personnel and expenditure for technology centres and CRCs, thus slightly distorting the comparison.

TABLE 5 Status of the Basque Country in terms of the business performance indicators

Indicator	Values		Ranking in comparison with ...					
			all European regions		reference regions		Spanish autonomous communities	
	Most recent	1 year before	Most recent	Δ	Most recent	Δ	Most recent	Δ
Firm R&D personnel (% employment) (2015)	1.42	1.46	11	0	4	0	1	0
Firm R&D expenditure (% GDP) (2015)	1.41	1.53	39	–4	12	–3	1	0
SMEs introducing product or process innovations (index) (2014) (*)	0.35	0.37	134	0	25	0	2	0
SMEs introducing marketing or organisational innovations (index) (2014) (*)	0.26	0.20	146	5	29	–1	8	–5

Source: Eurostat and Regional Innovation Scoreboard. Compiled by authors.

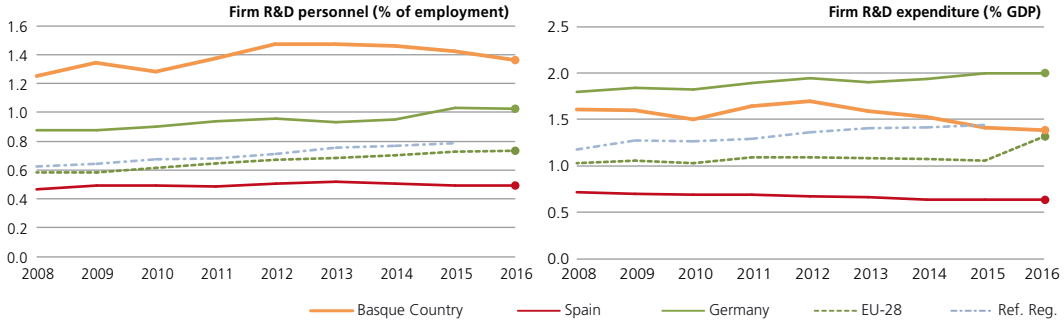
NB: The rankings have been compiled based on 218 European regions, except when no data were available (*204), the Basque Country and the group of 30 reference regions, and the 19 Spanish autonomous communities and cities. The indicators for SMEs that introduce innovations are normalised values provided by the Regional Innovation Scoreboard, which is compared with two years earlier, as the Community Innovation Survey on which the data are based is conducted every two years.

In order to obtain a somewhat more recent perspective, in Graph 7 and the subsequent trend graphs for R&D, we have included values for 2016, available from Eurostat for countries and from Eustat (Basque Statistics Office) for the Basque Country.[9] It is thus possible to confirm that the personnel figures for the Basque Country are much higher than in the rest of the territories, although they continued to decline slightly in 2016. The growth observed in 2011 and 2012 indicates that this type of employment did not drop to the same extent as it did in the rest of the economy, but this growth trend was cut short in 2013. The same change in trend can also be observed in R&D expenditure, which is increasingly moving away from the values for Germany, which are quite a bit higher. They were exceeded by the average for the reference regions in 2015 and in 2016 they were very close (although still slightly higher) to the EU-28 average, which saw a large increase in business R&D expenditure that year. [10]

[9] Because the Eurostat and Eustat data do not precisely coincide, the value for the Basque Country was calculated by applying the growth rate for the year 2015–2016 from the Eustat data to the value for 2015 from Eurostat.

[10] However, as indicated in the 2018 Innobasque Innovation Report and can be deduced from conversations with various firms and actors in the Basque innovation system, it appears that 2017 brought somewhat of a recovery in R&D expenditure in this community. Therefore, although it has been delayed, the economic recovery has begun to reach the field of R&D.

GRAPH 7 Variation in business performance indicators



Source: Eurostat. Compiled by authors.

Good R&D expenditure and personnel indicators do not seem to apply to most SMEs

As regards the innovation performance of SMEs, the normalised values in Table 5 are not necessarily comparable from one year to the next. What we can determine is that both technological innovation (product and process) and non-technological innovation (marketing and organisation) rank in a medium-to-low position in comparison with European regions as a whole and a low position compared to the reference regions. Although in the case of non-technological innovation, there seems to have been a slight improvement in comparison with Europe, the Basque Country has lost positions in comparison with the reference regions and even in the context of the Spanish autonomous communities and cities. These results seems to indicate that the good indicators for R&D expenditure and personnel do not appear to apply to the majority of SMEs, as those that state that they do engage in innovation are comparatively fewer than in Europe.

4.1.2 Business finance

The analysis of business performance around R&D is supplemented by an analysis of finance, for which there are no disaggregated indicators at the regional level in Europe. However, it has been possible for Orkestra to calculate these for the Basque Country, the reference regions in Spain and some European countries. This is an essential element for the competitiveness of firms. Firstly, a lack of access to finance can limit the growth and survival of firms. Secondly, financing is a dimension which is being increasingly incorporated into firms' business models, as a value proposition for customers. For this reason, the structure of a firm's financing impacts its capacity to implement its business strategies and the capacity of the territory to compete.

4.1.2.1 The status of Basque firms in comparison with the situation in Spain

During the recent crisis, which brought a downswing in demand and limited access to finance, the excessive debt carried by some firms jeopardised their continued existence. Today the situation is very different. Demand has recovered and liquidity is available. But despite the improvement in the overall situation and the availability of low-cost financing, firms are being cautious when it comes to increasing their debt level.

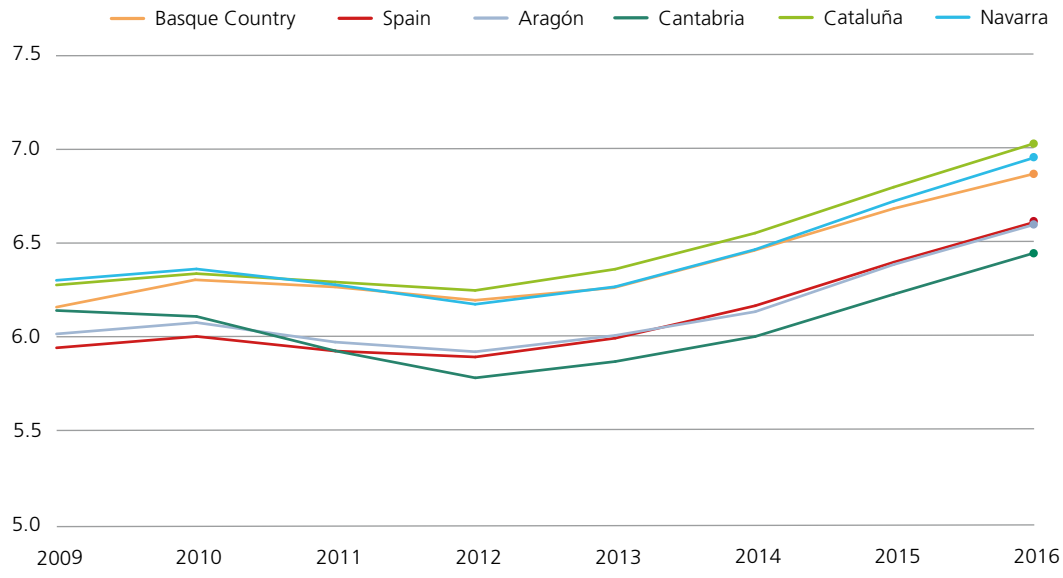
Basque companies present a solid financial situation

Orkestra recently analysed the economic and financial trends and position of Basque firms for the 2008–2016 period and compared it with Spain.[11] This analysis shows that Basque firms have increased the share of their equity and reduced the share of their financial debt. This process, which has also taken place in Spain as a whole, makes firms stronger. In contrast, although operating profit in comparison to turnover has made good progress since 2013, it has not returned to pre-crisis levels in the Basque Country, whereas it has done so in Spain. Lastly, thanks to the decrease in indebtedness levels and the cost of debt, Basque firms have increased their capacity to manage their debt and the financing costs they bear. Additionally, the ROA of Basque firms was higher than the cost of debt in 2016. As a result, finding themselves with positive financial leverage, they could increase the firm's financial return through debt-financed investment policies.

Additionally, another of the analyses carried out in the aforementioned report comprises applying a credit risk model. Applying this model makes it possible to determine the level of credit risk, which is shown on an 11-point scale. The lower the score, the higher the associated credit risk and the worse the financial position. The higher the score, the lower the credit risk and the better the financial position.

Using the value of the average score for 2016 as a measure of comparison, firms in both the Basque Country and Spain report moderate average values, with a tendency to improve in comparison with 2015. The average score for the Basque Country was 6.87, compared to 6.61 for Spain, thus confirming the overall better financial position of Basque firms.

GRAPH 8 Variation in credit risk rating



Source: SABI-Informa database. Compiled by authors.

As we can see from Graph 8, this relatively good average situation for Basque firms in relation to the average for Spain is not as positive if the result is compared only

[11] Gil de San Vicente, I., Murciego, A., Sisti, E., Vivanco, D. (2018). Informe económico-financiero y riesgo de crédito de la empresa vasca, *Cuadernos Orkestra,* 36.

with the reference regions that are located in Spain (Aragón, Cantabria, Cataluña and Navarra). Thus, we see that Basque firms are in an intermediate position: better positioned than Aragón and Cantabria, but somewhat lower than Cataluña and Navarra. If we analyse the trend between 2009 and 2016, we see that Basque firms have improved their relative position in comparison with the reference regions in Spain, as at the start of the period they were clearly below Cataluña and Navarra and made comparatively better progress, especially in the early years of the crisis, from 2009 to 2012.

4.1.2.2 The status of Basque firms in comparison with the situation in Europe

The database for the Bank for the Accounts of Companies Harmonised (BACH) project provides information about the economic and financial trends and position of firms for the 2008–2016 period in six reference countries in the EU: Germany, Spain, France, Italy, Poland and Portugal. Despite the differences between BACH (the data source used for Europe) and SABI (the data source used for the Basque Country), the degree of homogeneity is sufficient to enable the comparison to provide valid results for the indicators selected (see Table 6). Thus, this comparison suggests that the crisis was not as deep in Europe and that it developed in a stable manner. European firms increased their net worth, although less than Basque ones, and they reduced their commercial debt. The greater impact of the crisis on Basque firms is also reflected in their operating profit, although the greater dynamism of the Basque Country since 2013 made it possible for this indicator to reach a similar level to Europe in 2016. It may be expected that the positive performance demonstrated by the Basque economy in 2017 will consolidate this trend.

