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ATLANTIC RAIL FREIGHT CORRIDOR OBSERVATORY

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INTRODUCTION

The Atlantic Corridor (formerly European Rail Freight Corridor No. 4) covers the western coastline of the European continent and connects the various components of the railway network with inland and port terminals: these infrastructure and services connection allow to address the freight transport market of the major platforms from Algeciras on the Strait of Gibraltar up to Le Havre until the Northern Range.

The Corridor is connected with four other European Rail Freight Corridors and is the main way of access to the Iberian Peninsula from Germany through France. As such, it plays a major role in the trans-Pyrenean traffic of goods and international flows along its perimeter, connecting territories and industries to their clients and logistics operators. In order to assess its potentialities and in accordance to the Regulation EU913/2010 defining its competencies, the Atlantic Corridor conducts and updates the Transport Market Study (TMS).

In the meanwhile, the Atlantic Corridor faces internal and contextual challenges. Internally, its design is changing with an extension to Germany, an extension from Zaragoza to Vitoria and the propagation of UIC rail gauge to Valladolid. Externally, its economical context is precarious and changing due to political orientations and business uncertainty. All these aspects require a more accurate monitoring performed continuously in parallel with the TMS updates.

This annual report presents the key facts and figures covering recent years until 2018, illustrating the socio-economic and transport market environment of the Corridor, the overall transport demand evolution and the corridor offer performance.

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1. SOCIO ECONOMIC AND TRANSPORT MARKET ENVIRONMENT

1.1 Gross Domestic Product (GPD) evolution

The gross domestic product (GDP) measures the economic activity of a country. It represents the value of all goods and services produced in a determined period of time excluding the value of any goods or services used in their creation. Specifically, it is the sum of consumptions, investments and the balance of trade for a fiscal year.

1.1.1 Real tendency

Economic growth is provoked by an increase in demand and/or supply. These new production and consumption are expected to need transport services, reason why **GDP growth will boost growth in rail freight activity**.

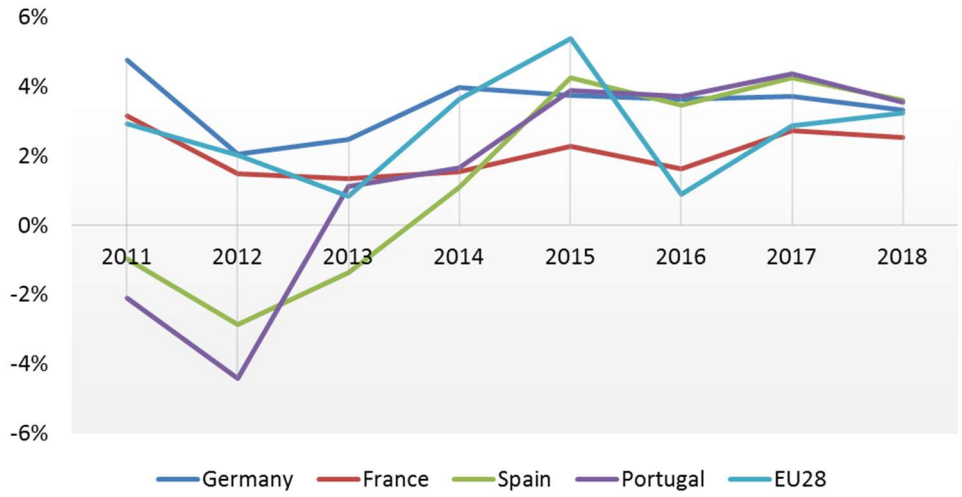
Next table presents the evolution of the Gross Domestic Product (GDP) in the period 2010-2018 in current prices for the countries composing the Atlantic Corridor.

Table 1 – GDP annual growth in current prices

	Germany	France	Spain	Portugal	EU28
2011	4,77%	3,16%	-0,97%	-2,09%	2,93%
2012	2,04%	1,48%	-2,86%	-4,41%	2,01%
2013	2,46%	1,36%	-1,36%	1,11%	0,85%
2014	3,98%	1,54%	1,10%	1,65%	3,63%
2015	3,75%	2,26%	4,26%	3,89%	5,38%
2016	3,64%	1,62%	3,48%	3,71%	0,90%
2017	3,72%	2,73%	4,25%	4,36%	2,88%
2018	3,32%	2,53%	3,59%	3,55%	3,23%

Source: Eurostat, INSEE (Institut national de la statistique et des études économiques), INE (Instituto Nacional de Estadística) de España, INE (Instituto Nacional de Estatistica) de Portugal

Figure 1 – Evolution of GDP annual growth in current prices



Source: Eurostat, INSEE (Institut national de la statistique et des études économiques), INE (Instituto Nacional de Estadística) de España, INE (Instituto Nacional de Estatistica) de Portugal

In last year, two tendencies can be appreciated. First, the **countries in the Atlantic Corridor have all decreased their growth rates with respect to previous year**. On the other hand, the European union as a whole has managed to increase overall growth rate, which was below the selected counties' rate except France. However, this differentiated trends are later explained by the evolution of inflation rates.

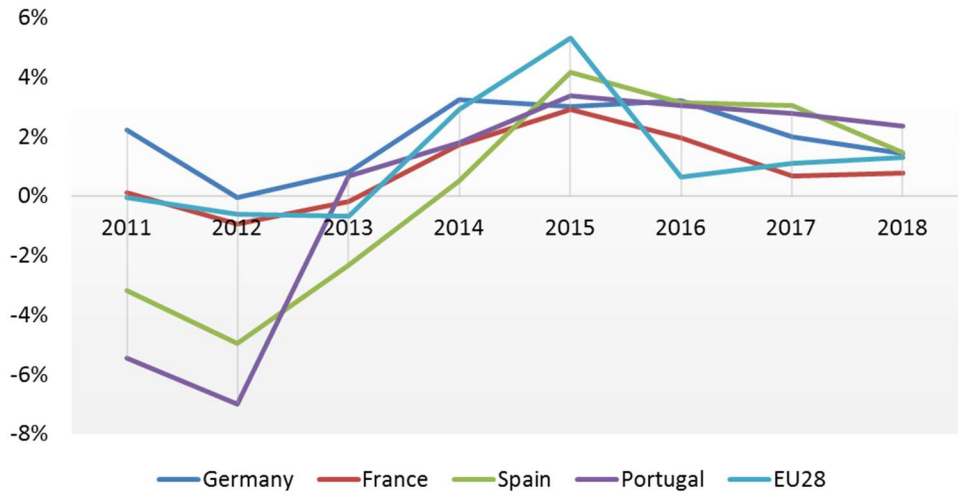
The following table and figure presents the GDP growth rates in constant prices. Here can be seem that the slowdown also affects the EU28 group of countries and in a similar manner. **All countries seem to have decreased growth rates around half percentage point with respect to 2017**. This can be explained by several factors. As the worst effects of the economic crisis (high unemployment, GDP loss) fade away with recovery, the GDP growth rates go back to lower rates around 2%. On the other hand, global economy has been showing signs of deceleration lately, which might have reach Europe.

Table 2 – GDP annual real growth

	Germany	France	Spain	Portugal	EU28
2011	2,23%	0,12%	-3,18%	-5,46%	-0,06%
2012	-0,06%	-0,94%	-4,97%	-6,99%	-0,61%
2013	0,80%	-0,17%	-2,33%	0,67%	-0,66%
2014	3,24%	1,74%	0,50%	1,80%	2,93%
2015	3,03%	2,91%	4,16%	3,37%	5,31%
2016	3,22%	1,97%	3,16%	3,05%	0,63%
2017	1,99%	0,68%	3,06%	2,77%	1,11%
2018	1,43%	0,77%	1,47%	2,35%	1,31%

Source: Eurostat, INSEE (Institut national de la statistique et des études économiques), INE (Instituto Nacional de Estadística) de España, INE (Instituto Nacional de Estatística) de Portugal

Figure 2 – Evolution of GDP annual real growth



Source: Eurostat, INSEE (Institut national de la statistique et des études économiques), INE (Instituto Nacional de Estadística) de España, INE (Instituto Nacional de Estatística) de Portugal

The tables and figures below present the GDP evolution at NUTS2 level of regions in which the Atlantic Corridor passes through.

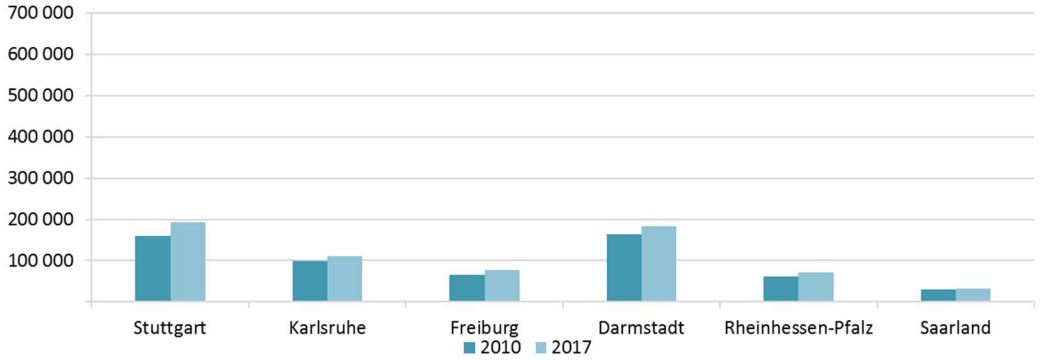
- Germany

Table 3 – GDP of German NUTS2 of Atlantic Corridor (M€, 2010 constant prices)

	Stuttgart	Karlsruhe	Freiburg	Darmstadt	Rheinhessen-Pfalz	Saarland
2010	160 448	98 947	66 149	163 559	61 396	30 383
2011	166 281	100 990	68 560	166 132	62 725	31 466
2012	167 544	100 070	68 332	164 877	63 435	31 111
2013	168 547	100 065	69 288	166 623	63 163	30 419
2014	174 255	101 557	71 960	172 733	64 734	31 494
2015	185 320	106 011	73 983	177 326	68 105	32 588
2016	190 921	109 364	76 377	181 402	69 777	32 888
2017	192 427	111 553	78 306	183 626	71 092	32 514
CAGR 2010-17	**2,63%**	**1,73%**	**2,44%**	**1,67%**	**2,12%**	**0,97%**

Source: Eurostat

Figure 3 – Evolution of GDP of German NUTS2 of Atlantic Corridor (M€, 2010 constant prices)



Source: Eurostat

The tendency of German Regions GDP has kept a constant growth in last years. It can be observed that Stuttgart and Freiburg stand out with a more favourable evolution. Moreover, it should be noted that the data available from the year 2016 up to now evidence a slowed increase in comparison with the evolution in previous years and that Saarland region presents a minor evolution.

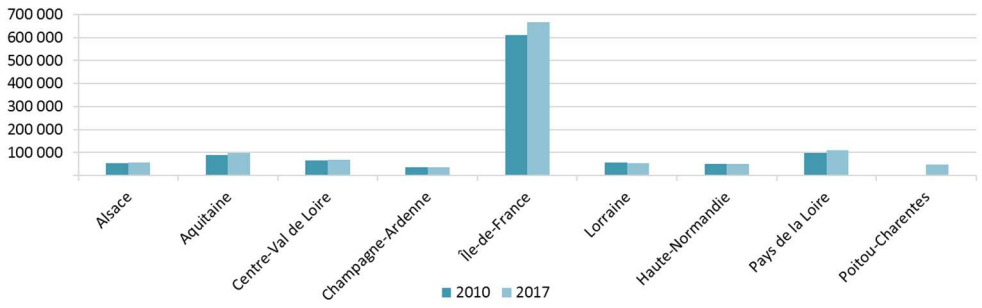
- France

Table 4 – GDP of French NUTS2 of Atlantic Corridor (M€, 2010 constant prices)

	Alsace	Aquitaine	Centre-Val de Loire	Champagne-Ardenne	Île-de-France	Champagne-Ardenne	Haute-Normandie	Pays de la Loire	Poitou-Charentes
2010	52 363	87 778	65 691	35 394	609 979	35 394	49 009	96 709	43 415
2011	53 908	90 982	67 197	37 422	609 994	37 422	50 214	101 023	44 834
2012	53 166	90 980	66 832	36 094	616 486	36 094	50 236	101 099	45 321
2013	53 668	90 510	66 810	36 107	625 453	36 107	50 304	101 985	45 388
2014	54 196	91 875	66 794	35 829	630 794	35 829	50 250	103 374	46 043
2015	54 356	93 041	67 244	35 645	639 245	35 645	50 690	104 913	45 992
2016*	55 131	94 821	67 319	35 119	649 533	54 922	50 634	106 640	47 110
2017*	56 454	97 705	67 462	34 904	665 798	54 550	50 763	109 186	48 297
CAGR 2010-17	**0,7%**	**1,2%**	**0,5%**	**0,1%**	**0,9%**	**0,1%**	**0,7%**	**1,6%**	**1,2%**

*Source: INSEE (Institut national de la statistique et des études économiques). *The table has been completed with own estimations based on Eurostat data for years 2016 and 2017.*

Figure 4 – Evolution of GDP of French NUTS2 of Atlantic Corridor (M€, 2010 constant prices)



Source: INSEE (Institut national de la statistique et des études économiques)

Two main points can be appreciated in the graph, an slight expansion in most of the regions during the period analysed and the importance of Île de France in the region. Although GDP resisted solidly the economic crisis, the growth in French regions has been rather low in the las decade. 2017 was a positive year for regions like Ile de France, Aquitaine or Pays de la Loire.

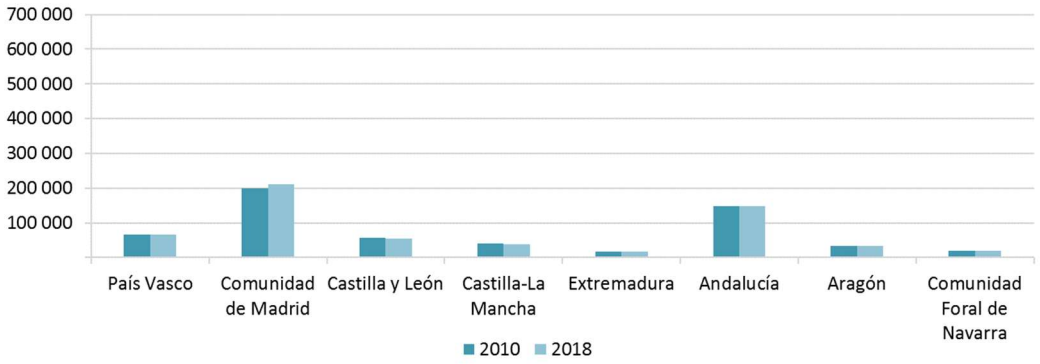
Spain

Table 5 – GDP of Spanish NUTS2 of Atlantic Corridor (M€, 2010 constant prices)

	País Vasco	Comunidad de Madrid	Castilla y León	Castilla-La Mancha	Extremadura	Andalucía	Aragón	Comunidad Foral de Navarra
2010	65 687	198 641	55 870	39 608	18 250	147 142	34 367	18 565
2011	63 226	193 658	53 535	37 768	17 224	141 113	32 839	17 957
2012	60 509	186 057	50 539	35 674	16 169	133 411	30 773	16 884
2013	58 478	181 127	48 292	34 349	15 871	129 533	30 421	16 592
2014	59 547	183 518	48 416	33 730	15 889	131 506	30 717	17 009
2015	61 783	192 987	50 414	35 661	16 809	138 578	31 436	17 664
2016	63 898	200 576	52 194	37 088	17 439	142 577	32 813	18 285
2017	65 471	204 713	52 594	37 798	17 818	145 689	33 791	18 683
2018	66 763	210 464	53 515	38 607	18 066	147 916	34 435	19 092
CAGR 2010-18	**0,20%**	**0,73%**	**-0,54%**	**-0,32%**	**-0,13%**	**0,07%**	**0,02%**	**0,35%**

Source: INE (Instituto Nacional de Estadística) de España

Figure 5 – Evolution of GDP of Spanish NUTS2 of Atlantic Corridor (M€, 2010 constant prices)



Source: INE (Instituto Nacional de Estadística) de España

Regions of Spain continued with a moderate growth during 2018. The country is recovering positively from the economic crisis and its regions have already reached values of the year 2010. Comunidad de Madrid and País Vasco present the most advanced improvements.