TABLE 6 Business finance indicators

		Basque Country			Europe		
		2008	**2013**	**2016**	**2008**	**2013**	**2016**
Balance sheet (% liabilities)	Equity	**37.1**	**45.3**	**44.8**	31.8	34.2	35.5
	Financial debt	**39.8**	**34.7**	**33.3**	39.8	40.3	38.9
	Commercial debt	**20.9**	**18.3**	**20.2**	16.3	14.4	13.3
Profit and loss (% turnover)	EBIT	**5.2**	**2.9**	**4.2**	3.5	3.0	4.2
	Financing costs	**3.9**	**2.7**	**1.7**	1.9	1.6	1.5
	Net income	**3.3**	**1.1**	**3.2**	2.2	2.1	3.3
Profitability (%)	Total ROA	**4.0**	**2.3**	**3.7**	4.0	3.2	3.9
	Operating ROA	**5.9**	**3.6**	**5.7**	5.8	4.7	5.8
	Return on financial assets	**5.6**	**2.6**	**2.7**	7.0	2.1	4.8
Debt level	Debt / EBIT	**15.9**	**24.2**	**15.0**	17.8	24.2	16.9
	Fin. costs / (EBIT+FinInc)	**0.5**	**0.6**	**0.3**	0.4	0.3	0.2
	Cost of debt (%)	**4.8**	**3.3**	**2.4**	4.4	3.3	2.7

Source: SABI-Informa Database and Bank for the Accounts of Companies Harmonised (BACH) project. Compiled by authors.

The trend in asset turnover ratios is similar in the Basque Country and Europe. They have since recovered from the greater decline between 2008 and 2013. Most noteworthy is that the financial assets of Basque firms are less profitable in comparison to European ones. In contrast, Basque and European firms have a similar debt repayment capacity and capacity to cover financing costs. Finally, we see a reduction in the cost of debt, with the Basque Country positioned even lower than Europe.

When compared at the European level, the Basque company has greater capitalisation, less indebtedness and positive levels of financial leverage

Although we are aware that the general analyses conceal different realities depending on firm size and sector of activity, as a whole, from the comparisons made, it may be deduced that Basque firms have higher capitalisation, less debt and positive financial leverage. Furthermore, since 2013 we have seen the recovery of operating profit levels among Basque firms in comparison with Europe, but not in comparison with Spain. It will be necessary to study the positive growth which may be expected from 2017 figures. Firms in the Basque Country have higher debt coverage than those in Spain and similar to those in Europe. Diverse realities condition the possible strategies to be adopted by firms in the future. On the one hand, those firms that have an adequate capitalisation and debt level, as well as positive financial leverage may face growth and investment processes that reinforce their business ventures and tend to boost financial returns. On the other hand, those firms that are in a vulnerable financial situation should be prepared for a foreseeable rise in interest rates that may compromise their situation.

4.1.3 Labour costs

Although with a view to the future, the only way to guarantee an improvement in the wellbeing of the population (in the case of a territory) or sustainable profitability (in the case of a firm) is a differentiation-based competitive strategy, in the short term and for a significant number of firms, cost-based competitive strategies continue to play a major role, with labour costs being one of the most important and the one that can most be controlled domestically. For this reason, we will now discuss how the Basque Country has performed, from a comparative perspective, in terms of both the economy as a whole and the manufacturing industry, one of the sectors most open to international trade and competition from low-cost emerging countries. Graph 9 shows the trends in the different indicators broken down in this analysis.

Since 2013 there has been a significant moderation in labour costs per employee in the Basque Country and Spain, compared with growth in the EU as a whole and Germany

Both the Spanish and Basque economies began their adjustment to the crisis somewhat later than the other European economies, which made it necessary to engage in a more intense process than in those economies. In recent years, this greater adjustment has made it possible for the Basque and Spanish economies to improve their competitiveness, which is reflected, as indicated above, in the recovery of business activity and employment.

Since 2013, there has been a considerable slowing in the rise of labour costs per employee in Spain and the Basque economy, compared to the growth observed in the EU average and significant growth in Germany.

GRAPH 9 Variation in labour cost per employee, real productivity, unit labour costs and real unit labour costs

Source: Eustat (Basque Statistics Office) and Eurostat. Compiled by authors.

In terms of the productivity of the economy as a whole, since 2013 productivity has continued to grow in the Basque Country at rates similar to those of the EU-28 and Germany, thanks to increases in output. This performance is also repeated in the manufacturing industry, where it is more marked. This is not the case in Spain, where we are seeing signs of a dual economy: slim productivity growth in the economy as a whole but significant gains in the manufacturing industry.

The productivity of the Basque economy, especially the manufacturing industry, continues to grow thanks to output growth

The reduction in labour costs leads to an improvement in the competitive position of the Basque Country and the recovery of business margins

As a result of pay restraint and productivity growth, nominal unit labour costs (NULC)[12] are declining in the Basque Country, especially in the manufacturing industry, thus improving its competitive position. And as regards real unit labour costs (RULC),[13] the reduction taking place in the Basque Country is even greater, creating favourable conditions for business margins to recover.

As a result of this, in 2017 the labour costs per employee of the Basque economy as a whole were above the EU-28 average (see Table 7). However, as productivity is still higher, the unit labour cost (ULC) is below the EU-28 average. By contrast, the manufacturing industry's position is less positive, as the higher labour costs found in the Basque Country are not offset by higher productivity. As a result, manufacturing ULC are above the average for Germany and the EU-28, and especially those in Spain.

TABLE 7 Labour cost per employee (LCE) and productivity, and unit labour costs (ULC) (2017)

	Overall economy			Manufacturing industry		
	Labour cost per employee (thousand €)	Productivity per employee (thousand €)	Unit labour cost (%)	Labour cost per employee (thousand €)	Productivity per employee (thousand €)	Unit labour cost (%)
EU-28	36.2	58.1	62.3	40.0	68.7	58.1
Spain	32.5	54.2	60.0	38.4	71.5	53.7
Germany	41.7	66.4	62.8	55.1	88.5	62.3
Basque Country	39.5	65.7	60.1	45.2	70.9	63.8

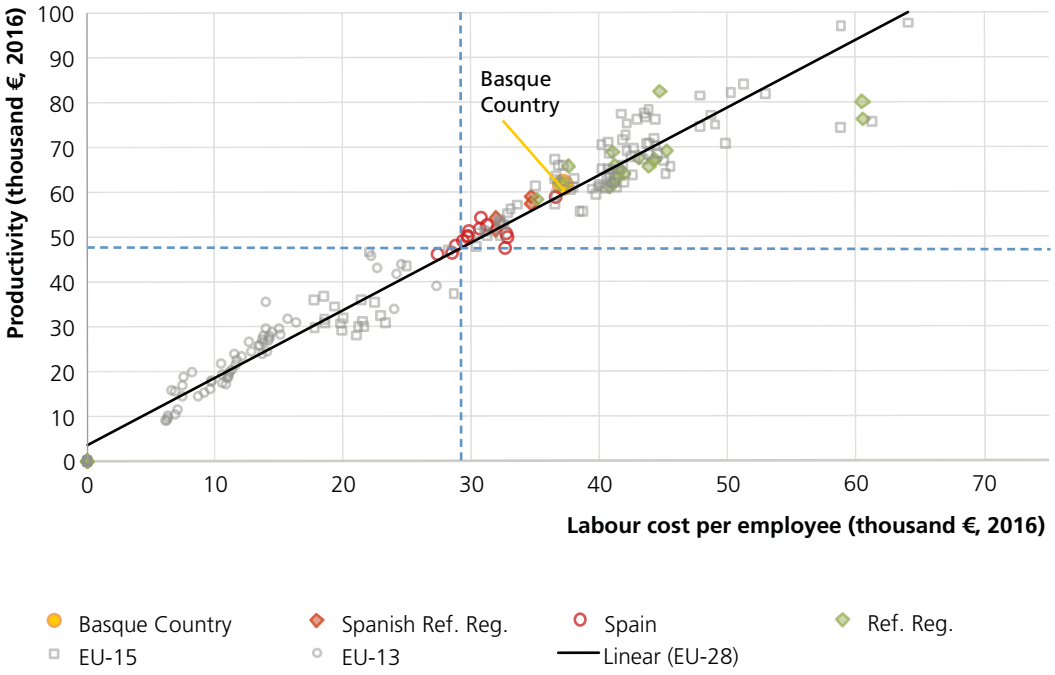
Source: Eustat (Basque Statistics Office) and Eurostat. Compiled by authors.

The trend analysis is supplemented by the regional comparison, which is shown in Graph 10 for the economy as a whole and in Graph 11 for the manufacturing industry. This analysis confirms the above and shows that the majority of the foreign reference regions exceed the Basque Country in LCE and in productivity. However in ULC, which reflect the combined effect of the two variables, they are above the Basque Country. As regards the Spanish reference regions, the Basque Country tops all of them in LCE and productivity. But the most interesting aspect is that, in regard to the manufacturing industry, the Basque Country manages to have ULC below the average for the EU-28 regions and all of its foreign reference regions (except for two). Therefore, the regional comparison does not appear to confirm the disadvantage which the comparison with countries seemed to show for the Basque manufacturing industry.

[12] NULC are calculated based on the nominal variation in both labour costs per employee and productivity. Economists consider NULC to be the most suitable indicator of variation in labour costs for analysing the impact of labour costs on competitiveness.

[13] Variation in RULC makes it possible to determine to what extent firms are able to transfer variations in NULC to prices (so that RULC are reduced and business margins increase) or the opposite (when RULC increase and business margins decline). Therefore, variation in RULC is the most suitable indicator to reflect the influence of labour costs variations on business profitability.

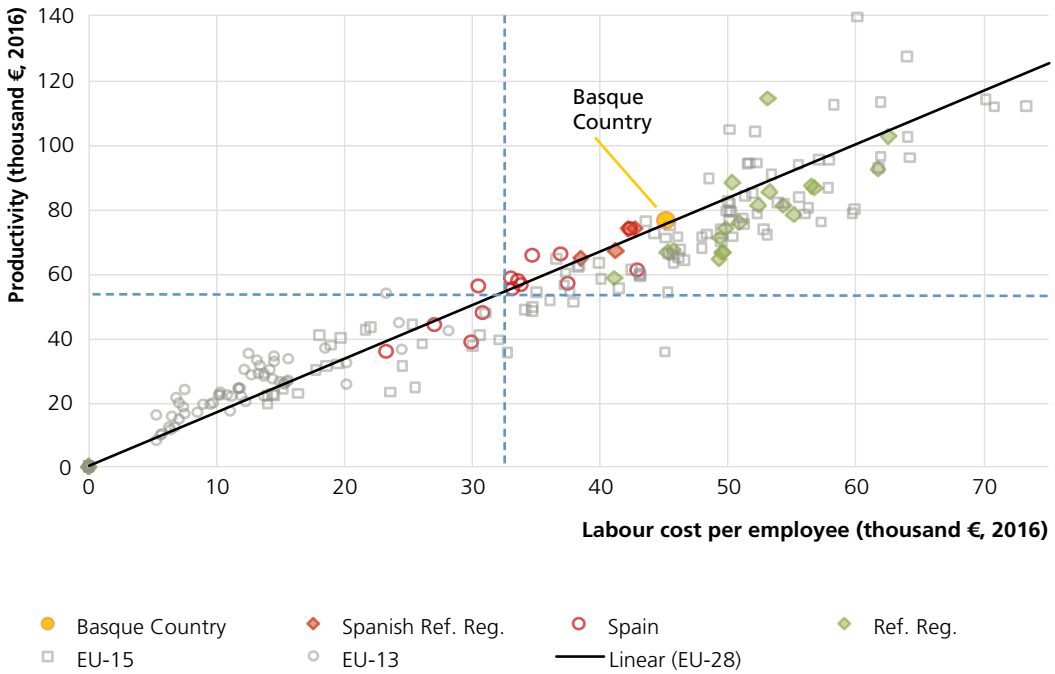
GRAPH 10 Labour cost per employee and productivity (GVA per employee) for the economy of the EU-28 regions as a whole (2016 or closest year)



Source: Eurostat. Compiled by authors.