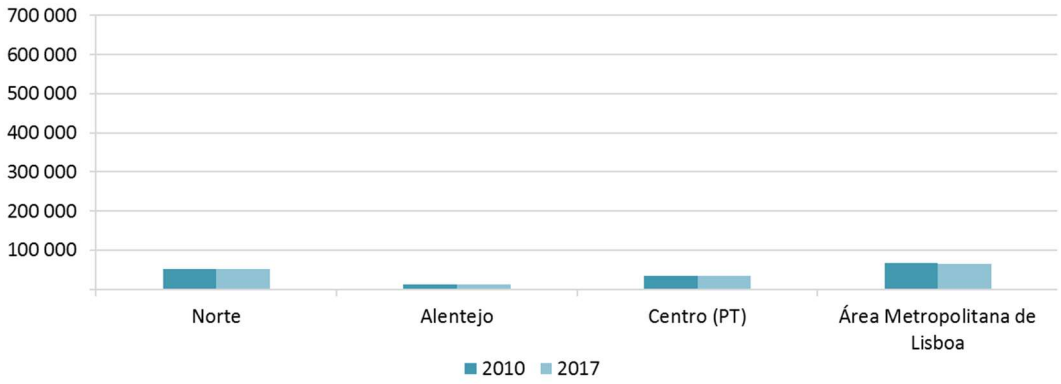
- Portugal

Table 6 – GDP of Portuguese NUTS2 of Atlantic Corridor (M€, 2010 constant prices)

	Norte	Alentejo	Centro (PT)	Área Metropolitana de Lisboa
2010	50 785	11 785	33 611	67 575
2011	48 181	11 107	31 723	63 672
2012	45 514	10 249	29 824	58 396
2013	46 201	10 189	30 091	58 720
2014	47 617	10 414	30 602	59 263
2015	49 218	11 144	31 911	60 494
2016	51 061	11 243	32 782	62 106
2017	52 377	11 654	33 633	64 032
CAGR 2010-17	**0,44%**	**-0,16%**	**0,01%**	**-0,77%**

Source: INE (Instituto Nacional de Estatística) de Portugal

Figure 6 – Evolution of GDP of Portuguese NUTS2 of Atlantic Corridor (M€, 2010 constant prices)



Source: INE (Instituto Nacional de Estatística) de Portugal

Similarly to its Iberian Peninsula partner, Portugal presented a slow growth in last years. In 2017 all the regions have increased their GDP volume with a rate around 3% and the country is recovering 2010 GDP volumes. The Metropolitan Area of Lisbon is experimenting the lowest growth.

The differences exposed between the countries involved in the Atlantic Corridor, which can be considered northern and southern EU countries, are due to a wide range of factors such as economic structure, GDP composition, government policies, etc.

1.1.2 Forecast and comparison with TMS

New predictions have not been published since last version of this report, so the analysis limits to data previously commented. In this section the GDP estimations from the Traffic and Market Research Update for the Atlantic Corridor[1] are compared with more recent GDP estimates from official sources such as the European Comission.

For comparison purposes, the table below presents the accumulated growth achieved in each country in the period 2010-2015.

Table 7 – Accumulated GDP growth in 2010 – 2015 (constant prices)

	2010-2015
Germany	10%
France	9%
Spain	-1%
Portugal	-7%

Source: Eurostat, INSEE (Institut national de la statistique et des études économiques), INE (Instituto Nacional de Estadística) de España, INE (Instituto Nacional de Estatistica) de Portugal

In the first Market Study for the Atlantic Corridor the econometric models were developed using the Ageing report's "Potential 2012" scenario series estimations for GDP. Later on, in the update of that report from December 2014, Prognos' GDP projections were used and compared with those of the Ageing Report 2012 and other sources.

The table below displays the projections of accumalated potential GDP growth taken into account in the TMS of December 2014. It is important to mention that forecasts in this chapter refer to potential GDP, this is the growth independent from the economic cycle, given that this can not be foreseen in the long term. However, this is similar to GDP growth in the long term.

Table 8 – Accumulated GDP growth forecasted in TMS (constant prices)

	2015-2020	2020-2030	2030-2050	2010-2050
Germany	10%	13%	18%	46%
France	5%	22%	40%	79%
Spain	8%	34%	35%	95%
Portugal	7%	23%	35%	77%

Source: Traffic and Market Research Update for the Atlantic Corridor - Phase 3. December 2014

The following table shows the expected GDP growth forecasted by the European Commission in the new 2018 Ageing Report for the countries covered by the Atlantic Corridor considering the time intervals of last the TMS of December 2014. In this update there have been substantial changes.

Table 9 – Updated forecast of accumulated potential GDP growth

	2015-2020	2020-2030	2030-2050	2010-2050
Germany	9%	15%	21%	59%
France	6%	12%	42%	57%
Spain	2%	8%	27%	39%
Portugal	2%	8%	18%	32%

Source: The 2018 Ageing Report. European Commission

[1] The GDP estimations present in TMS were based on Prognos' GDP evolutions.

The next table shows the difference between the 2018 European Commission forecast and the predictions presented in the TMS in terms of percentage points. The differences that have been corrected downwards are displayed in red, meaning that European Commission projections are not as optimistic as the TMS inputs. The differences where predictions have been enhanced are presented in green.

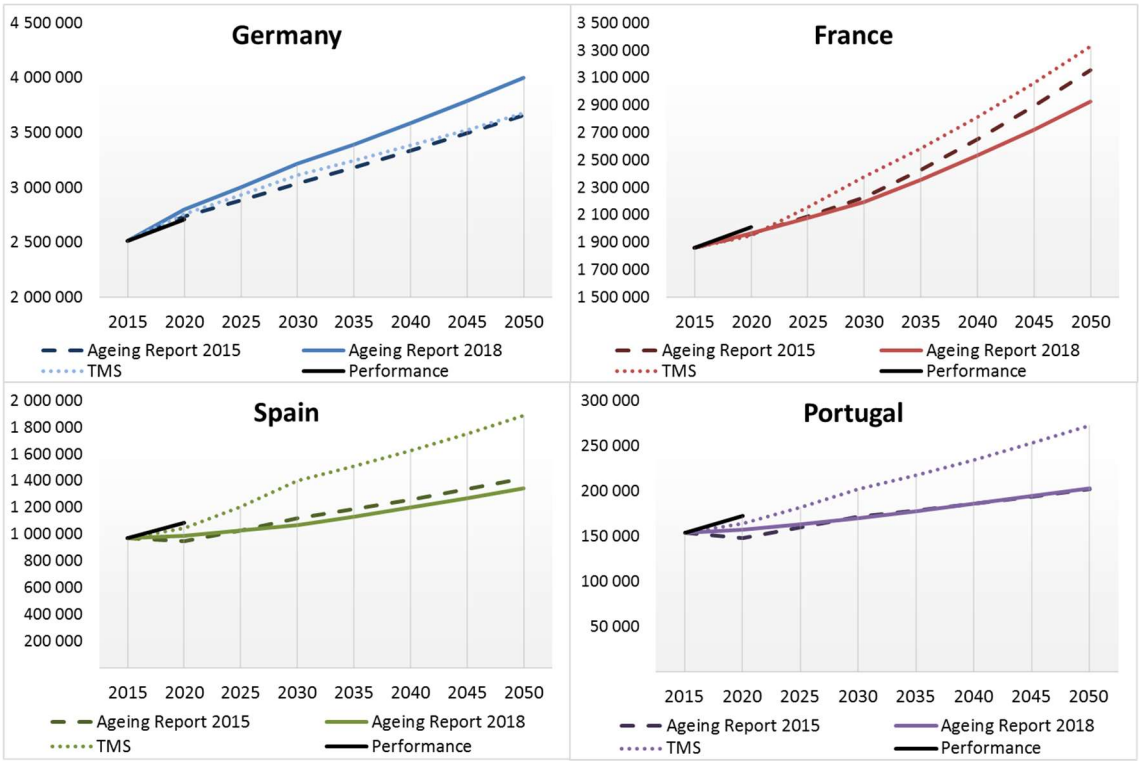
Table 10 – Difference between "The 2018 Ageing Report" and TMS forecasts

	2015-2020	2020-2030	2030-2050	2010-2050
Germany	-1%	2%	6%	13%
France	1%	-10%	-7%	-22%
Spain	-6%	-26%	-9%	-56%
Portugal	-5%	-15%	-15%	-45%

Source: Prepared with data from the Traffic and Market Research Update for the Atlantic Corridor - Phase 3. December 2014 and The 2015 Ageing Report. European Commission

The following graphs show the comparison between the estimations of GDP from the TMS (December 2014) and the projections of the European Commission from the Ageing Report 2018 for each country in the Atlantic Corridor. Forecasts from the Ageing Report 2015 used in the previous annual report of the Atlantic Rail Freight Corridor Observatory have also been included .

Figure 7 – Comparison between forecasts of GDP



Source: Prepared with data from the Traffic and Market Research Update for the Atlantic Corridor - Phase 3. December 2014, The 2015 Ageing Report. European Commission and The 2018 Ageing Report. European Commission

As shown in the previous graphs, the estimations of GDP of TMS December 2014 were much more optimistic than the current ones from European Commission for all countries except Germany. With respect to the previous Ageing Report 2015, the European Commission has also lowered the growth expectation for Spain and especially France in the long term. Portugal expectations remain almost unchanged. On the other hand, Germany improved its growth forecast substantially. This is due to

better projections in the labour input and employment, or in other words, the expectation of a larger work force in the long term, probably because of the unexpected migratory inflows that Germany has been receiving in the last years.

Compared to projections, real performance has different form. For France and especially, Spain and Portugal the actual growth has been higher than expected, while in Germany has been a bit lower. A reason for this might be that long term projections do not usually take into account the economic cycle and only consider structural factors. Given that the last economic crisis was rougher in Spain and Portugal, the growth of the recovery is above the long term one, and sooner or later, should star to decrease.

France and Germany presented a more steady economic activity in the period 2010-2017 than Spain and Portugal. Spain presents the fastest growth, above the 3% in the last years, while Germany appears to have the most resilient and constant economy.

2018 has been a year of economic growth in the countries of the Atlantic Corridor. However, GDP growth has been slightly reduced with respect to previous year, reduction that has been homogenous across countries.

Although no long term forecast have been published recently, the predictions of economic growth have worsen in the last year.

1.2 Unemployment evolution

The unemployment rate is calculated as the percentage of unemployed people in the labour force (active population), where unemployed are people who report that they are without a job and available for it, taking active steps to find a position in the last four weeks. This indicator allows to have an overview of the social condition of the economic activity across the Atlantic Corridor perimeter.

1.2.1 Real tendency

In this section, the evolution and situation of unemployment rate is analysed. Employment rate of a country is related to freight transport as it can be considered that a higher level of employment would lead to a growth in consumption, and consequently, would imply an increase in the volume of transport. This effect can be considered for both the road and rail traffic.

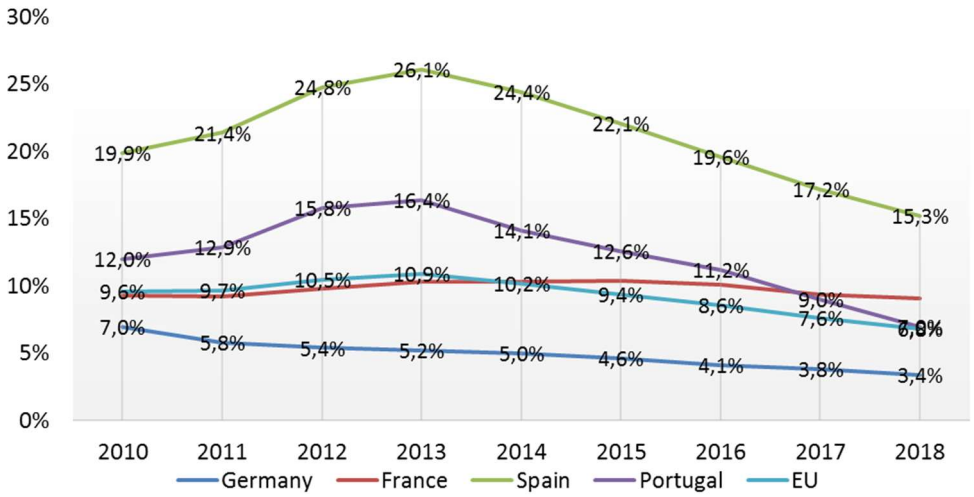
The following tables and graphics describe the situation of unemployment rate for the Atlantic Corridor countries and regions.

Table 11 – Unemployment rates (as a percentage of active population) in the period 2010-2018

	Germany	France	Spain	Portugal	EU28
2010	7,0%	9,3%	19,9%	12,0%	9,6%
2011	5,8%	9,2%	21,4%	12,9%	9,7%
2012	5,4%	9,8%	24,8%	15,8%	10,5%
2013	5,2%	10,3%	26,1%	16,4%	10,9%
2014	5,0%	10,3%	24,5%	14,1%	10,2%
2015	4,6%	10,4%	22,1%	12,6%	9,4%
2016	4,1%	10,1%	19,6%	11,2%	8,6%
2017	3,8%	9,4%	17,2%	9,0%	7,6%
2018	3,4%	9,1%	15,3%	7,0%	6,8%

Source: Eurostat. INSEE (Institut national de la statistique et des études économiques). INE (Instituto Nacional de Estadística) de España. INE (Instituto Nacional de Estatistica) de Portugal. Inquérito ao Emprego

Figure 8 – Evolution of unemployment rate (as a percentage of active population) in the period 2010-2018



Source: Eurostat. INSEE (Institut national de la statistique et des études économiques). INE (Instituto Nacional de Estadística) de España. INE (Instituto Nacional de Estatistica) de Portugal. Inquérito ao Emprego

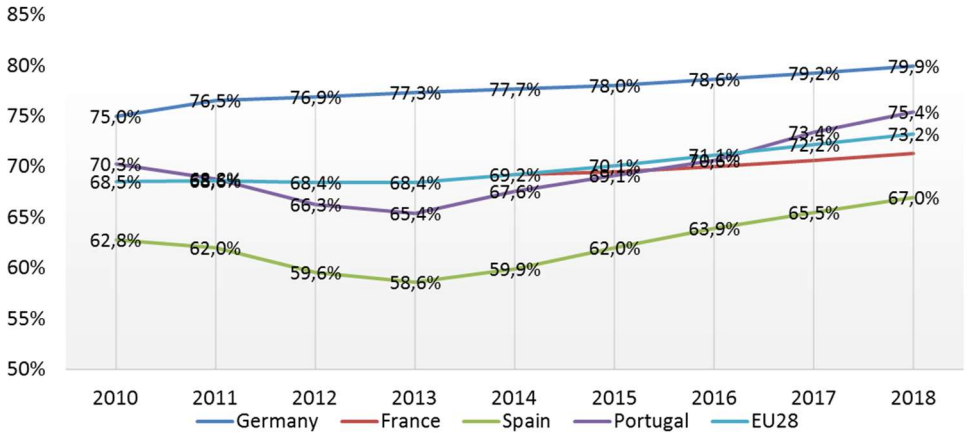
It can be observed important differences in the evolution and unemployment rate levels for the countries involved. The financial crisis 2008/2009 implied a hard increment of unemployment, notably for Spain and Portugal. Anyhow, the tendency since 2013 is to recover economic activity, and the unemployment rate is constantly decreasing year by year.

Spain has suffered the worst rates reaching a value of 26,1% in 2013 but is recovering approximately in 2 percentage points per year, which was indeed the improvement in 2018. Portugal also reached high values but currently is situated in the EU average rate, below France levels, and with a similar yearly reduction as Spain. In the case of Germany, it can be observed a constant decrease of unemployment since 2010. Germany has been capable of maintaining low unemployment levels throughout the crisis years.

As observed, employment is increasing as countries' economy is recovering, and so, higher needs of freight transport are expected.

The next graph shows the tendency of employment expressed as percentage of active population. In a consequent way with previous data, Portugal and France follow EU tendency and values while Spain is significantly in a lower range and Germany in a much higher range. Apart from the unemployment rate itself, this data highlights the influence of population composition. Europe population is ageing and active population available in each country is decreasing as natural balance gives negative results.

Figure 9 – Evolution of employment rate (as a percentage of 20-64 total population) in the period 2010-2018



Source: Eurostat

The tables and graphs below show the unemployment rate evolution in NUTS2 for the Atlantic Corridor regions.

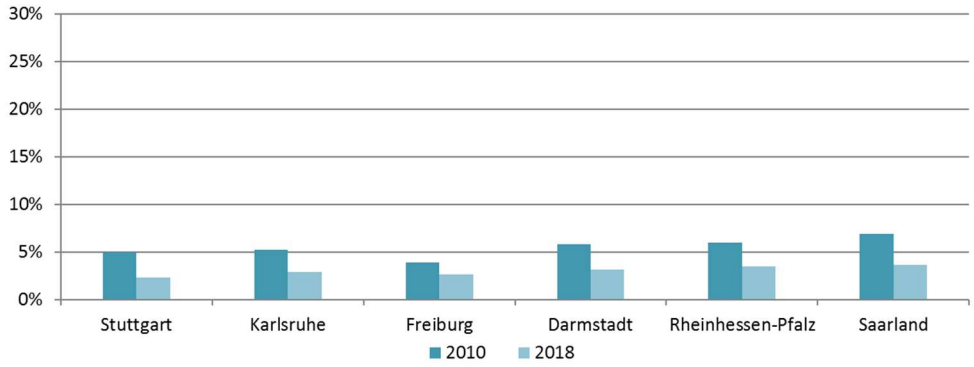
- Germany

Table 12 – Unemployment rates (as a percentage of active population) in German NUTS2 of Atlantic Corridor

	Stuttgart	Karlsruhe	Freiburg	Darmstadt	Rheinhessen-Pfalz	Saarland
2010	5,0%	5,2%	3,9%	5,8%	6,0%	6,9%
2011	3,6%	4,2%	3,0%	4,7%	5,2%	5,8%
2012	3,4%	4,0%	2,9%	4,8%	4,3%	6,3%
2013	3,7%	3,6%	2,9%	4,3%	4,4%	6,0%
2014	3,1%	3,5%	3,0%	4,5%	4,0%	5,8%
2015	3,4%	3,3%	2,5%	4,1%	4,1%	5,6%
2016	3,3%	3,1%	3,0%	4,0%	4,1%	4,9%
2017	3,0%	3,3%	2,9%	3,6%	3,8%	4,5%
2018	2,3%	2,9%	2,6%	3,1%	3,5%	3,6%

Source: Eurostat

Figure 10 – Evolution of unemployment rates (as a percentage of active population) of German NUTS2 of Atlantic Corridor



Source: Eurostat

As observed before, Germany kept a low unemployment level in last years and a slight but constant decrease of it. Regions present similar levels, being the maximum difference a 1,5% for the last data. In 2018 all regions reduced their unemployment levels and situated around a 3%.

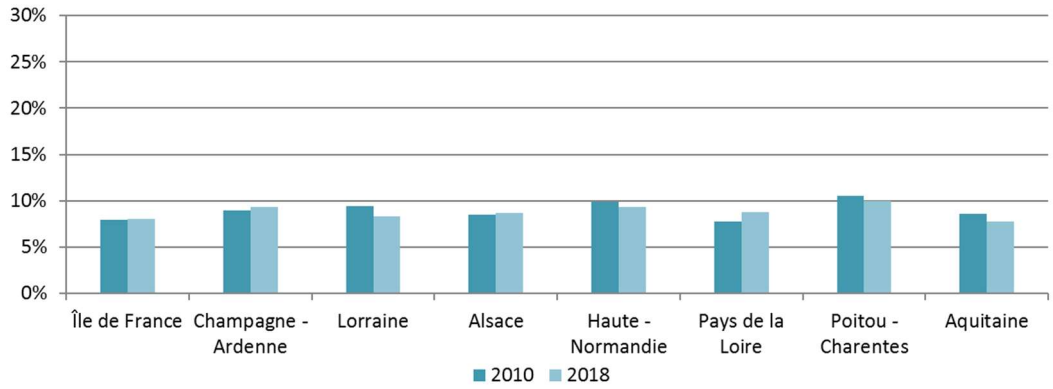
- France

Table 13 – Unemployment rates (as a percentage of active population) in French NUTS2 of Atlantic Corridor

	Alsace	Aquitaine	Centre - Val de Loire	Champagne-Ardenne	Haute-Normandie	Île de France	Lorraine	Pays-de-la-Loire	Poitou-Charentes
2010	8,1%	8,1%	7,0%	9,2%	9,7%	8,5%	9,4%	8,5%	7,7%
2011	7,4%	9,0%	8,3%	10,3%	8,9%	8,2%	10,1%	8,5%	8,1%
2012	8,5%	9,4%	10,8%	10,7%	10,9%	8,1%	11,7%	8,4%	8,3%
2013	9,7%	8,9%	10,6%	10,5%	11,6%	9,0%	12,1%	8,8%	9,9%
2014	10,1%	9,1%	9,5%	11,4%	11,9%	9,7%	11,8%	8,6%	10,9%
2015	9,3%	9,8%	10,7%	13,0%	10,6%	9,6%	12,2%	9,1%	9,7%
2016	10,9%	10,1%	9,9%	11,3%	11,5%	9,2%	11,8%	8,8%	9,0%
2017	9,0%	10,2%	8,6%	9,5%	11,3%	8,7%	11,0%	7,1%	9,0%
2018	8,0%	9,3%	8,3%	8,7%	9,3%	8,8%	10,0%	7,8%	8,6%

Source: INSEE (Institut national de la statistique et des études économiques)

Figure 11 – Evolution of unemployment rates (as a percentage of active population) of French NUTS2 of Atlantic Corridor



Source: INSEE (Institut national de la statistique et des études économiques)

French regions have reached in general similar levels of unemployment as in 2010. It is worth mentioning that the good evolution in 2018 matches economic growth expectations mentioned in the previous chapter. Another interesting fact is that unemployment ranges in a short gap across regions regardless of the their economic weight, proof of a having a consistent economy.

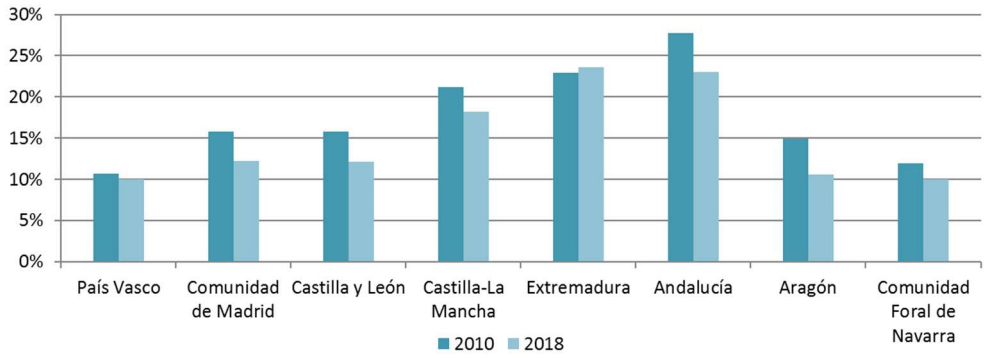
- Spain

Table 14 – Unemployment rates (as a percentage of active population) in Spanish NUTS2 of Atlantic Corridor

	País Vasco	Comunidad de Madrid	Castilla y León	Castilla-La Mancha	Extremadura	Andalucía	Aragón	Comunidad Foral de Navarra
2010	10,7%	15,8%	15,8%	21,2%	23,0%	27,8%	15,0%	11,9%
2011	12,4%	16,3%	16,9%	23,1%	25,1%	30,1%	17,1%	13,0%
2012	15,6%	18,5%	19,8%	28,6%	33,1%	34,4%	18,7%	16,2%
2013	16,6%	19,8%	21,8%	30,0%	33,9%	36,2%	21,4%	17,9%
2014	16,3%	18,7%	20,8%	29,0%	29,8%	34,8%	20,2%	15,7%
2015	14,8%	17,1%	18,3%	26,4%	29,1%	31,5%	16,3%	13,8%
2016	12,6%	15,7%	15,8%	23,6%	27,5%	28,9%	14,7%	12,5%
2017	11,3%	13,3%	14,1%	20,8%	26,2%	25,5%	11,6%	10,2%
2018	10,0%	12,2%	12,1%	18,2%	23,6%	23,0%	10,6%	10,0%

Source: INE (Instituto Nacional de Estadística) de España

Figure 12 – Evolution of unemployment rates (as a percentage of active population) of Spanish NUTS2 of Atlantic Corridor



Source: INE (Instituto Nacional de Estadística) de España

Spanish regions present the highest unemployment rates with marked disparities between their regions. Southern regions such as Extremadura, Andalucía and Castilla-La Mancha stand out for higher unemployment levels. In 2018 almost all regions had already improved 2010 levels and good performance of the economy is expected to allow further decreases in years to come.

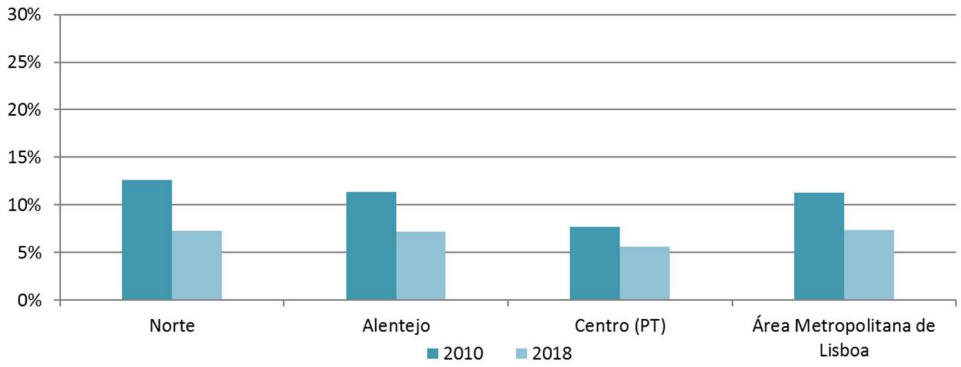
- Portugal

Table 15 – Unemployment rates (as a percentage of active population) in Portuguese NUTS2 of Atlantic Corridor

	Norte	Alentejo	Centro (PT)	Área Metropolitana de Lisboa
2010	12,6%	11,4%	7,7%	11,3%
2011	13,0%	12,4%	10,3%	14,1%
2012	16,1%	15,9%	12,0%	17,6%
2013	17,1%	16,9%	11,4%	18,5%
2014	14,8%	14,3%	10,6%	14,9%
2015	13,7%	13,3%	9,2%	13,1%
2016	12,0%	12,1%	8,4%	11,9%
2017	9,8%	8,4%	6,9%	9,5%
2018	7,3%	7,2%	5,6%	7,4%

Source: INE (Instituto Nacional de Estatistica) de Portugal. Inquérito ao Emprego

Figure 13 – Evolution of unemployment rates (as a percentage of active population) of Portuguese NUTS2 of Atlantic Corridor



Source: INE (Instituto Nacional de Estatística) de Portugal. Inquérito ao Emprego

Portuguese regions have also experienced a high level of unemployment but without reaching extreme levels as the Spanish ones. It has also been more stable across regions, having similar levels. Centro region has maintained the best results. 2010 levels were reached in 2016 and since then a great improvement has been registered, with lower levels than France and similar to EU average in 2018.

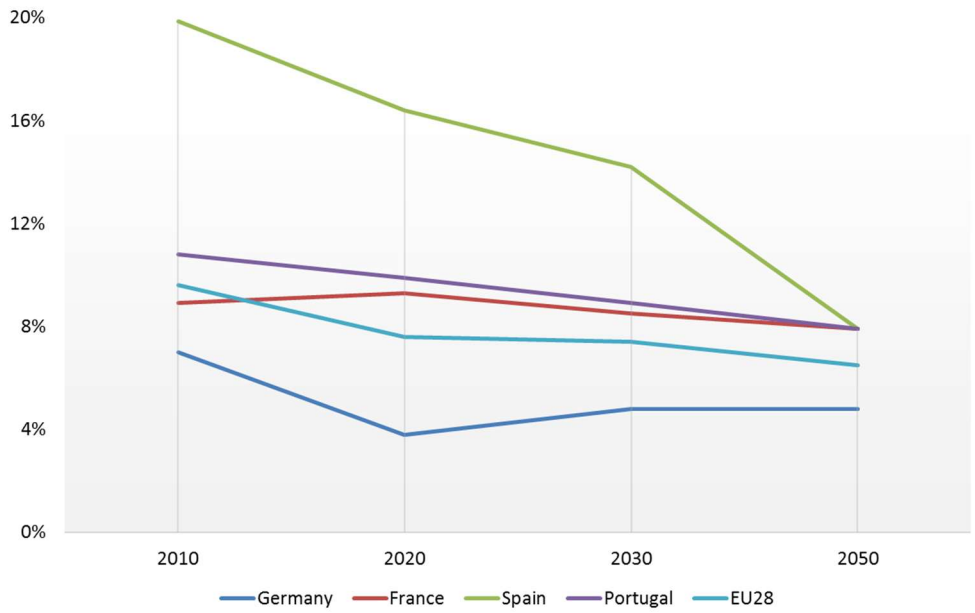
In conclusion, all Atlantic Corridor countries are experimenting a favourable tendency in employment levels and we can draw from previous analysis that some regions have more instable and seasonal economic activities such as tourism, while others present consolidated activities which are more resilient to variations in the economic cycles and provide better levels of security and continuity.

1.2.2 Forecast and comparison with TMS

As in the GDP chapter, there is no new forecasted data for unemployment, so the latest source of information still is the 2018 Ageing Report of the European Commission.

As for European Commission forecast regarding unemployment, the Ageing Report 2018 contains the expected unemployment rate for the countries of Atlantic Corridor and EU28 shown in the following graph:

Figure 14 – Forecasted evolution of unemployment rates in the period 2010-2050



Source: The 2018 Ageing Report. European Commission

The European Commission expects a convergence among unemployment rates across countries, reaching a range of 5% to 8%.

For the fifth consecutive year, economic growth has reached the labour market and unemployment has decreased. The accumulated reduction has made the unemployment rates go back to the levels before the financial crisis of 2008. However, there are regions were unemployment is still very high, especially in Spain.

1.3 Foreign trade evolution

The foreign trade, also called external trade, concerns the value of every commercial exchange of goods and services between countries at an international level. The differences between exports and imports is called the foreign trade balance of a country. It permits to highlight the capacity of a country to realize sales outside of its territories and its necessity to have external providers of products for intermediate or final consumption. The evolution of foreign trade for a pair of countries is partly linked to the volumes of goods transported between each via the custom value of goods and except the value of services exchanged.

1.3.1 Real tendency

Trade has been traditionally linked to transport and has a positive effect on it. As mentioned before, the improvement of economy's factors is reflected on transport activity due to a higher transport demand. An expansion of consumption will pull from imports, while a larger production will result in more exportation. Both effects will demand freight transport services and boost rail freight activity.

The following tables and graphs show the annual growth rate of exports and imports in the countries of the Atlantic Corridor for 2010 – 2018 period in terms of goods and services value.

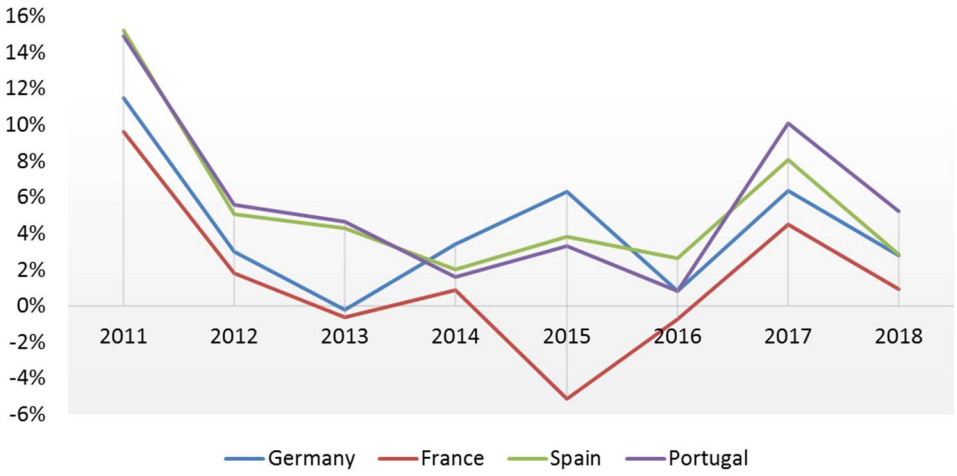
It can be observed there is a peak in the exports' value in 2011 for all the countries from when the rate growth starts to decrease. From 2016 to 2017 all the countries increased their growth but last year this new tendency was reduced again with worse results in 2018.

Table 16 – Exports' value annual growth rate in the period 2010-2018

	Germany	France	Spain	Portugal
2011	11,5%	9,6%	15,2%	14,9%
2012	3,0%	1,8%	5,1%	5,6%
2013	-0,2%	-0,6%	4,3%	4,6%
2014	3,4%	0,9%	2,0%	1,6%
2015	6,3%	-5,1%	3,8%	3,3%
2016	0,8%	-0,8%	2,6%	0,8%
2017	6,3%	4,5%	8,1%	10,0%
2018	2,8%	0,9%	2,9%	5,3%
CAGR 2010-2018	4,2%	1,3%	5,4%	5,7%

Source: Eurostat. Datacomex – Ministerio de Economia y Competitividad. INE Portugal - Estatísticas de Comércio Internacional de Bens

Figure 15 – Evolution of annual growth rate of exports' value in the period 2010-2018 (%)



Source: Statistisches Bundesamt. Direction Générale des Douanes et Droits Indirects. Datacomex – Ministerio de Economia y Competitividad. INE Portugal - Estatísticas de Comércio Internacional de Bens

Regarding the imports, the data show a similar tendency as for exports, with a full recovery in 2017 and a new trend change in growth for 2018. Although the evolution of imports and exports is connected, imports are more dependent on the country's economy performance despite of the role they have on important firms production chain and integrated economies. Exports, on the other hand, rely on the performance of partner countries.