NB: There are two regions which are not included in this graph, as their productivity is above 100.

GRAPH 11 Labour cost per employee and productivity (GVA per employee) for the manufacturing industry in the EU-28 regions (2016 or closest year)



Source: Eurostat. Compiled by authors.

NB: There are three regions which are not included in this graph, as their productivity is above 150.

4.1.4 Summary of firm performance indicators

The innovation data indicate that the level of inputs (R&D personnel and expenditure) is high, despite declining in recent years, and that according to the actors' assessment, it seems to have bounced back in the last year, but this is still to be confirmed. The analysis of business finance indicates that Basque firms are able to allow themselves this investment, as they are in a sound financial position when compared with both Spain as a whole and Europe. In part, this positive financial position has been possible due to trends in salary costs, which have been dropping as a result of both pay restraint and increased productivity, thus creating the conditions for business margins to recover in the Basque Country.

4.2 Specialisation

The Basque Country is well positioned with regards to employment in high and medium-high technology manufacturing. The employment position in knowledge-intensive services is not as favourable

The comparative specialisation indicators in Table 8 focus on two groups of activities which are considered especially important: high- and medium-high-tech manufacturing and intensive knowledge services. Although the trend was slightly negative in the last year, causing it to lose several positions, we can see that the Basque Country continues to have one of the highest proportions of employment in high- and medium-high-tech manufacturing in Europe, Spain and the group of reference regions. The trend graphs show that in recent years, employment levels in high- and medium-high-tech manufacturing have been on a par with those of Germany, and above the European average and the average for the reference regions. However, the position with regard to knowledge-intensive services is not as favourable. This indicator, which was increasing until 2012, dropped after that, and only began to bounce back in the last year. Although it is above Spain, it remains below the average for Germany, Europe and the reference regions.

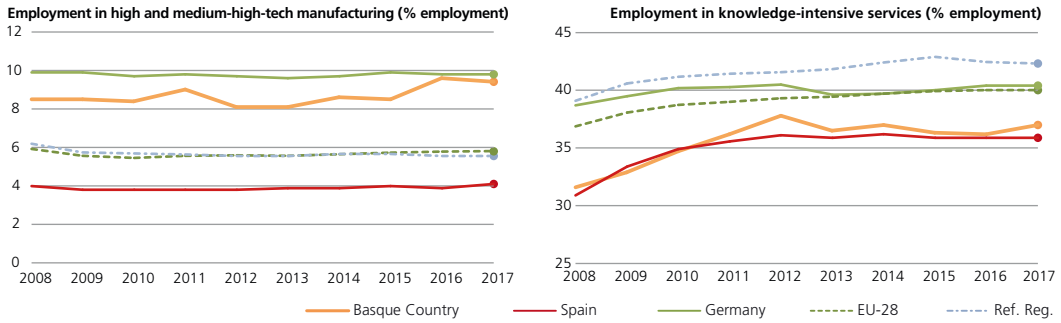
TABLE 8 Status of the Basque Country in terms of the specialisation indicators

Indicator	Values		Ranking in comparison with ...					
			all European regions		reference regions		Spanish autonomous communities	
	Most recent	1 year before	Most recent	Δ	Most recent	Δ	Most recent	Δ
Employment in high- and medium-high-tech manufacturing (2017)	9.4	9.6	27	–4	5	–2	2	0
Employment in knowledge-intensive services (2017)	37.0	36.2	118	3	22	0	5	0

Source: Eurostat. Compiled by authors.

NB: The rankings have been compiled based on 218 European regions, the Basque Country and the group of 30 reference regions, and the 19 Spanish autonomous communities and cities.

GRAPH 12 Variation in specialisation indicators



Source: Eurostat. Compiled by authors.

The comparative analysis of specialisation is supplemented below by a detailed analysis of scientific (measured in publications), technological (through an analysis of patents) and commercial/economic specialisation (focused on exports). This makes it possible to determine the territory's different fields of specialisation and supplement the description of the structural conditions, presented in section 5 of this report. Having a more detailed understanding of these areas helps reveal the existence of strengths to support smart specialisation strategies and detect possible deficiencies that it would be necessary to bolster. This analysis is developed in greater detail in the technical report which accompanies this report.

4.2.1 Scientific specialisation

Until recently, there were no international databases of publications with free or partly free access. As a result, the detailed data on publications in the Basque Country put together by Ikerbasque did not make it possible to analyse its specialisation with regard to the rest of the regions or the European countries. In order to conduct this analysis, Orkestra has built a regional database of university publications based on the publication data provided by the Centre for Science and Technology Studies (CWTS) at Leiden University.

Although there are some limitations to this database (it only considers 'core publications' indexed by the Web of Sciences (WoS) and only includes publications from universities or institutions affiliated with them that have had more than 100 indexed by the WoS during the 2013–2016 period), it includes a high percentage of publications from the Basque Country which may be representative of the territory's scientific profile.[14]

Although it is still lower than other territories, the number of publications per thousand inhabitants in the Basque Country has developed very favourably in the last period

Before we begin our analysis of specialisation, Table 9 shows the trend in terms of number of publications. We can see that although the number of publications per thousand inhabitants in the Basque Country (1.7) is still lower than in Spain as a whole, Germany and the EU-28, the trend has been very positive, especially in the most recent period.

[14] The Basque Country's ranking is affected by the fact that it does not include either non-university actors, which produce a significant number of publications, or private universities. Given that these organisations specialise in different fields, this fact also affects the resulting scientific specialisation.

TABLE 9 Core university publications indexed by the Web of Science

		Absolute number	% total, EU-28	No. indexes (2006–2019 = 100)	per thousand inhabitants
2006-2009	**Basque Country**	**2,467**	**0.31**	**100.0**	**1.1**
	Spain	64,357	8.18	100.0	1.4
	Germany	135,878	17.28	100.0	1.9
	EU-28	786,327	100.00	100.0	1.6
2009-2012	**Basque Country**	**2,912**	**0.33**	**118.0**	**1.3**
	Spain	75,250	8.52	116.9	1.6
	Germany	151,296	17.14	111.3	1.9
	EU-28	882,849	100.00	112.3	1.7
2013-2016	**Basque Country**	**3,726**	**0.38**	**151.0**	**1.7**
	Spain	84,224	8.48	130.9	1.8
	Germany	166,993	16.82	122.9	2.1
	EU-28	992,655	100.00	126.2	2.0

Source: CWTS Leiden and Eurostat. Compiled by authors.

NB: The publications are recorded using the fractional method, dividing the share between colleagues from different territories.

TABLE 10 Percentage distribution and indexes of territorial specialisation of the core university publications indexed by the Web of Sciences, by scientific field

		Percentage distribution					Specialisation index				
		Biomedicine and health	Life and earth sciences	Mathematics and computer science	Physical sciences and engineering	Social sciences	Biomedicine and health	Life and earth sciences	Mathematics and computer science	Physical sciences and engineering	Social sciences
2006-2009	**Basque Country**	**19.1**	**12.9**	**12.1**	**49.3**	**6.5**	**47**	**91**	**134**	**171**	**90**
	Spain	26.6	19.0	14.3	34.0	6.1	65	134	159	118	84
	Germany	45.8	11.9	6.9	31.0	4.3	113	84	76	108	60
	EU-28	41.2	14.3	8.6	27.4	8.6	100	100	100	100	100
2009-2012	**Basque Country**	**20.4**	**13.4**	**10.6**	**47.0**	**8.7**	**49**	**94**	**123**	**172**	**101**
	Spain	27.0	19.7	14.5	31.2	7.6	66	138	168	114	89
	Germany	45.3	11.9	6.5	30.7	5.6	110	84	76	112	65
	EU-28	41.2	14.3	8.6	27.4	8.6	100	100	100	100	100
2013-2016	**Basque Country**	**21.6**	**14.0**	**10.5**	**43.7**	**10.3**	**53**	**98**	**122**	**165**	**105**
	Spain	28.2	19.1	13.9	29.3	9.5	69	133	161	111	97
	Germany	43.4	12.3	6.8	30.1	7.3	107	86	79	114	75
	EU-28	40.8	14.4	8.6	26.5	9.8	100	100	100	100	100

Source: CWTS Leiden and Eurostat. Compiled by authors.

As regards specialisation, the values in Table 10 show that the Basque Country's scientific production has a significant specialisation in physical sciences and engineering, and in contrast, an underspecialisation in biomedicine and health. Comparatively, the Basque Country also appears to be somewhat specialised in mathematics and computer science, and to a lesser extent, in social sciences. The Basque Country's scientific specialisation profile has smoothed off somewhat, but remains much more pronounced than that of other territories, probably due to size differences.

Scientific production in the Basque Country shows great specialisation in Physical Sciences and Engineering and great subspecialisation in Biomedicine and Health

4.2.2 Technological specialisation

From Orkestra's exhaustive exploitation of the OECD REGPAT database (see Table 11), it may be deduced that the Basque Country is particularly specialised in mechanical engineering and other industries (especially the areas of furniture and civil engineering), and to a rather lesser extent, in chemicals. Its greatest underspecialisation is in electronic engineering. This weakness in patents linked to ICT, which contrasts somewhat with the slight specialisation in mathematics and computer science publications, is cause for concern, given the importance which Industry 4.0 will take on in the future to foster advanced manufacturing and opportunity niches such as the creative industries.

TABLE 11 PCT patents by technological field and industry

In patents, the Basque Country is particularly specialised in mechanical engineering, and the largest sub-speciality is in Electronic Engineering

		Percentage distribution (2012–15)	Specialisation index, 2012–15 (EU-28 = 100)	Variation in percentage distribution between 2004–2007 and 2012–2015 (percentage points)
Technology sector	Electronic engineering	11	45	11.2
	Instruments	14	92	15.4
	Chemicals	26	109	27.5
	Mechanical engineering	38	131	–25.4
	Other sectors	11	142	–81.2
Industry	Food, beverages & tobacco	0	37	0,0
	Textiles and footwear	0	28	–0,1
	Wood, paper and furniture	2	154	–0,3
	Chemicals & rubber & plastics	10	92	5,0
	Pharmaceuticals	7	100	2,1
	Non-metal industry	2	108	0,2
	Metalworking	5	177	–2,6
	Electrical equipment	19	59	–0,3
	Machinery	28	135	–2,1
	Transport equipment	7	94	0,2
	Other manufactured goods	13	130	0,9
	Construction	3	267	–1,7
	IT services	1	114	0,5
	Not classified by sector	2	146	–1,8

Source: OECD REGPAT Database. Compiled by authors.