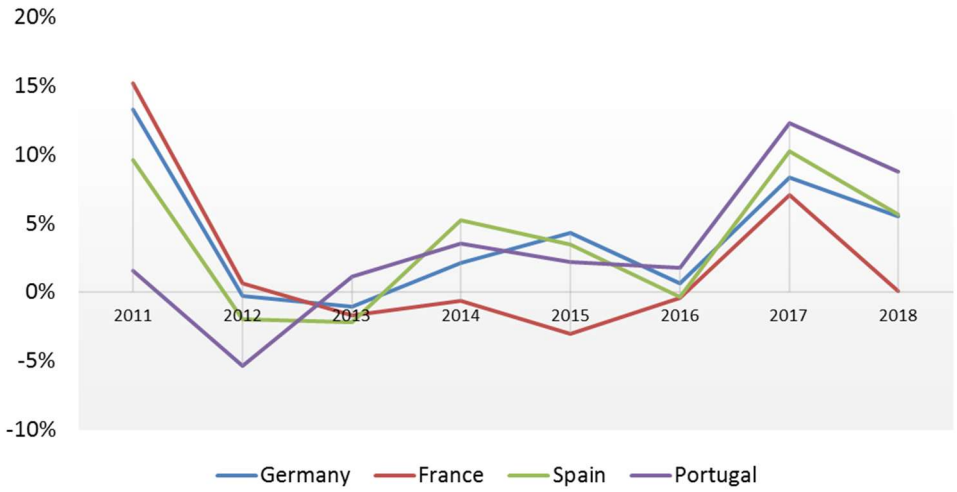
As it can be seen, 2018 ended up with worse results than 2017, but it has been a year marked by strong uncertainty and a challenging global economic context that points out a possible economic slowdown. In one hand, concerns have remained such as Brexit negotiations and, in the other hand, new complexities like the trade war between EEUU and China have appear.

Table 17 – Imports' value annual growth rate in the period 2010-2018

	Germany	France	Spain	Portugal
2011	13,3%	15,2%	9,6%	1,5%
2012	-0,3%	0,6%	-2,0%	-5,3%
2013	-1,1%	-1,7%	-2,2%	1,1%
2014	2,2%	-0,6%	5,2%	3,5%
2015	4,3%	-3,1%	3,5%	2,2%
2016	0,6%	-0,4%	-0,4%	1,8%
2017	8,3%	7,1%	10,3%	13,1%
2018	5,5%	0,1%	5,6%	8,0%
CAGR 2010-2018	**4,0%**	**2,0%**	**3,6%**	**3,1%**

Source: Eurostat. Datacomex – Ministerio de Economia y Competitividad. INE Portugal - Estatísticas de Comércio Internacional de Bens

Figure 16 – Evolution of annual growth rate of imports' value in the period 2010-2018 (%)



Source: Eurostat. Datacomex – Ministerio de Economia y Competitividad. INE Portugal - Estatísticas de Comércio Internacional de Bens

The tables below detail the exports and imports per country in absolute values for the same period.

Table 18 – Exports in the period 2010-2018 (M€)

	Germany	France	Spain	Portugal
2010	949 629	420 081	186 780	37 268
2011	1 058 897	460 448	215 230	42 828
2012	1 090 530	468 738	226 115	45 213
2013	1 088 071	465 708	235 814	47 303
2014	1 125 034	469 821	240 582	48 054
2015	1 195 822	445 643	249 794	49 634
2016	1 205 489	442 273	256 393	50 039
2017	1 281 914	462 205	277 126	55 029
2018	1 317 631	466 524	285 024	57 958

Source: Eurostat. Datacomex – Ministerio de Economia y Competitividad. INE Portugal - Estatísticas de Comércio Internacional de Bens

Table 19 – Imports in the period 2010-2018 (M€)

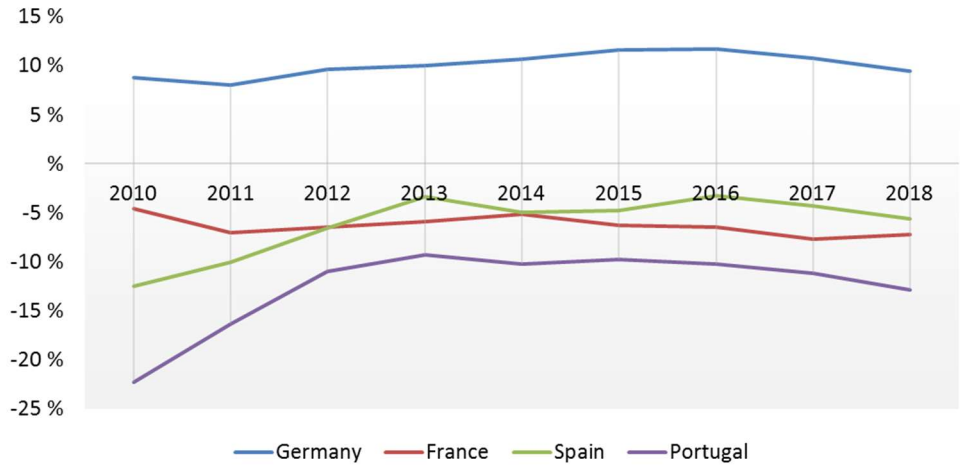
	Germany	France	Spain	Portugal
2010	795 666	460 572	240 056	58 647
2011	901 487	530 460	263 141	59 551
2012	898 857	533 743	257 946	56 374
2013	889 416	524 586	252 347	57 013
2014	908 575	521 203	265 557	59 032
2015	947 627	505 262	274 772	60 345
2016	953 761	503 272	273 779	61 424
2017	1 033 131	538 939	301 870	69 489
2018	1 089 842	539 379	318 864	75 033

Source: Eurostat. Datacomex – Ministerio de Economia y Competitividad. INE Portugal - Estatísticas de Comércio Internacional de Bens

The trade balance for each country has been calculated based on these data following the formula $(Ex - Im) \cdot 100/(Ex + I$.

In the analysis Germany stands out by being the only Atlantic Corridor country with positive results in its trade balance. The rest of them present negative results. It's important to mention that trade balance results for each year is largely influenced by commodity prices, especially oil. It is also detected a scarce variation on the results since 2013.

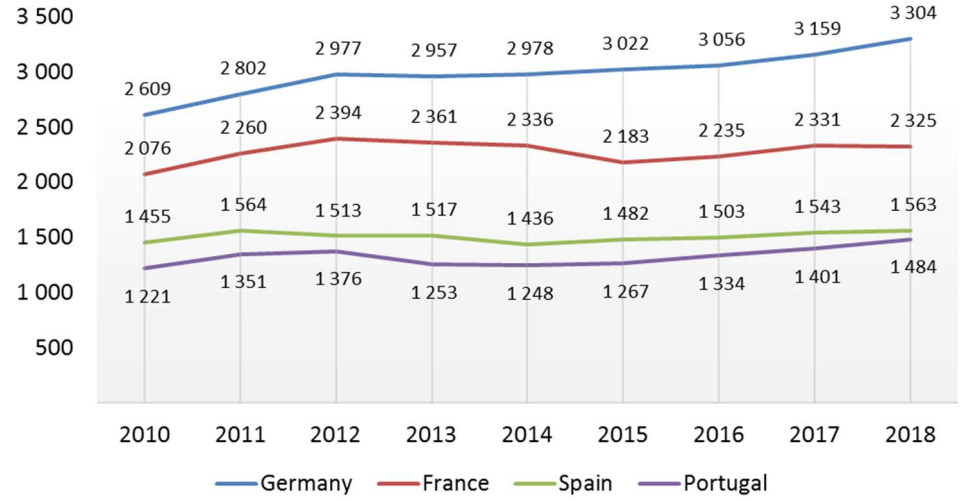
Figure 17 – Evolution of trade balance in the period 2010-2018 (%)



Source: Eurostat. Datacomex – Ministerio de Economia y Competitividad. INE Portugal - Estatísticas de Comércio Internacional de Bens

Trade data in weight and monetary value have been combined in order to obtain the value per tonne for imports and exports. It can be observed that the value per tonne for imports is lower than for exports, usual circumstance for developed countries which tend to export high added value goods and import low added value goods.

Figure 18 – Evolution value per tonne of exports in the period 2010-2018 (€/t)

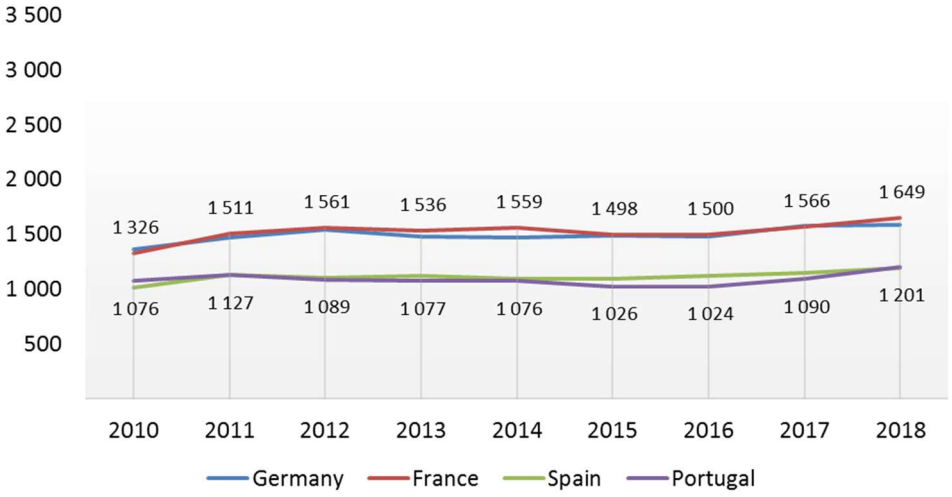


Source: Eurostat

Once again, Germany stands out with the highest value per tonne, followed by France. German value per tonne doubles the Spanish and Portuguese export values.

Regarding both the export and imports cost per tonne, Iberian Peninsula countries shows de lower difference between them.

Figure 19 – Evolution value per tonne of imports in the period 2010-2018 (€/t)



Source: Statistisches Bundesamt. Direction Générale des Douanes et Droits Indirects. Datacomex – Ministerio de Economia y Competitividad. INE Portugal - Estatísticas de Comércio Internacional de Bens

- Germany

Due to unavailability of data at NUTS2 level, the following section covers the analysis of German regions with data at NUTS1 level (Bundesländer). For the rest of the countries, data at level NUTS2 has been gathered.

Trade in the German regions of the corridor has been growing constantly with few exceptions. The whole country itself has an international trade sector growing significantly more than GDP, boosting German economy more than inner consumption. The growth rate of the regions here analysed is in line with national figures.

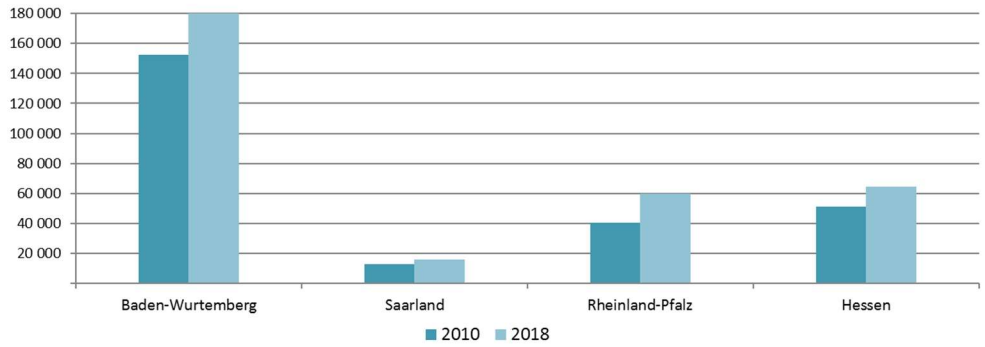
Table 20 – Exports of German NUTS1 of Atlantic Corridor (M€)

	Baden-Wurtemberg	Saarland	Rheinland-Pfalz	Hessen
2010	152 722	12 982	40 426	51 244
2011	171 910	14 768	44 841	55 409
2012	175 104	14 778	46 297	55 059
2013	173 299	13 286	46 507	56 946
2014	180 729	13 743	48 126	58 474
2015	195 988	15 280	51 320	60 007
2016	190 747	15 410	52 413	58 438
2017	200 235	16 534	54 833	63 237
2018	203 004	15 752	59 891	64 512
CAGR 2010-2018	**4,15%**	**2,80%**	**5,78%**	**3,34%**

Source: DeStatis Genesis Database

Baden-Wurtemberg is the main trading region in the area, being the capital Sttutgard the capital of the lander and the sixth largest city in Germany. The region is heavily industrialised, being home of several large companies very oriented to exports. So is Rheinland-Pfalz, which has experienced an even larger growth in exports. The main activities of the area include chemicals and pharma (BASF, Boehringer Ingelheim) and vehicle manufacturing (Daimler, Porsche).

Figure 20 – Evolution of exports of German NUTS1 of Atlantic Corridor (M€)



Source: DeStatis Genesis Database

Imports in German regions had a growth even higher than exports. However, volumes are still below exports with the only exception of Hessen, which is an important services producer due to its largest city Frankfurt. Baden-Wurtemberg stands out again as main importer of the area.

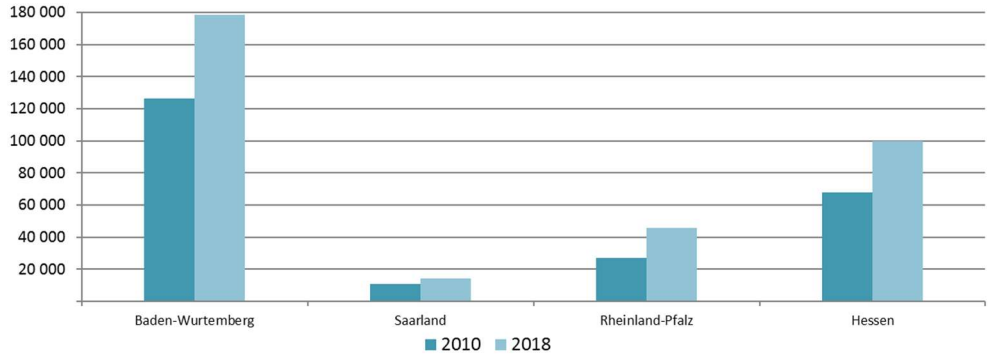
Table 21 – Imports of German NUTS1 of Atlantic Corridor (M€)

	Baden-Wurtemberg	Saarland	Rheinland-Pfalz	Hessen
2010	126 295	10 783	27 086	67 847
2011	143 409	12 947	31 495	76 796
2012	139 427	12 556	31 390	77 849
2013	137 148	11 466	31 184	78 882
2014	145 435	12 642	31 994	80 343
2015	155 748	13 078	34 212	83 281
2016	161 120	12 829	34 523	86 171
2017	170 036	14 332	40 348	94 498
2018	178 259	14 357	45 515	99 975
CAGR 2010-2018	**5,05%**	**4,17%**	**7,70%**	**5,69%**

Source: DeStatis Genesis Database

The growth of imports is probably related to the good performance of exports, which, being mostly manufactured goods, require raw goods and other imports.

Figure 21 – Evolution of imports of German NUTS1 of Atlantic Corridor (M€)



Source: DeStatis Genesis Database

- France

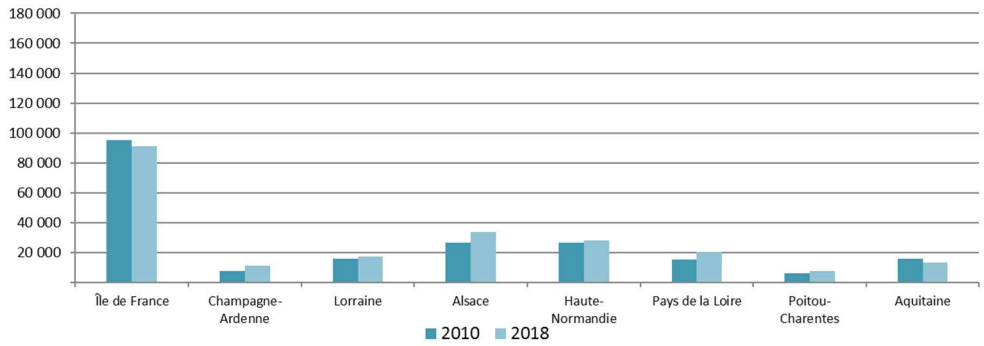
In 2018 France regions have continued with the tendencies from 2017, growing in export terms most of them. Pays de la Loire is the exception but this region counts with the second largest accumulated growth since 2010. As for the previous year, Aquitaine and Île de France regions have not yet recovered the export levels of 2014. Île de France stands out as the most exporting region.

Table 22 – Exports of French NUTS2 of Atlantic Corridor (M€)

	Île de France	Champagne-Ardenne	Lorraine	Alsace	Haute-Normandie	Pays de la Loire	Poitou-Charentes	Aquitaine
2010	95 211	7 990	16 089	26 856	26 769	15 528	6 065	16 069
2011	100 693	9 467	18 068	29 711	28 176	16 548	7 321	17 595
2012	97 883	10 273	17 882	29 059	26 825	18 120	7 880	16 114
2013	98 132	10 681	17 474	29 817	27 279	18 270	7 749	15 717
2014	100 015	11 358	16 795	30 421	27 562	17 742	7 350	14 988
2015	83 480	11 465	17 089	31 702	27 291	28 414	7 509	12 697
2016	84 480	11 246	16 656	32 022	25 924	29 042	7 624	12 793
2017	89 767	11 159	17 554	33 823	28 296	25 252	7 582	13 524
2018	91 034	11 205	17 755	34 119	28 078	20 545	7 692	13 330
CAGR 2010-2018	**-0,6%**	**4,3%**	**1,2%**	**3,0%**	**0,6%**	**3,6%**	**3,0%**	**-2,3%**

Source: Direction Générale des Douanes et Droits Indirects

Figure 22 – Evolution of exports of French NUTS2 of Atlantic Corridor (M€)



Source: Direction Générale des Douanes et Droits Indirects

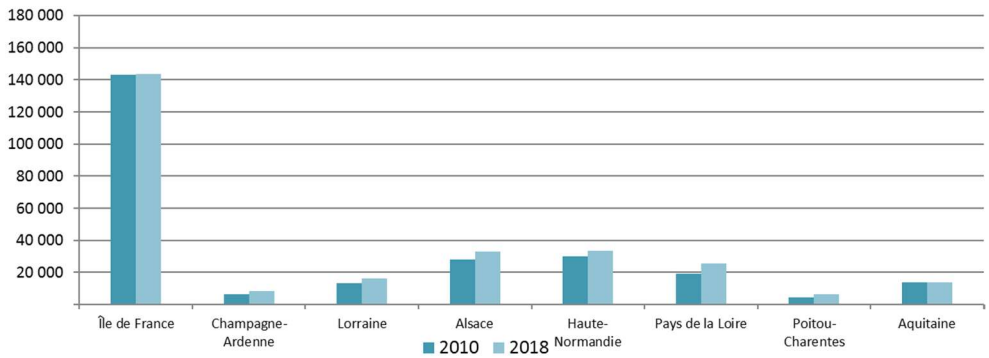
With respect to imports, for the year 2018 most regions have maintained their import levels. Same as for exports, Pays de la Loire is the exception with a relative growth of 35% instead.

Table 23 – Imports of French NUTS2 of Atlantic Corridor (M€)

	Île de France	Champagne-Ardenne	Lorraine	Alsace	Haute-Normandie	Pays de la Loire	Poitou-Charentes	Aquitaine
2010	143 142	6 454	13 473	28 202	30 253	19 240	4 656	13 938
2011	152 322	7 972	15 618	31 291	39 495	24 017	6 057	16 889
2012	150 333	8 365	14 583	31 235	39 205	24 841	6 321	15 358
2013	147 471	7 965	14 464	31 066	37 333	23 001	6 503	14 974
2014	146 854	8 137	14 688	32 106	34 495	22 857	6 205	14 793
2015	137 326	8 452	15 553	32 233	30 278	21 976	5 859	12 885
2016	138 462	8 861	15 343	31 113	28 196	22 290	5 627	13 164
2017	143 947	8 683	16 365	33 792	33 316	18 899	6 100	13 118
2018	143 674	8 637	16 350	33 178	33 414	25 475	6 240	13 739
CAGR 2010-2018	**0,0%**	**3,7%**	**2,4%**	**2,1%**	**1,3%**	**3,6%**	**3,7%**	**-0,2%**

Source: Direction Générale des Douanes et Droits Indirects

Figure 23 – Evolution of imports of French NUTS2 of Atlantic Corridor (M€)



Source: Direction Générale des Douanes et Droits Indirects

- Spain

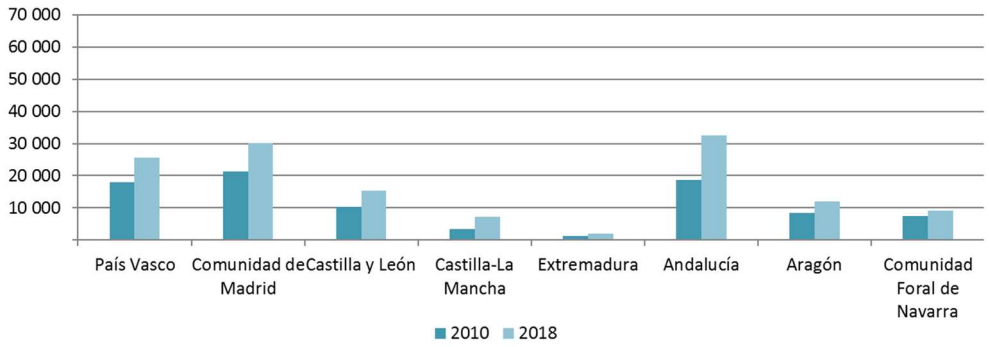
In 2018 most Spanish regions maintained their export levels from the previous year, with some increases in País Vasco, Andalucía and Comunidad Foral de Navarra.

Table 24 – Exports of Spanish NUTS2 of Atlantic Corridor (M€)

	País Vasco	Comunidad de Madrid	Castilla y León	Castilla-La Mancha	Extremadura	Andalucía	Aragón	Comunidad Foral de Navarra
2010	17 875	21 332	10 401	3 373	1 257	18 772	8 435	7 402
2011	20 487	26 722	12 018	3 990	1 464	22 961	9 209	8 302
2012	20 971	27 942	11 706	4 336	1 667	25 240	8 792	7 236
2013	20 631	30 771	12 271	4 866	1 668	26 125	8 867	7 447
2014	22 501	27 731	12 752	5 399	1 674	26 650	9 382	8 141
2015	21.866	27 776	14 881	6 013	1 720	24 930	10 571	8 540
2016	21 615	28 760	16 329	6 426	1 689	26 823	10 895	8 437
2017	24 109	30 001	15 512	7 073	1 942	30 507	11 801	8 106
2018	25 473	30 174	15 264	7 297	2 010	32 439	11 916	9 095
CAGR 2010-18	**5,4%**	**4,5%**	**4,4%**	**4,9%**	**10,1%**	**6,0%**	**7,1%**	**4,4%**

Source: Datacomex – Ministerio de Economía y Competitividad

Figure 24 – Evolution of exports of Spanish NUTS2 of Atlantic Corridor (M€)



Source: Datacomex – Ministerio de Economía y Competitividad

Regarding imports evolution, it continues with a growth tendency for all regions in 2018 reaching a 12% for Andalucía. Apart from these increases, Castilla y León is the exception for both exports and imports with a slight decrease of their volumes

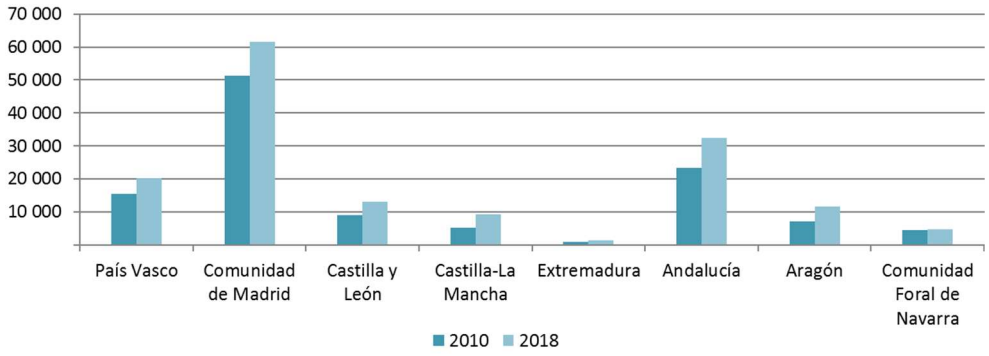
As for the homogeneity of regions levels, there is a wide variation between them, which is more accentuated in imports than exports.

Table 25 – Imports of Spanish NUTS2 of Atlantic Corridor (M€)

	País Vasco	Comunidad de Madrid	Castilla y León	Castilla-La Mancha	Extremadura	Andalucía	Aragón	Comunidad Foral de Navarra
2010	15 430	51 413	9 017	5 201	977	23 267	7 090	4 493
2011	17 309	53 390	10 353	5 125	1 016	29 376	7 988	5 360
2012	15 822	50 339	10 876	4 898	943	31 537	6 824	4 324
2013	15 952	47 579	10 770	5 717	1 123	30 626	6 966	3 917
2014	17 131	50 864	12 244	5 974	980	30 958	8 553	4 163
2015	16 819	57 720	12 478	6 634	1 056	26 534	10 271	4 578
2016	15 583	58 363	12 704	7 468	1 077	24 282	10 407	4 542
2017	18 695	60 862	13 446	8 502	1 203	29 060	10 910	4 469
2018	20 285	61 508	13 175	9 223	1 286	32 519	11 760	4 843
CAGR 2010-18	**3,5%**	**2,3%**	**4,9%**	**7,4%**	**3,5%**	**4,3%**	**6,5%**	**0,9%**

Source: Datacomex – Ministerio de Economía y Competitividad

Figure 25 – Evolution of imports of Spanish NUTS2 of Atlantic Corridor (M€)



Source: Datacomex – Ministerio de Economía y Competitividad

There are still big differences among Spanish regions in terms of trade with other countries. It seems that there is not a pattern of convergence over time.

- Portugal

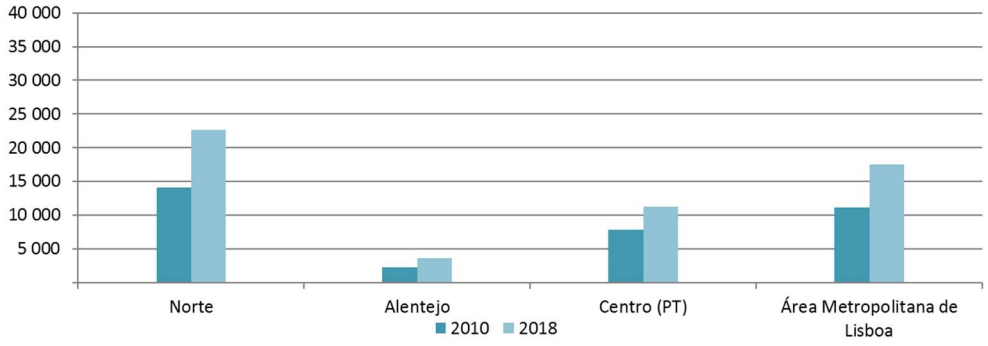
All Portuguese regions increased their exports in 2018 between a 3% and 10%, continuing the positive trend of previous year.

Table 26 – Exports of Portuguese NUTS2 of Atlantic Corridor (M€)

	Norte	Alentejo	Centro (PT)	Área Metropolitana de Lisboa
2010	14 047	2 266	7 833	11 153
2011	16 022	2 665	8 261	14 040
2012	16 792	2 736	8 628	15 144
2013	17 218	2 859	8 911	16 161
2014	18 225	2 877	9 252	15 364
2015	19 335	2 979	10 976	13 934
2016	20 503	2 915	11 091	12 941
2017	22 114	3 247	10 633	16 183
2018	22 685	3 579	11 291	17 458
CAGR 2010-18	**6,2%**	**5,9%**	**4,7%**	**5,8%**

Source: Estatísticas de Comércio Internacional de Bens - INE Portugal

Figure 26 – Evolution of exports of Spanish NUTS2 of Atlantic Corridor (M€)



Source: Estatísticas de Comércio Internacional de Bens - INE Portugal

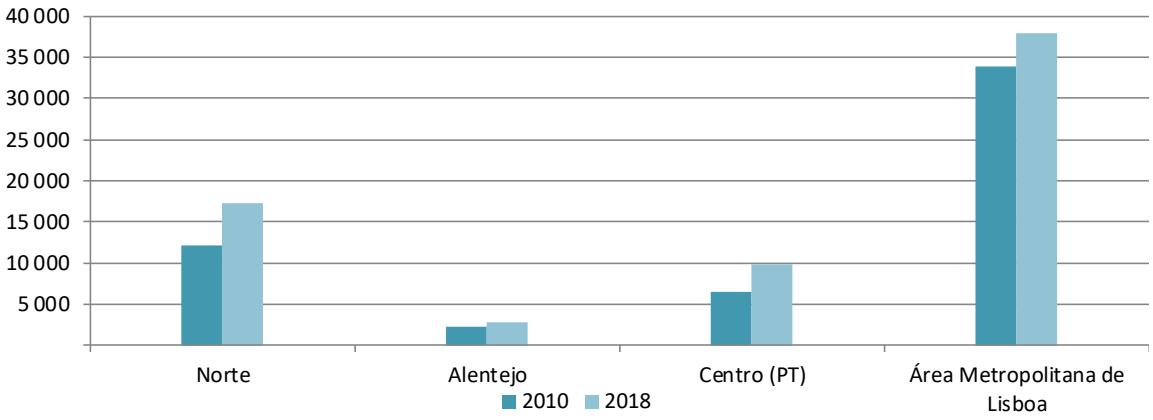
In the case of imports, the results for 2018 are similar as exports with a growth between 4% and 10% for all regions. Alentejo and Área Metropolitana de Lisboa experienced the highest increases. It is also important to highlight that 2010 values have been exceeded for both exports and imports in all regions of the country.

Table 27 – Imports of Portuguese NUTS2 of Atlantic Corridor (M€)

	Norte	Alentejo	Centro (PT)	Área Metropolitana de Lisboa
2010	12 117	2 229	6 496	33 884
2011	12 813	2 281	7 218	33 882
2012	11 793	1 961	6 808	32 413
2013	12 158	2 132	7 165	31 754
2014	12 895	2 219	7 391	31 910
2015	13 858	2 305	7 768	31 244
2016	14 824	2 149	8 171	30 570
2017	16 545	2 492	9 217	34 555
2018	17 272	2 697	9 912	37 970
CAGR 2010-18	**4,5%**	**2,4%**	**5,4%**	**1,4%**

Source: Estatísticas de Comércio Internacional de Bens - INE Portugal

Figure 27 – Evolution of imports of Portuguese NUTS2 of Atlantic Corridor (M€)



Source: Estatísticas de Comércio Internacional de Bens - INE Portugal

The following tables and graphs present the evolution of foreign trade among the Corridor countries and with the rest of EU countries (EU 28).

Please note that asymmetries between countries regarding imports and exports are explained by differences in data collection and other methodological procedures. For more information see the "User guide on European statistics on international trade in goods. 2016 - Epigraph 6.2.1 Why do asymmetries always exist?".

- Germany

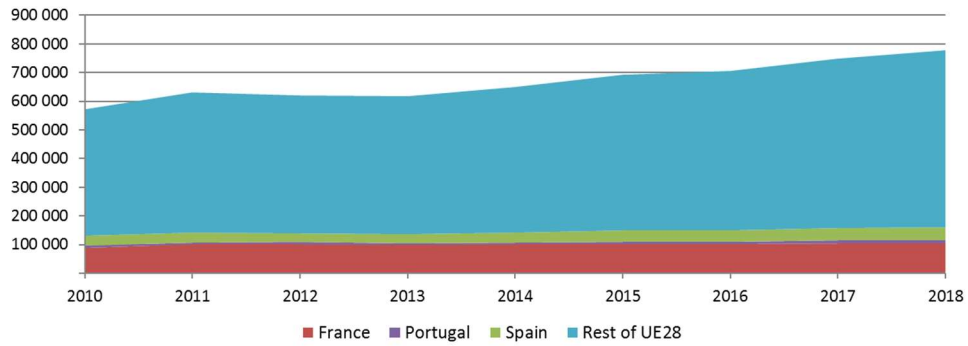
As with all previous sections, Germany stands out being the country with the highest level of exports and imports, at least in value. The exports to the rest of Atlantic Corridor countries implied around a 20% of the exchanges within the European Union in 2018, and whose approximately 65% belonged to trade with France.