From the perspective of trends, the underspecialisation in electronic engineering and instruments has lessened slightly, and progress has been made in patents linked to the chemicals industry (particularly for pharmaceutical products), making it possible for the Basque Country to move from a slight underspecialisation to a slight specialisation. On the other side of the balance sheet is the loss of specialisation in mechanical engineering and especially, other industries.

As regards the areas of the economy to which the patents apply, more than 90% of PCT patents primarily apply to the manufacturing industry. Due to their higher specialisation rate and sufficiently broad volume of patents, metal-related industries, especially the machinery and the metalworking and metal products industries, are noteworthy. The other manufactured goods industry is also showing some strength. The greatest underspecialisation is found in electrical equipment and IT services, which may be an obstacle to developing the Industry 4.0 strategy.

From the perspective of trends, in the most recent period, the Basque Country has slightly reduced its specialisation in the metals industries, with the share held by the chemical complex increasing (possibly as a result of a focus on the biosciences). As regards the areas of underspecialisation, the trend has been conflicting: it has not been possible to reduce the underspecialisation in electrical equipment, which is the area with the most industrial component, but IT services has made some progress.

4.2.3 Economic specialisation

The Basque Country specialises mainly in four branches: Motor vehicles, Metallurgy and metal products, Machinery and equipment, and Petroleum Refining

In this section we will be analysing the economic specialisation of the Basque Country based on foreign trade data. The data have been divided into 19 industries, which have in turn been grouped based on their technological level, economic use of the goods, level of growth, and technical and economic characteristics.

As shown in Table 12, Basque exports have a significant degree of concentration in just four industries: motor vehicles (26%), metalworking and metal products (23%), machinery and equipment (15%), and petroleum refining (8%). The specialisation indexes for these four industries are also high. The resulting risks are significant, given the considerable link between the first three, which largely form part of the same value chains, and the fact that the fourth is highly subject to energy price volatility and the foreign oil supply. Be that as it may, it should be noted that between 2008 and 2017, the degree of export concentration dropped markedly, primarily due to the declining share of metalworking and metal products exports. Additionally, as we will see below, the severity of this concentration is less because in these four sectors with the largest share of exports, the Basque Country has strongly positive comparative advantage rates.

The Basque Country primarily exports medium-tech products, those with medium demand growth, intermediate goods and consumer durables, and from economies of scale-intensive industries. In contrast, it has hardly any high-tech exports or high demand growth exports, nor from the science and technology-intensive industries. Of the three major manufacturing industries which are classified as high-tech, the Basque Country's greatest weaknesses are in pharmaceuticals, following by electronics and IT, with aeronautics having relatively fewer weaknesses. In addition, the Basque Country's percentage of consumer goods exports is very low, making it more sensitive to the economic cycle.

TABLE 12 Analysis of export specialisation

		Exports				Relative balance of trade		
		Percentage distribution (2017)	Specialisation index (2017)	Percentage of variation, value 2008–2013 (p.p.)	Percentage of variation, value 2013–2017 (p.p.)	Relative balance of trade (2008)	Relative balance of trade (2013)	Relative balance of trade (2017)
Industries	Agriculture and fishing	0.5	22	0.1	0.1	–70	–63	–59
	Extractive industries	0.6	43	–0.0	0.5	–99	–99	–94
	Food, beverages and tobacco	3.5	47	2.1	–1.6	–6	26	2
	Textiles, apparel, leather and footwear	0.6	13	–0.2	–0.0	–39	–41	–44
	Wood, paper and printing	2.7	111	0.1	0.1	7	21	19
	Coking plants and oil refining	7.6	228	1.2	–2.1	–9	3	47
	Chemicals	3.9	44	0.4	1.1	–29	–38	–23
	Pharmaceutical products	0.3	4	0.1	0.1	–60	–12	–2
	Rubber and plastics	2.3	80	0.4	–0.2	14	25	18
	Non-metal industry	1.7	129	0.1	–0.2	36	47	39
	Metalworking and metal products	23.2	269	–4.9	–2.9	19	30	21
	Computer and electronic products	1.2	13	0.1	0.4	–55	–33	–29
	Electrical materials and equipment	4.6	83	0.3	–1.6	16	32	15
	Machinery and equipment	14.1	124	0.7	–1.4	37	49	39
	Motor vehicles	26.2	204	–2.1	9.8	52	64	56
	Other transport equipment	4.6	102	2.7	–1.9	40	61	36
	Furniture	0.4	37	–0.2	0.1	13	17	0
	Other manufactured goods	0.5	16	–0.0	0.0	–17	–17	–30
	Energy, water, services & unclassified	1.5	76	–0.9	–0.2	–48	–50	–32
Technological level	High	2.9	14	–0.2	0.4	–13	–3	–14
	Medium-high	53.8	124	–0.1	8.8	32	39	36
	Medium-low	35.4	202	–1.5	–7.7	13	25	26
	Low	7.9	43	1.8	–1.5	–7	14	–1
Economic use of goods	Consumer goods	5.4	21	1.5	–2.4	–10	14	–11
	Consumer durables	26.9	197	–2.3	10.1	52	64	56
	Intermediate goods	47.5	122	–2.5	–4.8	8	16	17
	Capital goods	20.2	91	3.4	–2.9	34	48	34
Level of growth	High	7.6	28	–0.0	–1.2	5	19	2
	Medium-high	48.6	136	–0.3	10.3	35	41	39
	Medium-low	39.2	164	–1.7	–7.5	12	24	24
	Low	4.6	33	2.0	–1.6	–16	12	–8
Technical and economic characteristics	Resource-intensive	17.4	105	3.5	–3.4	–9	12	22
	Labour-intensive	10.2	121	–0.2	0.0	23	33	26
	Economies of scale-intensive	50.3	139	–3.9	5.9	27	33	30
	Science and technology-intensive	2.6	16	–0.3	0.3	14	3	–6
	Differentiation-intensive	19.4	87	0.8	–2.9	24	41	29

Source: Eurostat, United Nations, Comtrade Database and Directorate-General for Taxation. Compiled by authors.

As regards specialisation, in addition to the four industries discussed, there are several industries that are also notable for having a positive specialisation: non-metal industry and wood, paper and printing, and if we drop down to the sub-industry level, railway equipment. It should also be noted that the industries in which the Basque Country is underspecialised include some closely linked with the strategic priorities and areas of opportunity included in the Basque RIS3: pharmaceuticals (biosciences/health strategy), computer and electronic products and electrical materials

Some of the branches in which the Basque Country has a sub-speciality are closely linked to the strategic priorities and territories of opportunity of the Basque RIS3

and equipment (advanced manufacturing/Industry 4.0 strategy), and food (area of opportunity of the same name).

The groups of activity in which the Basque Country specialises strongly coincide with those that have the most exports. Also noteworthy is the significant underspecialisation in science and technology-intensive, high-tech and high demand growth activities (that is, those which open up more windows of opportunity and are less affected by competition from emerging countries), as well as the underspecialisation in consumer goods industries (which, as indicated above, makes the Basque economy more sensitive to the economic cycle).

Analysis of the relative balance of trade confirms that the four industries in which the Basque Country has the most exports and which have a specialisation index above 100% also have a large positive relative balance of trade. Therefore, from the perspective of competitiveness, they have considerable strengths. As regards the specialisation indexes, analysis of the relative balance of trade indicates that some industries in which the Basque Country does not have a significant specialisation (or was even underspecialised) have positive trade balances. This is the case of electrical materials and equipment (highly important for Industry 4.0) and rubber and plastics. And from the perspective of groups of activity we see the same tendency: in addition to confirming the strengths showed by the specialisation index analysis, capital goods and differentiation-intensive goods (which should in theory be classified as attractive) and natural resource-intensive goods (in which, also theoretically, there is greater vulnerability) also have a positive balance of trade.

As the analysts indicate, development does not only consist of how much the product grows, but also how the composition of what is produced changes. In the previous section, we analysed how much Basque exports have grown, in comparison with those of other territories. Here we offer a brief analysis of how the export structure has changed, based on the rate of structural change for exports. During the 2008–2017 period, there were two clear phases of Basque exports. Between 2008 and 2013, the structure of Basque exports changed less than in other areas, and what change did occur was reactive in nature (sector adjustment in response to the drop in demand). Between 2013 and 2017, in contrast, the structure of Basque exports changed more than that of the other economies. Behind this, it is possible to observe both reactive (recovery of markets lost during the previous phase) and proactive (development of new activities and markets) behaviours.

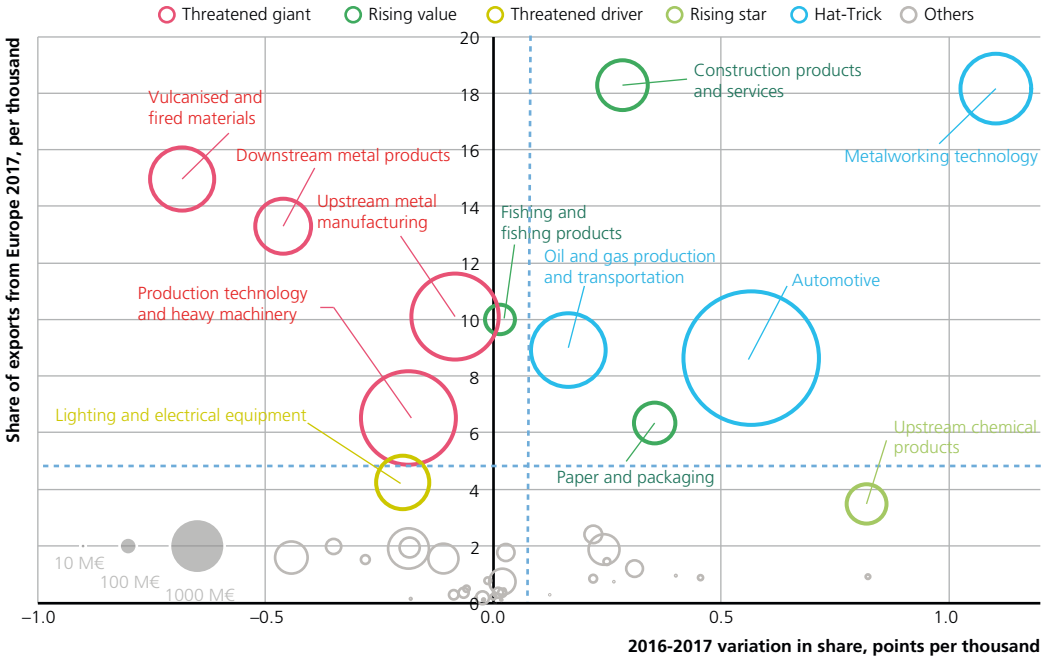
In general, if we look at the change over the entire period in the Basque Country, we see growth in consumer durables and, to a lesser extent, in capital goods, and linked to these, medium-to-high-tech and medium-to-high demand growth goods. While on the whole this is positive, the significant underspecialisation in high-tech and high demand growth, and science and technology-intensive industries remains uncorrected. There has also been a downswing in differentiation-intensive industries. Metalworking and metal products is the industry that lost the most exports, whereas motor vehicles made the most progress (despite a decline during the 2008–2013 period).

BOX 1 Trends in export clusters

An alternative way to analyse export specialisation is by grouping exports into clusters, following the methodology which groups economic activities based on patterns of co-location of employment, input–output links and links between occupations (see Delgado et al., 2016[15]). This gives us 51 clusters that group together different activities, which can also be used to classify exports by means of a conversion table.

Graph 13 shows trends in Basque export clusters for the years 2016 and 2017. Given that the figures for global exports for 2017 are not yet complete (lacking the exports for China), Basque exports are given as a share of exports from Europe as a whole.

GRAPH 13 Map of export clusters



Source: Agencia Tributaria (Inland Revenue) and United Nations, Comtrade. Compiled by authors.

These clusters can be grouped based on the typology developed by Orkestra, which classifies clusters according to their importance (share of Basque exports, represented by the size of the circle), their competitive position (share of exports from Europe, position on the vertical axis) and dynamism (increase in the share of exports, position on the horizontal axis). The combination of these three characteristics yields the typology laid out in Table 13. Due to their importance in Basque exports, these clusters and the economic activities that lay behind them, special attention should be paid so as to implement appropriate policies for their development.

[15] Delgado, M., Porter, M.E. and Stern, S. (2016). Defining clusters of related industries, *Journal of Economic Geography*, v.16, pp. 1-38.

TABLE 13 Export cluster typology for the Basque Country

Type	Important	Competitive	Dynamic	Definition	Clusters	Most prominent activities
Hat-trick	✓	✓	✓	Well positioned in all three indicators	Automotive	Increase in manufacturing of both motor vehicles and other parts and accessories for motor vehicles.
					Oil and gas production and transport	Particularly due to the increase in the share of refined petroleum products.
					Metalworking technology	Considerable increase in manufacturing share of tools, but a slight drop in machine tools for metalworking.
Threatened giant	✓	✓		Represents a significant share of the Basque Country's exports and its share of exports is considerably higher than the other clusters in the Basque Country, but its position may be threatened by the fact that it is not among the most dynamic.	Production technology and heavy machinery	Considerable increase in the share of railway locomotives and rolling stock, but a drop in the share of other taps and valves, and lifting and handling equipment.
					Upstream metal manufacturing	Decrease in manufacturing share of basic iron and steel and of ferro-alloys and for cold drawing.
					Vulcanised and fired materials	Decrease in the manufacturing share of tyres, other rubber products, and shaping and processing of flat glass. But an increase in refractory ceramic goods and hollow glass.
					Downstream metal products	Decrease in the manufacturing share of other metal products and of weapons and ammunition, but an increase in light metal containers and packaging.
National driver	✓		✓	Although its percentage of exports is not among the largest in the Basque Country, it has a significant share of total exports and its share is growing.	—	
Rising value		✓	✓	Although its percentage of the Basque Country's exports is not significant, its share of exports is considerably higher than the other clusters in the Basque Country and its share is increasing.	Construction products and services	Particularly due to the increase in the share of tubes, pipes, hollow profiles and related fittings.
					Paper and packaging	Particularly due to the high share and slight increase in paper and paperboard manufacturing.
					Fishing and fishing products	Increase in the manufacturing share of fish preserving, but decrease in the share of fish processing and marine fishing.
Threatened driver	✓			Although its percentage of exports is not among the largest in the Basque Country, its share of total exports is significant. However, this position may be threatened by the fact that it is not among the most dynamic.	Lighting and electrical equipment	Decrease in the manufacturing share of electric motors, generators and transformers, and electricity distribution and control apparatus, but increase in other electronic and electric wires and cables.
Threatened value		✓		Although its percentage of the Basque Country's exports is not significant, its share of exports is considerably higher than the other clusters in the Basque Country, but its position may be threatened by the fact that it is not among the most dynamic.	—	
Rising star			✓	Its share of Basque exports and overall share are not yet significant, but its dynamism in the past year makes it advisable to monitor it.	Upstream chemical products	Increase in the share of organic basic chemicals.

4.2.4 Summary of specialisation indicators

The analysis of commercial/economic specialisation shows that the Basque Country specialises primarily in motor vehicles, metalworking and metal products, machinery and equipment, and petroleum refining. Although this entails certain risks due to the links between them, they are sectors with quite high related variety and which maintain high positive trade balances. Notable features include the low degree of specialisation in high-tech and high demand growth exports and science and technology-intensive industries, which are less sensitive to competition from emerging markets. This may have repercussions for the implementation of Basque RIS3, as noteworthy among these industries are the underspecialisation in pharmaceuticals (relevant to the biosciences/health strategy), electronic materials and equipment (although in this case muted by the positive balance of trade), and computer and electronic products (important for the advanced manufacturing strategy). Also noteworthy is the underspecialisation in food, relevant to this area of opportunity.

The underspecialisation in sectors more closely linked to the EICT (electronic, information and communication technologies) of Industry 4.0 is confirmed by the analysis of technological specialisation, as although it has lessened in recent years, we see a significant underspecialisation in electronic engineering, especially in patents applicable to the electrical equipment and IT services industries. However, this is partially offset by a slight specialisation in the scientific sphere of mathematics and IT. As regards the biosciences/health strategy, the picture is the opposite, as the underspecialisation in scientific production in biomedicine and health and life and earth sciences is partially offset by the specialisation in patents linked to the chemicals industry (especially in pharmaceutical products). We are seeing progress in both publications and patents linked to this strategy.

It is also worth noting that the strong commercial specialisation in metals and mechanical industries is reinforced by the significant specialisation in patents applicable to these sectors, something which is not seen in the case of motor vehicles or railway equipment, where the trade benefits are not reinforced by a specialisation in patents applicable to transport equipment.

4.3 Business environment

The business environment is key to creating the conditions necessary to allow firms to increase their productivity and compete effectively in international markets. Table 14 provides a summary of the situation in the Basque Country with regard to these indicators. We can see that although in absolute terms, positive progress was made compared to the previous year in many indicators, in relative terms, the progress is mainly negative, with the Basque Country losing positions (however slightly) in almost all the rankings. We will now discuss the situation and trends in each of the indicators for both the last year and, as presented in Graph 14, previous years.

Compared to the reference regions, the Basque Country occupies a medium-low position in human resources in science and technology

The first group of indicators refers to aspects related to the labour resources available in the territory. In science and technology human resources, which increased slightly in the last year, the Basque Country has a strong position in comparison with the autonomous communities and cities, intermediate when compared with the European regions as a whole, and a medium–low position compared to the reference regions. In recent

years, the values for this indicator have remained fairly steady, below the average for Europe and the reference regions since 2011, and some distance from Germany.

The Basque Country is correcting the relative weakness of its population in training, especially due to the high levels of students in tertiary education

When we consider the entire population between the ages of 25 and 64, we find that after the common age for formal education is reached, the education level fluctuates very little from one year to the next, increasing slightly because the young people joining the cohort have more education than the older people leaving it. Given that the highest age bands have the worst level of education (compared to other European regions, and especially the reference regions), this is one of the business environment indicators in which the Basque Country has the weakest position, in comparison with both the European regions and the reference regions. However, it is very well positioned within Spain. Nonetheless, deficiencies in the highest age bands are offset by the education levels of younger people in terms of tertiary education. Consequently, although the value of the indicator dropped slightly in the last year, which caused the Basque Country to lose positions in the ranking of European regions (falling to below 50th place), it still remains quite high compared to the reference regions and the autonomous communities and cities, and above all the territories included in the trend graph.

The position of vocational education is a little worse than tertiary education, and dropped in both value and positions in the ranking in the last year. However, even so, it is in a medium–high position when compared to the European regions and the autonomous communities and cities, and an intermediate position compared to the reference regions. Nonetheless, it should be noted that the percentage is higher than the German average.

TABLE 14 Status of the Basque Country in terms of business environment indicators

Indicator	Values		Ranking in comparison with ...					
			all European regions		reference regions		Spanish autonomous communities	
	Most recent	1 year before	Most recent	Δ	Most recent	Δ	Most recent	Δ
Human resources in science and technology (2017)	18.9	18.7	109	–1	23	2	2	0
Population aged 25–64 with upper secondary or tertiary education (2017) (*)	71.2	70.5	154	–1	28	0	2	0
Tertiary education students (2016) (*)	72.1	72.6	51	–4	4	–1	5	–1
Vocational education students (2016)	26.0	27.6	86	–15	13	–2	5	–1
Population aged 25–64 enrolled in further education courses (2017) (*)	13.2	11.7	69	10	22	4	1	1
R&D personnel at public institutions (2015)	0.60	0.60	72	–4	11	–1	6	2
Public R&D expenditure (2015)	0.49	0.51	113	–8	17	0	8	–2
Total R&D personnel (2015)	2.02	2.06	16	–1	4	–1	1	0
Total R&D expenditure (2015)	1.91	2.04	50	–4	12	–1	1	0
Households with broadband access (2017)	86.0	82.0	74	7	21	0	5	–1
Internet sales (2017)	53.0	52.0	110	–13	31	–3	7	–5