Table 28 – Exports of Germany to countries in the Atlantic Corridor and rest of EU28 (M€)

	France	Spain		Rest of UE28
2010	89 582	34 222	7 769	441 377
2011	101 444	34 811	7 026	486 714
2012	102 439	31 047	6 154	479 937
2013	99 250	31 349	6 364	481 667
2014	100 580	34 820	7 094	506 100
2015	102 762	38 715	7 532	543 799
2016	101 106	40 497	7 951	555 995
2017	105 687	43 067	8 968	591 974
2018	105 282	44 231	10 044	619 088
CAGR 2010-18	**2.0%**	**3.3%**	**3.3%**	**4.3%**

Source: Eurostat

Figure 28 – Evolution of exports of Germany to countries in the Atlantic Corridor and rest of UE28 (M€)



Source: Eurostat

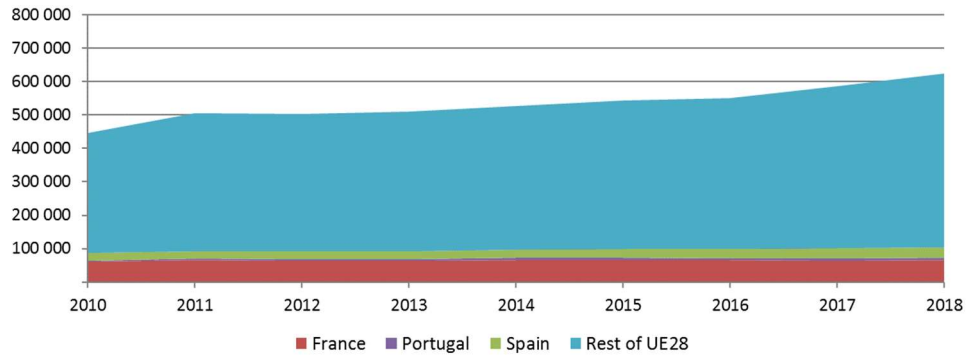
Trade with the rest of the Atlantic Corridor countries does not represent the main activity for Germany but it shows a constant growth.

Table 29 – Imports of Germany from countries in the Atlantic Corridor and rest of UE28 (M€)

	France	Spain	Portugal	Rest of UE28
2010	60 673	21 955	4 022	445 090
2011	65 948	22 491	4 707	506 211
2012	63 637	23 206	4 875	502 579
2013	63 489	23 639	5 107	509 738
2014	66 714	24 804	5 206	527 117
2015	66 819	26 442	5 525	543 334
2016	65 651	27 870	5 702	551 344
2017	64 329	31 396	6 242	484 104
2018	65 190	32 472	6 820	518 615
CAGR 2010-18	**0,9%**	**5,0%**	**6,8%**	**4,7%**

Source: Eurostat

Figure 29 – Evolution of imports of Germany from countries in the Atlantic Corridor and rest of UE28 (M€)



Source: Eurostat

- France

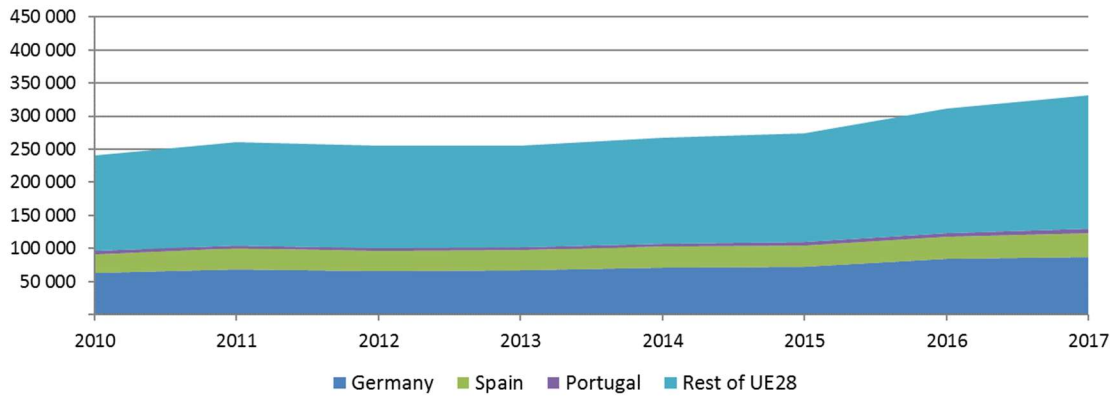
Again, no new data has been released regarding French foreign trade with other countries of the corridor. As for 2017, France had Germany as main trading partner, having around 26% of exchanges within the European Union with this country.

Table 30 – Exports of France to countries in the Atlantic Corridor and rest of UE28 (M€)

	Germany	Spain	Portugal	Rest of UE28
2010	62 629	28 903	4 227	144 583
2011	68 237	31 628	4 009	156 370
2012	66 237	29 895	3 712	156 141
2013	67 490	29 812	3 835	154 848
2014	71 426	31 900	4 181	160 029
2015	71 760	33 229	4 459	164 525
2016	84 248	33 465	5 269	188 469
2017	87 710	35 837	5 743	202 902
CAGR 2010-17	**4.9%**	**3.1%**	**4.5%**	**5.0%**

Source: Eurostat

Figure 30 – Evolution of exports of France to countries in the Atlantic Corridor and rest of UE28 (M€)



Source: Eurostat

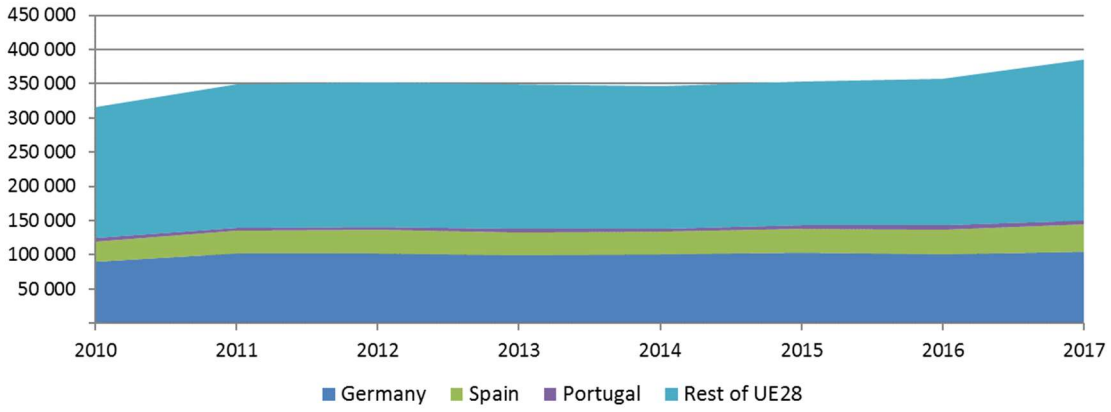
Imports in France kept growing in 2017 more than exports.

Table 31 – Imports of France from countries in the Atlantic Corridor and rest of UE28 (M€) - *(Value for Germany not published yet)*

	Germany	Spain	Portugal	Rest of UE28
2010	89 582	30 382	4 118	191 508
2011	101 444	33 339	4 857	208 930
2012	102 439	34 075	4 830	210 661
2013	99 247	34 003	5 140	210 123
2014	100 577	32 973	5 104	207 569
2015	102 755	34 933	5 341	210 776
2016	101 097	36 164	5 649	214 394
2017	105 228	39 194	6 044	235 132
CAGR 2010-18	**2.3%**	**3.7%**	**5.6%**	**3.0%**

Source: Eurostat

Figure 31 – Evolution of imports of France from countries in the Atlantic Corridor and rest of UE28 (M€)



Source: Eurostat

- Spain

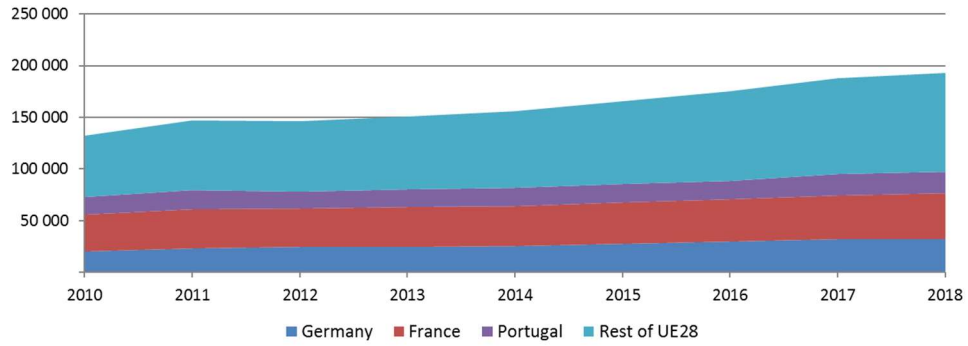
Trade with the other Atlantic Corridor countries present a high weight in Spain, where it implied a 50% of the exports and imports within the European Union in 2018, and where a relatively steady distribution "15-25-10" is maintained over last years for Germany, France and Portugal respectively.

Table 32 – Exports of Spain to countries in the Atlantic Corridor and rest of UE28 (M€)

	Germany	France	Portugal	Rest of UE28
2010	20 464	35 470	17 189	58 873
2011	22 864	38 364	18 124	67 577
2012	24 431	37 437	16 194	68 263
2013	24 388	38 689	17 295	70 145
2014	25 439	38 640	17 825	73 890
2015	27 782	39 580	17 989	80 293
2016	30 100	40 158	18 170	86 616
2017	31 691	42 866	20 219	92 806
2018	31 767	44 545	21 238	95 737
CAGR 2010-18	**5,7%**	**2,9%**	**2,7%**	**6,3%**

Source: Eurostat

Figure 32 – Evolution of exports of Spain to countries in the Atlantic Corridor and rest of UE28 (M€)



Source: Eurostat

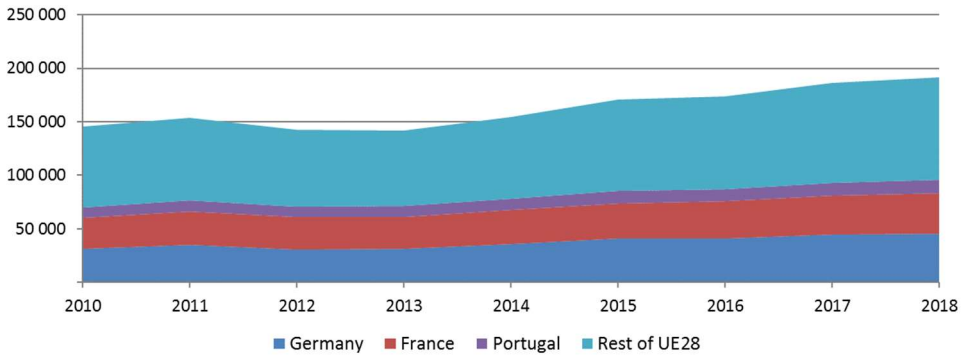
Both imports and exports registered an increment around the 4% for all relationships, verifying the positive tendency of the national economy.

Table 33 – Imports of Spain from countries in the Atlantic Corridor and rest of UE28 (M€)

	Germany	France	Portugal	Rest of UE28
2010	31 421	28 903	9 448	75 850
2011	34 611	31 628	9 979	77 803
2012	30 841	29 895	9 532	72 108
2013	31 196	29 812	10 254	70 434
2014	35 775	31 900	10 459	76 703
2015	40 598	33 229	11 248	85 763
2016	41 244	34 320	11 300	87 015
2017	44 243	37 071	11 616	93 110
2018	45 360	38 120	12 036	96 461
CAGR 2010-18	**4,7%**	**3,5%**	**3,1%**	**3,1%**

Source: Eurostat

Figure 33 – Evolution of imports of Spain from countries in the Atlantic Corridor and rest of UE28 (M€)



Source: Eurostat

- Portugal

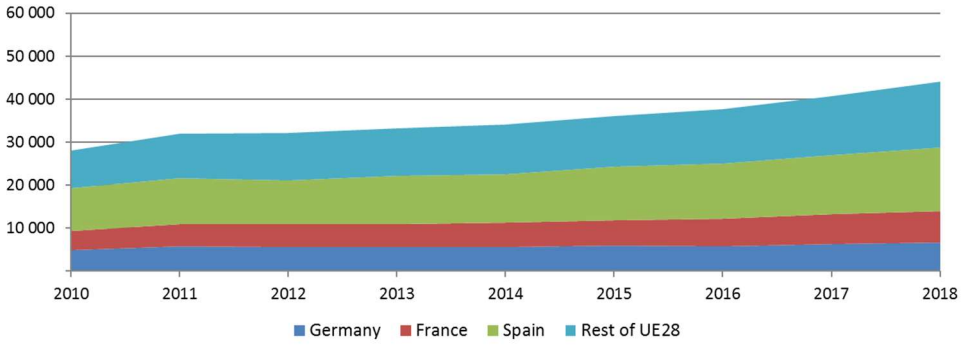
In the case of Portugal, the others Atlantic Corridor countries accounts for two thirds of its trade within the European Union. Spain is its main trading partner and implies a third of Portugal's European imports and exports, so Portugal has the strongest dependence on the corridor.

Table 34 – Exports of Portugal to countries in the Atlantic Corridor and rest of UE28 (M€)

	Germany	France	Spain	Rest of UE28
2010	4 852	4 474	10 065	8 726
2011	5 801	5 207	10 667	10 213
2012	5 596	5 351	10 151	11 027
2013	5 509	5 497	11 177	11 093
2014	5 618	5 659	11 284	11 484
2015	5 883	6 031	12 310	11 847
2016	5 838	6 323	12 930	12 499
2017	6 259	6 912	13 854	13 732
2018	6 648	7 344	14 685	15 422
CAGR 2010-18	**4,0%**	**6,4%**	**4,8%**	**7,4%**

Source: Eurostat

Figure 34 – Evolution of exports of Portugal to countries in the Atlantic Corridor and rest of UE28 (M€)



Source: Eurostat

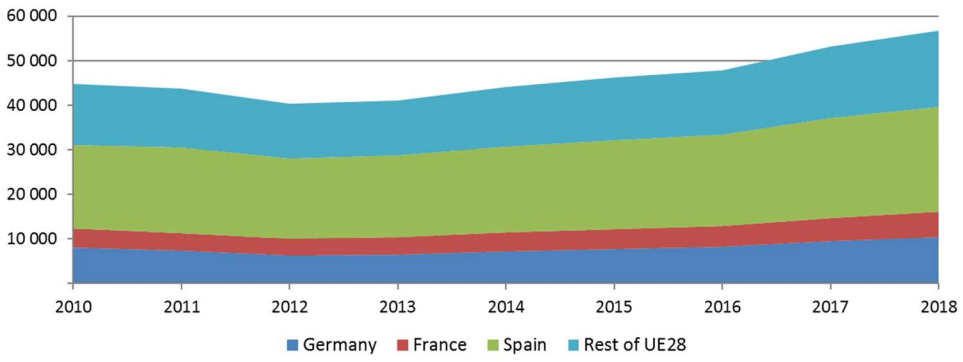
In the same way as Spain, Portuguese imports and exports are increasing progressively during last years and for 2018 this growth was higher for Portugal. Both countries are improving their gap between exports and imports, and the economic characterization allows them to compensate deficit with services, specially tourism.

Table 35 – Imports of Portugal from countries in the Atlantic Corridor and rest of UE28 (M€)

	Germany	France	Spain	Rest of UE28
2010	8 129	4 227	18 795	13 653
2011	7 307	4 009	19 156	13 207
2012	6 391	3 712	17 949	12 242
2013	6 488	3 835	18 394	12 349
2014	7 270	4 181	19 214	13 477
2015	7 704	4 469	19 932	14 081
2016	8 254	4 732	20 345	14 485
2017	9 504	5 105	22 453	16 048
2018	10 387	5 740	23 563	17 127
CAGR 2010-18	**3,1%**	**3,9%**	**2,9%**	**2,9%**

Source: Eurostat

Figure 35 – Evolution of imports of Portugal from countries in the Atlantic Corridor and rest of UE28 (M€)



Source: Eurostat

1.3.2 Forecast and comparison with TMS

The table below displays the projections for exports and imports at national level contained in the TMS of December 2014.