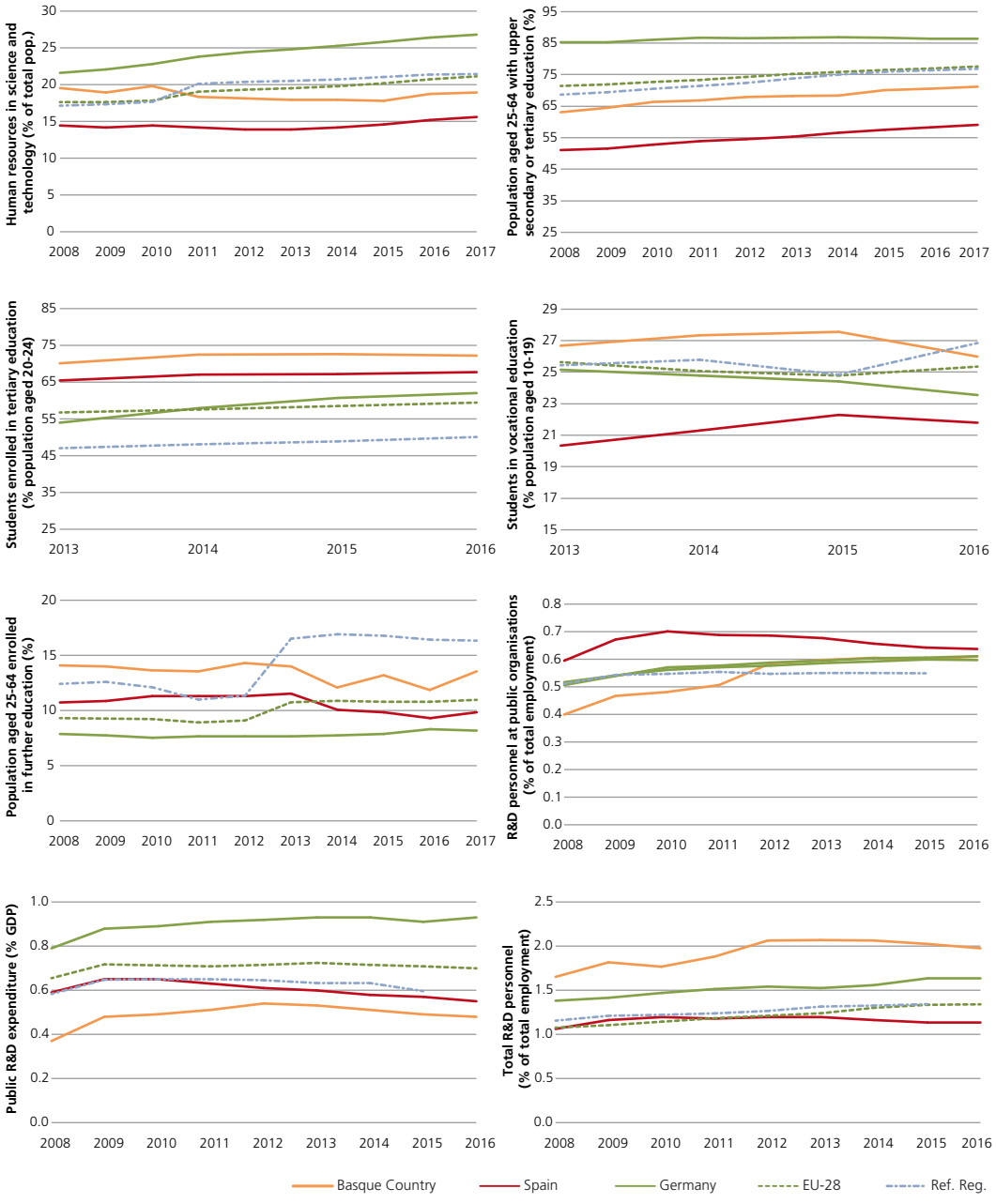
Source: Eurostat. Compiled by authors.

NB: The rankings have been compiled based on 218 European regions, except when no data were available (*217), the Basque Country and the group of 30 reference regions, and the 19 Spanish autonomous communities and cities.

As regards the population engaged in further education, which is necessary to continue acquiring skills, on the positive side, the Basque Country's good position in relation to both Spain and Europe as a whole, and the positive progress in recent years should be noted. Despite this good progress, the medium–low position we see compared to the reference regions may point to a relative weakness with regard to these regions, whose structural conditions are the most similar to the Basque Country. This relative weakness has been carried over for several years.[16]

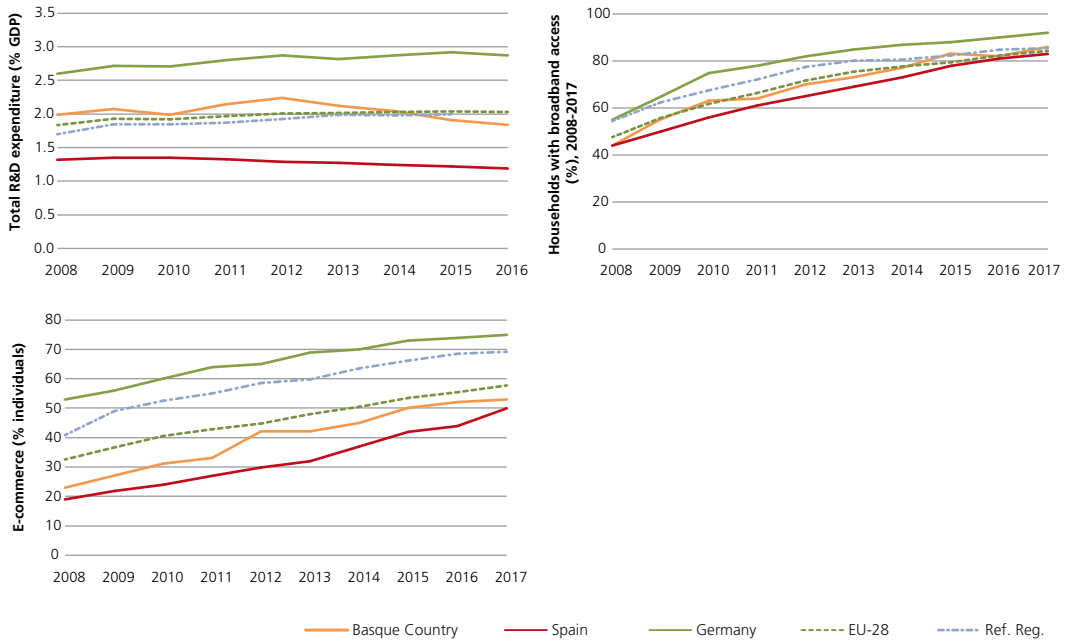
Compared to the reference regions, the Basque Country occupies an intermediate position in the rankings for participation in vocational training and a medium-low position in continuous training

GRAPH 14 Variation in business environment indicators



[16] Although from Graph 14 it might be possible to interpret that this began in 2013, in reality it was probably earlier, as the jump observed in the series for the reference regions that year is due to a methodological change in how this variable is calculated in the French regions, many of which are part of the reference group.

GRAPH 14 *(continuation)* Variation in business environment indicators



Source: Eurostat. Compiled by authors.

The second group of business environment indicators measures R&D capacity, both public (government and universities) and total. In other words, they also include those for the business sector, already described in the analysis of business performance. Both are included to account for the possible distortion resulting from counting the R&D investment for technology centres and CRCs as private. This explains why the relative positions in public R&D expenditure and personnel are lower than the total. In Table 14, which has data for 2015, we see that, with the exception of personnel in public R&D (which remained constant), the other three indicators had dropped in absolute terms and held or lost position in comparison with all the territories. Graph 14 makes it possible to see what happened the following year: the R&D personnel indicator increased slightly and there was a drop in the other three indicators.

There is a contraction in R&D activity, accompanied by an improvement in the efficiency or productivity of the R&D performed

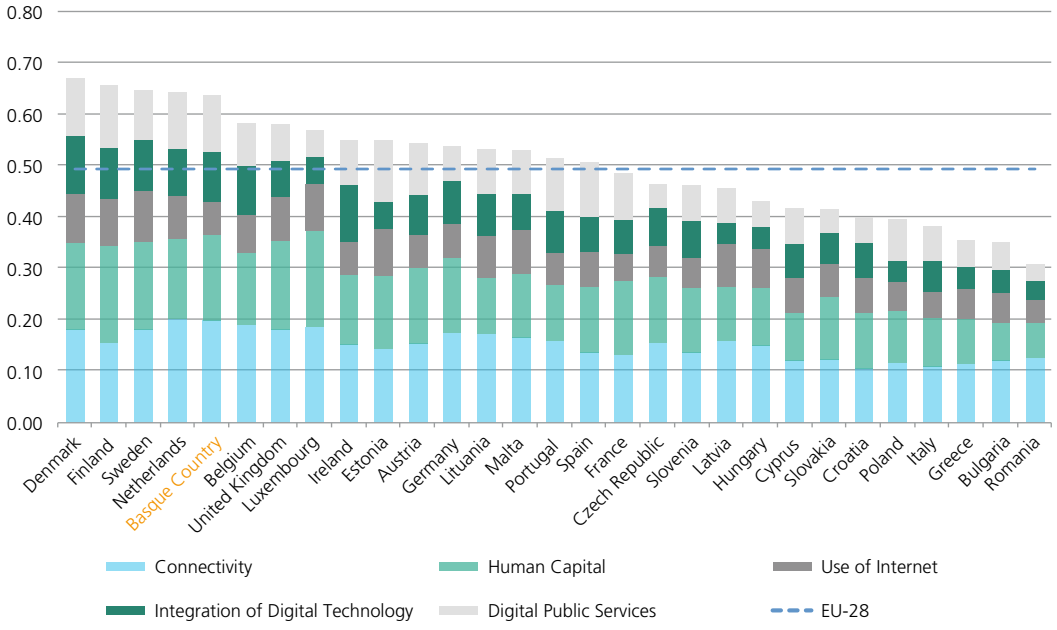
This downturn in R&D activity was accompanied by an improvement in the efficiency and productivity of the R&D carried out, which is of course positive. However, it would have been even more so if the improvement in R&D productivity, rather than being the result of what economists term passive increases in productivity (in other words, increases resulting from a sharp drop in the denominator: R&D activity carried out), had come from active increases (in other words, from increases in the numerator or innovation output: patents, new products, etc.). The reduction in R&D expenditure was due, among other things, to a decline in the number of firms doing R&D (normally, those that engaged in R&D in a more occasional and less systematic manner), so that the ones that remain are more efficient. However, this shrinks the base for future R&D growth. This is particularly applicable to indicators of total R&D expenditure. Public R&D expenditure, despite having been above the European average, fell below that level beginning in 2015, the result of the decline in the last two years and the increase in Europe.

BOX 2 Principal conclusions of the DESI report on the Basque Country

In line with the business environment indicators, Orkestra has prepared a report on the digitalization of the Basque economy and society, measured by means of the DESI indicator. This indicator includes five dimensions: connectivity, human capital, use of Internet, integration of digital technology in firms and digital public services. As data are not available for the European regions, the comparison is with countries. It should therefore be remembered that within these countries there are significant differences which disappear when we look at the national average.

As a whole, the Basque Country is approaching convergence with the European leaders, primarily due to its high connectivity capabilities, the level of human capital and the more than satisfactory level of integration of digital technology at firms and public administrations. In contrast, the degree of digitalization in Basque households is less than in European households.

GRAPH 15 Digital Economy and Society Index, DESI 2017



The degree of digitalization in households could increase in the future, as the high-performance communications infrastructure, especially in terms of speed, makes it possible to offer increasingly sophisticated digital services. Additionally, the majority of citizens have the digital skills to operate in daily life.

The weakness that can be seen in household Internet use is not found in firms, which have been incorporating technology at an appropriate speed, showing a greater degree of sophistication in the use of some of the most recent technologies. In contrast, we note certain limitations in e-commerce, both in the level of marketing through the new digital channels and its impact on turnover and opening up trade with the rest of the European domestic market. This may be behind the lower use of electronic commercial transactions among Basque households. Additionally, as regards the elements of the environment which may influence the digitalization of firms, we find a lack of ICT specialists to develop digital services.

As regards public administrations, they are in the process of digitalization, with a significant range of digital public services available in terms of completeness and ease when it comes to carrying out the service. There has been considerable development in open data. In contrast, the quality of these digital services does not translate into use of public services by citizens.

Source: Zubillaga Rego, A. (2018). Economía y sociedad digitales en el País Vasco. *Cuadernos Orkestra*, 34.

The digitisation capacities installed place the Basque Country close to Europe's leading countries, but there are shortcomings in terms of the use in households and a possible lack of ICT specialists for developing digital services

Lastly, Table 14 includes two indicators related to Internet use as proxies for the sophistication of demand. The households with broadband access indicator increased not only in the last year, but also in previous years. This was made possible due to the rollout of infrastructure, which now reaches almost all households, although all of them have not yet signed up for service. As a result, despite having the technology available, the Basque Country is in an intermediate position in terms of use. This is shown more clearly in e-commerce, an indicator in which the Basque Country is at the bottom of the reference regions and below the European average. The relative weakness of Internet use by households is confirmed in the broader analysis of the digitalization of the Basque economy and society presented in Box 2.

As regards indicators of the environment, the Basque Country is correcting its relative weakness in terms of the education and training of the population as a whole (an indicator of stock which varies little from year to year), which is continuing to engage in further education (although less than in the reference regions), primarily due to the high levels of students in tertiary education. In the area of vocational education, it is notable that the percentage of students is higher than that of Germany, although it declined in the last year and stands at a medium-to-high or intermediate position in the rankings. The innovation indicators point to a downswing in inputs which, according to perceptions, may have corrected itself in the last year. This downswing has resulted in a passive increase in efficiency, but may endanger the base for future R&D growth. Lastly, digitalization indicators indicate that installed capabilities (for both connectivity and human capital) have made it possible for the Basque Country to position itself close to the leading European countries (although the data do not make it possible to analyse the regional differences within each country). However, there are still gaps in the rate of use by households and a possible lack of ICT specialists to develop digital services.

5
Endowments

Endowments comprise structural characteristics that are given or vary steadily, but affect competitiveness. They are the elements that have been used to identify the reference regions that have a similar structure to the Basque Country. Below we present a description of these structural elements found in the Basque Country, compared to the average for the group made up of the Basque Country and the reference regions, and the average for the EU-28 regions. This will make it possible to highlight the specific characteristics which may be useful for designing suitable public policies.

5.1 Geographic and demographic structural determining factors

The geo-demographic conditions of the Basque Country are more similar to those of the EU-28 than to those of the reference regions

Table 15 contains a comparative analysis of the geographic, demographic and educational indicators of the structural conditions. The reference regions are characterised by having a population higher than the EU-28 average and a slightly lower ageing index. In addition, they are more built-up and more accessible. They are also charac-

TABLE 15 Geo-demographic indicators representative of structural conditions

	Basque Country	Reference regions	EU-28
Population (people) (2017)	**2,164,066**	2,867,260	2,350,431
Ageing index (2017)	**1.52**	1,25	1,29
Urban development level (1–6) (2011)	**5,00**	4,61	4,20
Accessibility index (2010)	**27,581**	43,434	38,352
GVA per capita in Agricultural and livestock, Extractive, and Energy and water sectors (€) (2015)	**1,230**	1,438	1,401
Population without upper secondary or tertiary (%) (2016)	**29.50**	23.30	24.21

Source: Eurostat and European Commission (Knowledge Centre for Territorial Policies). Compiled by authors.

NB: The urban development level is measured using the following scale: 1 = predominantly rural and remote regions; 2 = predominantly rural regions, near a city; 3 = intermediate regions, remote; 4 = intermediate regions, near a city; 5 = predominantly urban regions which do not contain the national capital; 6 = regions containing the national capital.

terised by ranking above average in terms of the availability and exploitation of natural resources, which, according to the literature, is determined by GVA per capita in the Agriculture, Livestock and Fishing; Extractive; and Energy and Water sectors. Lastly, the percentage of the population that has not obtained a secondary or higher education qualification is close to the European average. The Basque Country more closely resembles the EU-28 than the reference regions, and differs from the latter in several of the indicators: the population is smaller, it is older, there is less accessibility, it has fewer natural resources, and it has a smaller percentage of the population with low levels of education. The only indicator in which it coincides with the reference regions is the urban development level, which is even higher than that of those regions. In any case, the differences are small. They are also offset by the Basque Country being closer to these regions in the indicators for the other blocks, which are ultimately more important for distinguishing the impact on competitiveness.

5.2 Structural determining factors linked to the field of science and technology

In the Basque Country it is worth pointing out scientific specialisation in physical sciences and engineering, and technological specialisation in mechanical engineering

The indicators in Table 16 show the territorial comparison in the field of scientific and technological specialisation, which have been analysed in detail in the section on specialisation. As regards publications, we can see that the reference regions and the EU-28 have similar areas of specialisation. The Basque Country coincides with the reference regions in having higher percentages of publications in mathematics and computer science, physical sciences and engineering, and social sciences and humanities, which are offset by lower percentages in biomedicine and health, and life and earth sciences. In the case of the reference regions, the differences with the EU-28 are quite small in all cases. In the case of the Basque Country, notable features include the strong specialisation in the physical sciences and engineering, and the underspecialisation (compared to the EU-28 and the reference regions) in biomedicine and health.[17]

This technological specialisation of the Basque Country and the reference regions coincides in terms of their lesser specialisation (compared to the European average) in electronic engineering patents and a greater specialisation in mechanical engineering, with this underspecialisation and overspecialisation being more pronounced in the case of the Basque Country. The other fields of specialisation are quite similar in all territories. The Basque Country also coincides with the reference regions in having a more diversified portfolio of patents than the European average, as the concentration index for patents is lower than that of the EU-28.

[17] As we have seen in section 4.2.1, this specialisation may be skewed by the fact that it does not include publications from private universities or those of non-university actors.

TABLE 16 Scientific and technological specialisation indicators representative of structural conditions

		Basque Country	Reference regions	EU-28
Publications by field	Biomedicine and health (%) (2013–2016)	**21.55**	37.02	38.49
	Life and earth sciences (%) (2013–2016)	**14.01**	14.32	15.52
	Mathematics and computer science (%) (2013–2016)	**10.48**	9.67	9.62
	Physical sciences and engineering (%) (2013–2016)	**43.66**	29.46	27.96
	Social sciences and humanities (%) (2013–2016)	**10.29**	9.52	8.41
PCT patents by technological field	Chemistry (%) (2012–2015)	**25.94**	24.62	25.89
	Electronic engineering (%) (2012–2015)	**10.57**	16.48	19.78
	Instruments (%) (2012–2015)	**14.41**	14.61	13.78
	Mechanical engineering (%) (2012–2015)	**37.67**	33.21	29.21
	Other (%) (2012–2015)	**11.41**	11.08	11.33
	Gini concentration index for patents (0–1) (2012–2015)	**0.42**	0.49	0.55

Source: Leiden University and OECD REGPAT Database. Compiled by authors.

NB: The percentages for the EU-28 exclude the regions that have no publications. The Gini concentration index is calculated based on the distribution of PCT patents in 35 fields of technology.

TABLE 17 Sectoral makeup indicators for the economy and industry representative of structural conditions

		Basque Country	Reference regions	EU-28
Employment by major business sector	Agriculture and fishing (%) (2017)	**1.39**	3.13	5.84
	Manufacturing (%) (2017)	**22.30**	17.07	16.98
	Construction (%) (2017)	**5.47**	6.84	6.74
	Trade, transport and hospitality (%) (2017)	**23.83**	23.95	24.67
	Advanced business services (%) (2017)	**16.23**	14.87	14.04
	Other services (%) (2017)	**7.95**	5.52	5.08
Industrial employment by major industry	Extractive (%) (2016)	**0.51**	1.08	2.71
	Food and beverages (%) (2016)	**6.09**	14.21	16.57
	Textiles, apparel, leather and footwear (%) (2016)	**0.63**	3.18	5.50
	Wood, paper and printing (%) (2016)	**5.46**	6.46	7.46
	Chemicals (%) (2016)	**9.80**	10.30	9.49
	Non-metal industry (%) (2016)	**2.06**	3.45	4.01
	Metalworking (%) (2016)	**22.39**	13.83	12.52
	Electrical and electronic equipment (%) (2016)	**7.07**	7.77	6.47
	Machinery (%) (2016)	**13.15**	9.38	6.73
	Transport equipment (%) (2016)	**20.08**	12.79	9.27
	Other manufactured goods (%) (2016)	**7.45**	10.02	10.14
	Energy and water (%) (2016)	**0.55**	0.80	1.94
	Concentration index in 5 sectors (2016)	**40.14**	41.90	43.50

Source: Eurostat. Compiled by authors.

5.3 Structural determining factors linked to the sectoral structure

The lower weight of the primary sector and the greater concentration of employment in industry are somewhat more pronounced in the Basque Country than in the reference regions

As regards the sectoral structure (see Table 17), both the reference regions and the Basque Country are noteworthy for the less important role played by the primary sector, especially in the case of the Basque Country, where employment is much more heavily concentrated in industry. In the other main sectors, the differences are not as significant. It is in the distribution of industrial employment into major industries where the similarity between the reference regions and the Basque Country is most noticeable, as all of the industries that account for a greater share in the reference regions also do so in the Basque Country, and vice versa. In the case of the Basque Country, the less important role played by the food and beverage industry, textiles and footwear, and other manufactured goods is somewhat more extreme. This is offset by the stronger presence of the metals, machinery and transport equipment industries. As regards the concentration index for employment in the five largest industrial sectors, the reference regions also coincide with the Basque Country in having a lower concentration.

5.4 Structural determining factors linked to firm size and openness to foreign trade

The Basque Country coincides with the reference regions in the largest average size of manufacturing companies and the weight of sales in the region itself

Two other important structural conditions which are usually considered in analysing development are firm size and degree of openness. With regard to the first aspect, Table 18 indicates that in both the EU-28 and the reference regions, the size of manufacturing firms is triple that of services firms, with firm size being larger in the reference regions in both cases. The Basque Country coincides with the group of reference regions in having larger manufacturing firms, but not in the size of service firms, which is below the European average.

As regards the level of openness, in order to be able to have comparative data for all the regions, we have used the estimates produced by the PBL Netherlands Environmental Assessment Agency for trade in European regions, published by the JRC's RIS3 platform.[18] Both the Basque Country and the reference regions sell a larger proportion of what they produce within the domestic market of the region itself, and consequently, sell less to the rest of the country, the rest of the EU and the rest of the world. Specifically, foreign sales account for, on average, 18% of total sales for the EU-28, 14% for the reference regions and 12% for the Basque Country. In all cases, these foreign sales are predominantly to EU countries rather than those outside the EU. However, this trend is slightly less marked in the Basque Country and the reference regions.

[18] See http://s3platform.jrc.ec.europa.eu/s3-trade-tool. These are the most recent available estimates, and as they are of structural nature they probably haven't changed substantially.