Table 36 – Accumulated imports/exports growth rate forecasted in TMS

	Germany		France		Spain		Portugal	
	Imports	**Exports**	**Imports**	**Exports**	**Imports**	**Exports**	**Imports**	**Exports**
2020	23,0%	29,3%	16,8%	20,2%	22,9%	25,5%	2,0%	21,7%
2030	81,3%	54,9%	62,0%	66,1%	83,2%	61,2%	42,1%	60,2%
2050	166,1%	93,8%	126,8%	168,2%	167,6%	136,1%	116,2%	137,7%
CAGR 2014-2020	**3,5%**	**4,4%**	**2,6%**	**3,1%**	**3,5%**	**3,9%**	**0,3%**	**3,3%**
CAGR 2020-2030	**4,0%**	**1,8%**	**3,3%**	**3,3%**	**4,1%**	**2,5%**	**3,4%**	**2,8%**
CAGR 2030-2050	**1,9%**	**1,1%**	**1,7%**	**2,4%**	**1,9%**	**1,9%**	**2,1%**	**2,0%**
CAGR 2020-2050	**2,6%**	**1,4%**	**2,2%**	**2,7%**	**2,6%**	**2,1%**	**2,5%**	**2,3%**

Source: Traffic and Market Research Update for the Atlantic Corridor - Phase 3. December 2014

Next table presents the updated predictions of AMECO (European Commission) with regard to the evolution of foreign trade among the countries of the Atlantic Corridor. The projections have lowered notably with respect to previous year, specially for Germany in 2019. Figures for 2020 are slightly more optimistic in general, but a tendency to slowdown can be apreciated in the projections.

Table 37 – Imports/exports growth rate forecasted by AMECO

	Germany		France		Spain		Portugal	
	Imports	**Exports**	**Imports**	**Exports**	**Imports**	**Exports**	**Imports**	**Exports**
2018	5,2%	3,1%	6,6%	4,3%	3,5%	3,5%	7,4%	5,7%
2019	3,3%	1,8%	3,8%	4,1%	3,9%	3,7%	6,3%	4,8%
2020	3,5%	3,1%	4,4%	4,3%	4,4%	4,3%	5,6%	4,8%

Source: AMECO

Next table presents the predictions of OECD's Economic Outlook. Figures differ from previous table, but the conclusions are similar: foreign trade has slowed down its growth in 2019, what has caused expectations to be adjusted downwards.

Table 38 – Imports/exports growth rate forecasted by Economic Outlook OECD

	Germany		France		Spain		Portugal	
	Imports	**Exports**	**Imports**	**Exports**	**Imports**	**Exports**	**Imports**	**Exports**
2018	3,4%	2,2%	1,2%	3,3%	3,5%	2,3%	4,9%	3,6%
2019	3,0%	0,9%	2,7%	2,7%	0,6%	0,8%	4,1%	2,4%
2020	3,3%	2,4%	2,7%	2,7%	4,3%	3,7%	4,4%	4,0%

Source: OECD

As for 2018, trade remained relatively in good health. Spain and Portugal performed over the predicted growth, while Germany had a lower but still positive increase as expected. The only deviation downwards was France, what might be caused by the "yellow vest" protests started at the end of the year. This protests had a notable impact on traffic and tourism, and probably affected negatively French foreign trade.

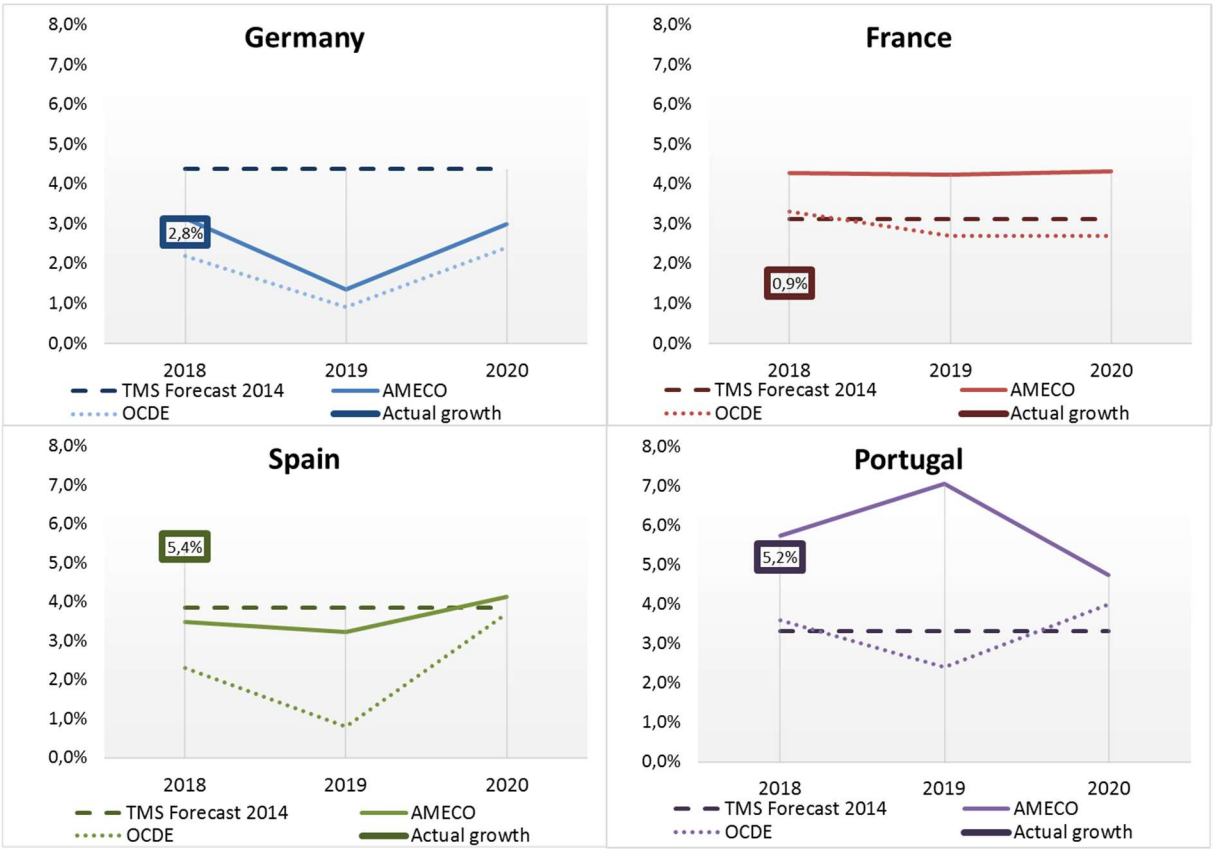
Table 39 – Comparison of imports/exports growth rate forecasted with the real evolution in 2018

	Germany		France		Spain		Portugal	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
Registered	5,5%	2,8%	0,1%	0,9%	5,6%	2,9%	8,8%	5,2%
AMECO	5,2%	3,1%	6,6%	4,3%	3,5%	3,5%	7,4%	5,7%
OECD	3,4%	2,2%	1,2%	3,3%	3,5%	2,3%	4,9%	3,6%

Source: AMECO, OECD

The following graphs show a comparison among the different forecasts mentioned above: TMS, AMECO, OECD and registered growth in 2017.

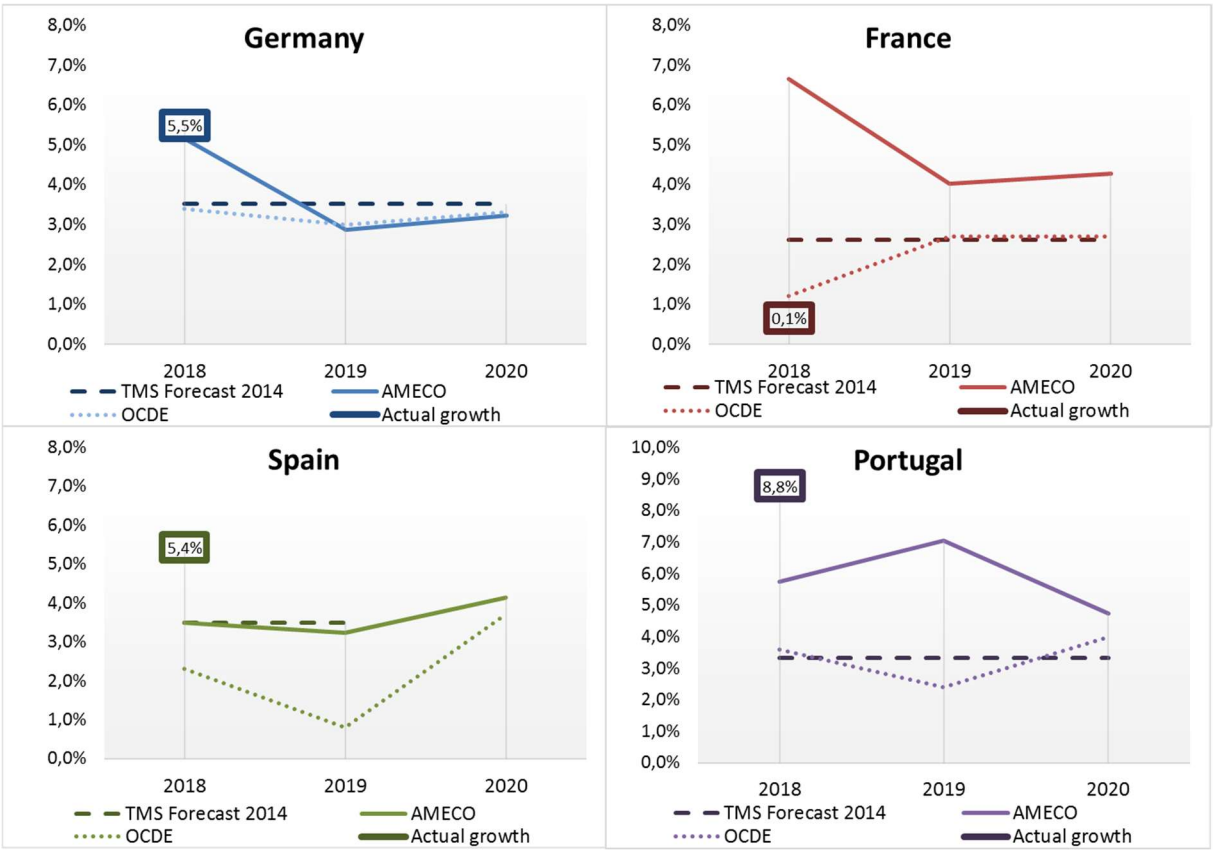
Figure 36 – Comparison of imports growth forecasted by TMS, AMECO and OECD, for the period 2018-2020



Source: Traffic and Market Research for the Atlantic Corridor, AMECO, OECD, Eurostat.

In the case of imports, the forecasts above share good perspectives for all the countries. The real data of growth for the year 2017 has been significantly over the projection, so it can be expected an upwards correction of projections in the short term.

Figure 37 – Comparison of exports growth forecasted by TMS, AMECO and OECD, for the period 2018-2020



Source: Traffic and Market Research for the Atlantic Corridor, AMECO, OECD, Eurostat.

The cause of this unexpected slowdown in trade in the countries of the Atlantic Corridor is unclear. According to last official reports, in 2019 the European economies are showing signs of fatigue, especially Germany, the largest economy in Europe.

To some extent, this slowdown is related to the trade war started by the USA, that has affected Europe directly (with the imposition of tariffs on certain European products) and indirectly (as a side effect in the conflict with China and other countries). Uncertainty around Brexit and other issues also had a negative effect in trade with all probability.

The fear among experts is that this deceleration in trade will be followed by contractions in GDP. Some authorities have already adjusted their plans to a worsen economic outlook, such as the European Central Bank postponing the rise of interest rates planned for the fall of the year. However, no national government has announced economic stimulus for the moment.

Foreign trade started to slow its growth in 2018, which seems to be going further in 2019. This slowdown is affecting Germany and France for the moment, while Spain and Portugal still enjoy a high growth rates.

The latest figures reported point out that uncertainties such as the Brexit and the trade wars originated by Trump administration are eventually having an impact on real economy, being the foreign trade the first component to be affected.

1.4 Price index evolution

1.4.1 Main price indices

1.4.1.1 Fuel price

The fuel price index corresponds to insurance and freight cost related to crude oil import. Taxes, refinement and other related cost impact on consumer price paid by the transport operators. The increase in fuel and energy prices are supposed to be at least partly recovered through an increase in transport prices with some inertia. However, the short term sensitivity to a fuel and energy prices decrease is much more debatable and depends on the transport contracts. Fuel price evolutions are expected to have quite a direct influence on road transportation costs and therefore on modal competition.

This subsection presents the crude oil variation analysis between 2010 and 2018 (until 2016 for Portugal). The base index year to which the prices are compared to is 2010.

When analysing the results, it can be observed that the crude oil prices in 2016 is not far out from the base year price level. Nevertheless, over the study period the crude oil prices have varied rather significantly.

Between 2010 and 2012, we can see from the following table that crude oil import prices have increased fairly significantly, especially in Spain. Since 2012, the prices have started to decline quite evenly in each of the four countries up to year 2016 when they even decreased under the 2010 price level in all countries (except in Portugal), and we are now observing a new raise since 2016.

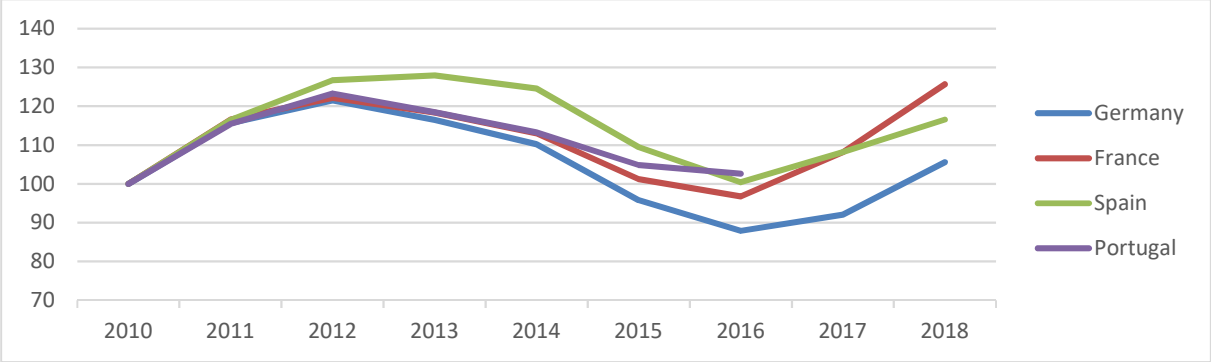
Table 40 – Fuel price (2010: base 100)

	Germany	France	Spain	Portugal
2010	100.0	100.0	100.0	100.0
2011	109.7	116.5	115.6	115.4
2012	116.1	122.2	125.0	123.3
2013	112.4	118.4	125.3	118.5
2014	107.9	113.0	121.4	113.2
2015	95,8	101,2	109,5	104,8
2016	87,9	96,8	100,4	102,6
2017	92,1	108,1	108,2	-
2018	105,6	125,7	116,6	-

Source: Crude oil import price, Cost, insurance and freight (CIF) per barrel, OECD; Eurostat

The fuel price level over the years 2012-2013 set an opportunity to rail sector development as the fuel price increases the road prices. The fall of fuel prices between 2013 and 2016 then altered this trend and led the fuel prices in 2016 to a level comparable as in 2010. This fall was mainly due to geopolitical reasons through concerning members of OPEC (Organization of Petroleum Exporting Countries). Saudi Arabia, which has the lowest producer cost of crude oil, tended to maintain a high level of production and ensure lower prices to witch its competitors are unable to respond to (e.g. oil shale reservoirs from Canada or United-States). The lifting of sanctions against Iran in the beginning of 2016 also contributed to an significant increase of fuel volumes on the markets which maintained prices low. At the beginning of 2017 fuel prices started to increase, which was also encouraged by the agreement of OPEC limiting the production with the aim to obtain a slight increase of prices. In the long run this trend should be favourable to the railway sector, without being a strong criteria per se at this stage.

Figure 38 – Evolution of fuel price (2010: base 100)



Source: Crude oil import price, Cost, insurance and freight (CIF) per barrel, OECD

1.4.1.2 Energy price

Transport modes that are less dependent from the crude oil price, the average energy price reflects better the impact on traction costs impact partly thermic and electric. Energy price development may have an impact on traction prices but also on track access charges where specific energy fees are charged.