TABLE 18 Firm size and openness to foreign trade indicators representative of structural conditions

	Basque Country	Reference regions	EU-28
Manufacturing firm size (2015)	**17.15**	18.22	14.42
Services firm size (2015)	**4.40**	5.94	4.90
Sales within the region (%) (2010)	**79.44**	80.49	73.75
Sales in the rest of the country (%) (2010)	**8.23**	5.18	10.91
Sales in the rest of the EU (%) (2010)	**6.94**	7.69	11.15
Sales in the rest of the world (%) (2010)	**5.39**	6.65	7.19

Source: Eurostat and JRC-EU trade. Compiled by authors.

5.5 Structural determining factors linked to governance

Lastly, there are a number of elements linked to governance which could also be considered structural conditions for development. The first of these elements, shown in Table 19, is the size of the public sector in the region. Whereas in the case of the Basque Country, it is smaller than the European average, the opposite is true in the reference regions. In contrast, they do coincide in the degree of decentralisation, and therefore, in the capacity of subnational governments to implement policies. In both cases, this is higher than the European average, quite markedly so in the case of the Basque Country. They also coincide as regards the quality of these institutions, which is also above the European average, quite clearly so in the Basque Country.

The Basque Country stands out for its lower weight in the public sector, the higher degree of decentralisation, and the quality of public institutions

TABLE 19 Governance indicators representative of structural conditions

	Basque Country	Reference regions	EU-28
Public Administration employment (%) (2017)	**22,83**	27,96	25,67
Decentralisation index (0–100) (2009)	**66,00**	50,10	47,29
Quality of government (2017)	**0,80**	0,63	–0,03

Source: Eurostat, BAK Basel Economics and European Commission. Compiled by authors.

5.6 Summary of structural determining factors

In summary, we can conclude that it has been confirmed that the Basque Country is more similar to the reference regions than to the average of European regions with regard to structural conditions, thus making it an appropriate group for comparison. Of course, there are greater similarities in some areas than in others. The greatest differences can be found in geo-demographic conditions. They are more similar in their sectoral structure, especially as regards industrial sectors (although heavy industry is somewhat more important in the Basque Country), in the larger average size of manufacturing firms and in their specialisation in physical sciences and engineering,

as well as mechanical engineering technology. Sales within the region itself are also higher than the European average in both cases, and there is a slightly greater inclination to seek out non-EU markets. Lastly, a noteworthy and important characteristic when it comes to implementing policy is that they coincide in terms of a higher degree of decentralisation and the quality of public institutions.

6
Conclusions

The overall impression from the analysis of this report is of a Basque economy that continues to improve in many areas relative to other European regions, and that is delivering results for its citizens in terms of economic and social wellbeing. This is not only a question of generating wealth, but also maintaining low levels of inequality and poverty, and strong reported wellbeing. Indeed, the positive evolution of these social outcomes suggests that the recovery is proving to be fairly inclusive, avoiding until now the 'dual development' scenario discussed in the 2015 Competitiveness Report. Yet it is important to note that this picture of overall performance comes in the context of a friendly global economic environment over recent years, and also that it is likely to hide diverse realities.

Indeed, there remain key areas where further research into outcomes would enable a more complete picture. In particular, given that economic wellbeing is better measured by the income available to households to consume, invest or save, further analysis of the factors which have prevented household disposable income from increasing to the same extent as GDP per capita is needed. Moreover we know that it is important to use a broader spectrum of indicators to measure wellbeing, such as those related to the Sustainable Development Goals or included in the Social Progress Index. There is a pending issue here with regards better measuring the impact of increased production on natural resources and the environment. A territory is only competitive if that competitiveness is sustainable over time, and future growth and personal wellbeing are not compromised by its negative impact on the environment.

In terms of diverse realities behind the headline figures, the report presents a mixed scenario with regards unemployment, a perennial concern in the Basque Country. While the statistics show that unemployment levels have fallen, the Basque Country remains poorly positioned in employment and unemployment indicators with respect to other European regions. There is clearly still capacity to activate sectors of society and create jobs, especially for young people and women. However, it is not just a matter of creating jobs, but of those jobs being high quality, offering both appropriate remuneration and stability while allowing for work-life balance. Trends point to an increase in automation in the future and greater job insecurity, which is becoming systemic as a result of new methods of production and labour relations. This opens up another important line for further research and applied analysis. Aspects of new employment scenarios need to be ex-

plored in depth to generate the conditions to create high quality jobs and ensure the right skills in a changing context, and to implement measures which ensure personal wellbeing when faced with a working future different from what we have been used to. This will require more strategic collaboration between training organisations, firms and government.

In a scenario where the final outcomes are generally positive it is important to avoid complacency and continue to work on weaknesses in the underlying determinants of territorial competitiveness. This is particularly so given the cyclical conditions in Europe that have accompanied the indicators analysed in recent years but that look much more uncertain in the medium term. Indeed the report notes that the recently strong export performance is likely to be related in part to the specialisation of the Basque economy in sectors that are more dependent on the economic cycle. As the tailwinds generated by the fall in interest rates, energy prices and monetary depreciation abate, a slowdown is expected. This may particularly affect the Basque Country given that, in comparison with the European average, its economy has a higher level of indebtedness, more dependence on foreign debt and high rates of openness. There are also significant uncertainties regarding demography, the environment, resources, social cohesion and geopolitical factors that could rapidly precipitate significant changes in markets and trade. In this scenario it is more necessary than ever to build a deep understanding of what drives Basque competitiveness and to foster continual improvements in the conditions and behaviours necessary to continue delivering strong economic and social performance. This inevitably includes focusing on some of the 'weak spots' that are already well-known and particularly evident in small firms in the Basque Country. In general it means continuing to improve in innovation, productivity, internationalisation and strategic investments in key areas of specialisation.

Innovation is central to long-run economic performance, and while the analysis of this report points to an increase in efficiency in innovative activity, the Basque Country still has a way to go to achieve noteworthy levels in several of the innovation indicators considered. Given the positive financial position of firms, it seems feasible that they will return to more active innovation behaviour, again increasing R&D and innovation investments. But it will also be important to encourage a larger number of SMEs to introduce both technological and non-technological innovations which make possible higher sales of innovative products. It would be dangerous if the increase in efficiency – achieved in many cases in a passive manner due to a reduction in R&D expenditure – meant that a more explorative route to innovation had been abandoned. As mentioned in previous reports, it is ambidexterity in different spheres, among them balancing exploration and exploitation in innovation investments, which ensures that it is possible to continue increasing productivity into the future.

It has in fact been the increase in productivity alongside pay restraint that has made the positive trend in unit labour costs possible (although productivity increases are evident to a greater extent in the economy as a whole than in the manufacturing industry). This current strength in unit labour costs compared to other territories suggests that it is now possible to relax long-standing pay restraint. This would allow an increase in wages and salaries, to the benefit of greater wellbeing for workers. Competitiveness would not be damaged if productivity increases are maintained through continuing to advance in the efficiency of innovation behaviour supported by strong education, training and skills. In this regard the indicators analysed in this report

point to a population which is continuing to educate itself through both formal education (academic and vocational) as well as non formal education. However, the importance of education and training to boosting productivity and facilitating higher wages, as well as supporting new, emerging specialisation paths, suggests this as a key area for deeper research.

When it comes to the current specialisation of the Basque economy, the report highlights various strengths. In general, the high rate of exports, commercial specialisation and positive relative balance of trade in the metal and mechanical industries are reinforced by corresponding scientific and technological strengths. However, there are some gaps worth considering for an efficient rollout of the current smart specialisation strategy. For the biosciences/health priority it should be noted that that data continues to indicate a lack of scientific specialisation, although technological developments in recent years have resulted in a slight specialisation in the chemicals industry (especially pharmaceuticals). Exports have also not yet established themselves in this priority area, nor in the opportunity niche related to food.

There are also some warning signs for the advanced manufacturing / Industry 4.0 priority, where weaknesses are identified with regards commercial specialisation in computer and electronic products and in electronic materials and equipment (despite the positive balance of trade achieved by the latter). There is also a significant technological under-specialisation in electronic engineering which could compromise the development of innovations in this industry, unless they are offset by scientific specialisation in related areas. This is combined with an identified lack of ICT specialists to support the development of digital services. And although the development of digitalization is generally well implemented in the Basque Country, a higher rate of use among households is still needed.

Finally, the strong performance of Basque exports is a notable feature of the internationalisation landscape in the recent period of economic expansion. It is particularly positive that exports have performed so well in a period when increasing Spanish domestic demand could have dampened firms need to look to international markets. There is a growing base of exporters which, in many cases, make small volumes of exports. This is encouraging in that a wider pool of regular exporters are becoming established. It is therefore advisable to strengthen measures which place importance on export intensity, supporting those firms that have embarked on this path to enable them to increase volumes of foreign sales and consolidate their presence in international markets.

In conclusion, this is a report that evidences good progress in a wide range of indicators that reflect Basque competitiveness. However, the relative position of the Basque Country has deteriorated in some of those indicators, re-enforcing the need to continue monitoring progress not only in absolute terms, but also in relative terms. Ultimately competitiveness implies improving relative to others. In particular the comparison with reference regions, those which have structural conditions most similar to the Basque Country, is generally not so positive, suggesting continual monitoring, analysis and action. Analysis and action should also factor in the existing uncertainties and emerging trends in the European and global economy so as to anticipate and respond fast to both threats and opportunities in a volatile global scenario.

Glossary of acronyms

BACH	Bank for the Accounts of Companies Harmonised
CCAA	Spanish autonomous communities
CRC	Cooperative research centre
CWTS	Centre for Science and Technology
DESI	Digital Economy and Society Index
EBIT	Earnings Before Interest and Taxes
EICT	Electronic, information and communication technologies
ESS	European Social Survey
EU	European Union
GDP	Gross domestic product
GVA	Gross value added
ICEX	Spanish Institute for Foreign Trade
ICT	Information and communications technology
Ine	National Statistics Institute
JRC	Joint Research Centre
LCE	Labour cost per employee
NEET	Not in education, employment or training
NULC	Nominal unit labour cost
OECD	Organisation for Economic Co-operative and Development
PCT	Patent Cooperation Treaty
PPP	Purchasing power parity
R&D	Research and development
RIS3	Research and Innovation Strategies for Smart Specialisation
ROA	Return on assets
RULC	Real unit labour cost
ULC	Unit labour cost
WoS	Web of Sciences

This report analyses more than 50 indicators that allow the competitiveness of the Basque Country to be assessed, in accordance with the regional competitiveness framework drawn up by Orkestra.

The general impression given is that the Basque Country's economy is continuing to improve in many areas, and that it is obtaining positive results for citizens in areas of economic and social welfare. However, the Basque Country's relative position has worsened in several indicators and this is particularly worrying in relation to the group of reference regions; indicating a continuous need for monitoring, analysis and intervention in various areas.

It is important to continue to focus on some of the "weaknesses" that are already well known, and especially applicable to small businesses in the Basque Country. **Overall, this translates into a need to further improve innovation, productivity, internationalisation and strategic investments in key areas of expertise.**

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