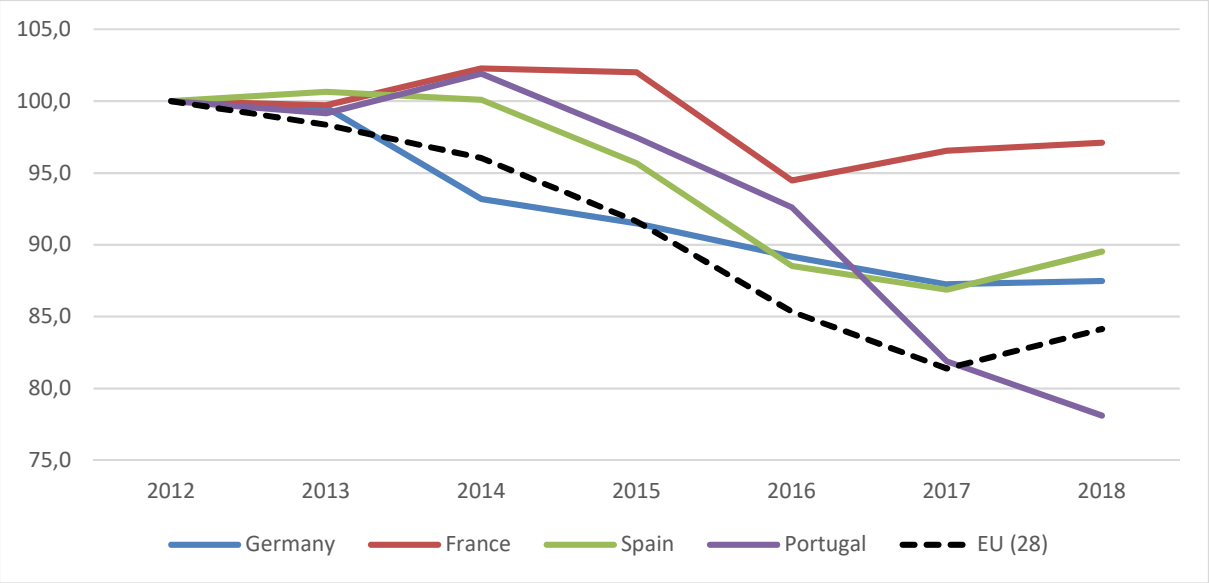
Electricity prices impact directly on the traction costs of the railway sector. In real tendencies, the traction costs have in average decreased at all the countries of the Atlantic Corridor, in particular for Germany due to the country's transition to renewable energies. Portugal and Spain had a significant decrease but with the highest base price in Europe due to the debt reimbursement related to energy production. In France, few changes have impacted on the electricity prices where a large part of it is produced by nuclear power plants with - low dependency to oil and gas prices. The electricity prices now seem to have stopped decreasing in 3 of the Corridor's countries (Portugal remains an exception in 2018) while the average price in the EU has increased last year.

Table 41 – Electricity price (2010: base 100)

	Germany	France	Spain	Portugal	EU (28)
2012	100,0	100,0	100,0	100,0	100,0
2013	99,5	99,7	100,7	99,2	98,4
2014	93,2	102,3	100,1	101,9	96,0
2015	91,5	102,0	95,7	97,5	91,6
2016	89,2	94,5	88,5	92,6	85,3
2017	87,3	96,5	86,9	81,9	81,4
2018	87,5	97,1	89,5	78,1	84,1

Source: "Energy statistics - natural gas and electricity prices (from 2007 onwards) (nrg_pc_205)", Eurostat

Figure 39 – Evolution of electricity price (2010: base 100)



Source: "Energy statistics - natural gas and electricity prices (from 2007 onwards) (nrg_pc_205)", Eurostat

Energy prices have decreased since 2012 (both fuel and electricity) until it started to rise again in 2017. That is true for fuel prices in the 4 countries of the Atlantic Corridor, for which the evolution remains very similar over the years. Concerning electricity prices, trends were quite similar in all countries but we observe a raise of the French prices in 2017 while they keep decreasing in Spain, Portugal and Germany (Will that French raise remain an isolated case or does it announce changes for the three other countries?)

These evolutions – and especially fuel price variations – have direct consequences on producer prices (see below) and on transportation costs (road transport costs being tightly related to fuel prices), and are therefore likely to condition for the industries both their production and transportation costs.

1.4.1.3 Purchasing power parity

As defined by the OECD, the purchasing power parity index is the currency conversion rate that equalizes the purchasing power of different currencies by eliminating the differences in price levels between countries. Concretely, it allows to compare transport price levels of the Atlantic Corridor countries taking into account the consumption context of each of them. To a larger extent, it indicates the benefit of a firm to buy equivalent services or goods in other countries in comparison with the local price level. It is thus partly linked with the foreign trade balance and inversely to the capacity of firms to propose affordable services or goods to their neighbouring countries.

This subsection presents the purchase power parity (PPP) variation between 2010 and 2018.

The PPP values are compared to the average of the EU's 28 countries. The compound annual growth rate (2010-2018) shown in the table below shows that the PPP fluctuation in the four Atlantic Corridor countries is rather minor.

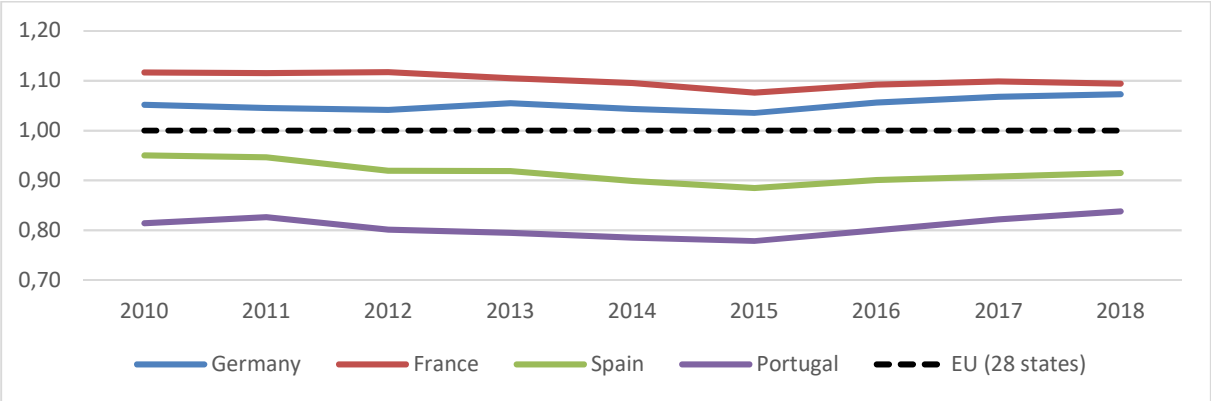
The PPP in France and Germany is superior to the EU average, whereas in Spain and Portugal it is under the EU28 average. This state remains quite steady, whereas Portugal is reducing the gap with the EU average over the last few years.

Table 42 – Purchase power parity (EU28 2010 = 1.00)

	Germany	France	Spain	Portugal
2010	1.05	1.12	0.95	0.81
2011	1.05	1.12	0.95	0.83
2012	1.04	1.12	0.92	0.80
2013	1.05	1.11	0.92	0.79
2014	1.04	1.10	0.90	0.79
2015	1.03	1.08	0.88	0.78
2016	1.06	1.10	0.90	0.80
2017	1.07	1.10	0.90	0.81
2018	1,07	1,09	0,91	0,84
CAGR 2010-18	**0,2%**	**-0,3%**	**-0,5%**	**0,4%**

Source: Purchasing power parities (PPPs), price level indices and real expenditures for ESA 2010 aggregates (prc_ppp_ind), Eurostat

Figure 40 – Evolution of purchase power parity (base EU28)



Source: Purchasing power parities (PPPs), price level indices and real expenditures for ESA 2010 aggregates (prc_ppp_ind), Eurostat

As admitted by the mainstream economic theory, the purchasing power parity explains partly the foreign trade balance between the two countries. An increase of the PPP of a country compared to its commercial partner implies higher prices for goods and more difficulties to export. On the contrary, a decrease of PPP leads to cheaper prices of goods and much attractive inner market. In our case, the PPP of the Atlantic Corridor countries does not experience strong development in the period 2010-2018 whereas the goods prices in France and Germany tends to decrease less quickly than in Spain and in Portugal. This should lead to the strengthening of the flows from south to north. Simultaneously, it should be noted that during the same period the German prices decrease less than in France, which should lead to a slight readjustment in favour of French exports to Germany.

The analysis of the purchasing power parity of the 4 countries of the Corridor would suggest that goods transportation shall be expected to go mostly from South of the Pyrenees to north of them. However, the reality of freight flows is not only based on this indicator and does not necessarily reflects the relative values of the PPP of neighbouring countries.

1.4.1.4 Producer price

The producer price index measures the average change in selling prices received by domestic producers of goods and services over time. It covers a sector or a group of sectors and provides information about the potential turnover development of a sector and the related flexibility in terms of operating margin and logistic purchases. PPI is often used as contract price adjustments base (escalation): in that respect, they allow to deflate revenue streams in order to measure real output growth.

NB : No available data for year 2018.

This subsection presents the variation of the trading prices in industrial products between 2010 and 2017. The base index year to which the prices are compared to is 2010.

In general terms, the producer prices in the industry have partly followed the development of the crude oil prices. The producer prices have increased since 2010 and attained a peak level in 2012 from which the prices started moderately to decrease..

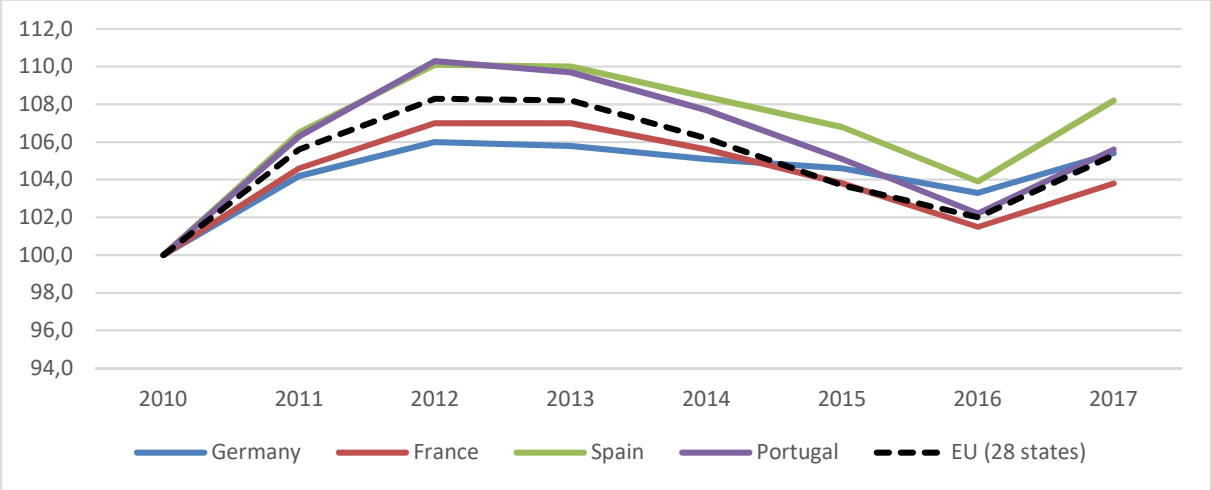
The producer prices in France were below the EU28 price average since 2010 and in Germany between 2010 and 2014 as well as in 2016.On the contrary in Spain and in Portugal they have been above the EU 28 average since 2010..

Table 43 – Producer prices in industry (2010: base 100)

	Germany	France	Spain	Portugal	EU (28 states)
2010	100.0	100.0	100.0	100.0	100.0
2011	104.2	104.6	106.5	106.3	105.6
2012	106.0	107.0	110.1	110.3	108.3
2013	105.8	107.0	110.0	109.7	108.2
2014	105.1	105.6	108.4	107.7	106.2
2015	104.6	103.8	106.8	105.1	103.7
2016	103.3	101.5	103.9	102.2	102.0
2017	105.4	103.8	108.2	.105.6	105.3

Source: Producer prices in industry, total - annual data (sts_inpp_a), Eurostat

Figure 41 – Evolution of production price (2010: base 100)



Source: Producer prices in industry, total - annual data (sts_inpp_a), Eurostat

Producer price development since 2010 shows a quite steady situation in Atlantic Corridor countries which leads to conclude that unit revenue basis in the industrial sector has not changed favourably in this period as consumer prices detailed hereafter have also kept the same level since 2013. It could be understood as the difficulty of industrial firms to maintain comfortable margins after the recovery of the financial crisis and the peak in fuel prices. The expected impact could result in some stresses on logistic purchasing to ensure steady operating margins in the short run.

1.4.1.5 Consumer price

The consumer price index (CPI) is a weighted measure of price for a set of goods and services. In particular, it allows to highlight the impact of the monetary inflation and the trend-based evolution of intermediate consumptions and supply chain costs. The CPI is used for a wide variety of purposes such as a guide for monetary policy, for the indexation of commercial contracts, wages, social protection benefits or financial instruments and as a tool for deflating the national accounts or calculating changes in national consumption or in living standards. In that respect, it allows to adjust income and expenditure streams regarding the changes in the cost of living.

This subsection presents the consumer price evolution between 2010 and 2018. The base index year to which the prices are compared to is 2010.

The consumer price have risen fairly steadily in the Atlantic corridor countries between 2010 and 2012 after which the growth have slowed down up to 2016 from which they have increased significantly in Germany, France and Spain.

Since 2011 the consumer prices in Germany, Spain, Portugal and France have been below the EU28 average, with just an exception in Portugal in 2012.

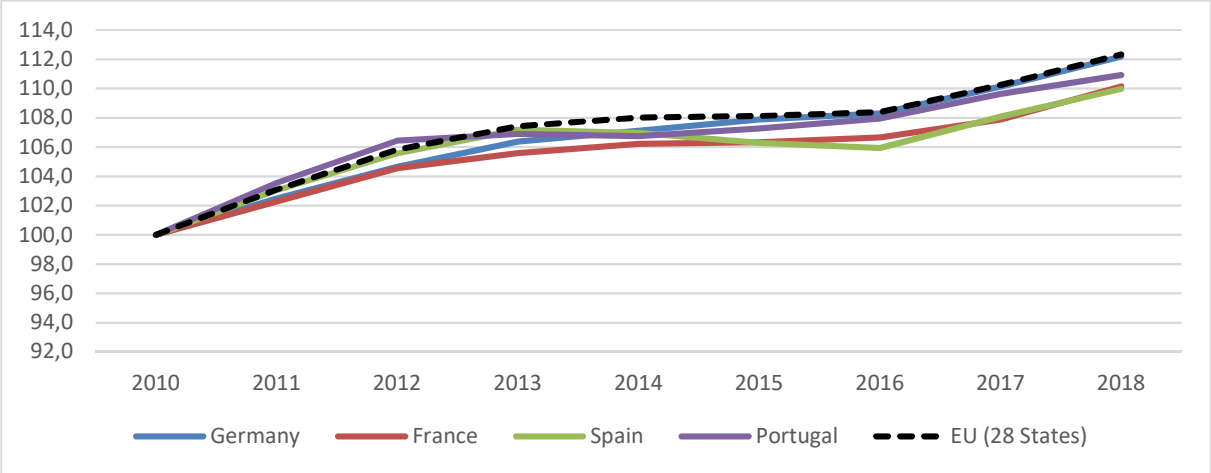
Table 44 – Consumer price index (2010: base 100)

	Germany	France	Spain	Portugal	EU (28 States)
2010	100,0	100,0	100,0	100,0	100,0
2011	102,5	102,3	103,0	103,6	103,1
2012	104,6	104,6	105,6	106,4	105,8
2013	106,4	105,6	107,2	106,9	107,4
2014	107,1	106,2	107,0	106,7	108,0
2015	107,9	106,3	106,3	107,3	108,1
2016	108,3	106,7	105,9	108,0	108,4
2017	110,1	107,9	108,1	109,6	110,2
2018	112,2	110,2	110,0	110,9	112,3

Source: HICP - annual data (average index and rate of change) (prc_hicp_aind), Eurostat

As detailed above, the steadiness of consumer price index after 2013 shows the stress on the industrial sector to minimize the purchasing costs, and in particular logistic services.

Figure 42 – Evolution of consumer price (2010: base 100)



Source: HICP (2015 = 100) - annual data (average index and rate of change) (prc_hicp_aind), Eurostat

With the decrease of fuel prices between 2012 and 2016, producers have faced at the same time a decrease of their producer prices and a slight rise of their consumer prices, which resulted on a reduction of their expectable margins.

The reduction of these operating margins enhances the weight of the transportation costs in the cost breakdown structure of the producer, emphasizing the importance of the price when choosing a modal solution for transporting their goods.

These last years however, both consumer and producer prices have notably increased in the four countries of the Atlantic Corridor (margins remaining therefore expectedly steady regarding these two indicators).

1.4.1.6 Labour and capital cost

The labour cost is one of the components that have the most impact on the operating costs of each transport mode. It is mostly converted into hourly ratio in transport cost models and added to daily costs incurred by equipment amortization. The labour cost index also entails the development of labour regulation of each country, implying for instance compulsory rest period for truck drivers and maximum weekly working time which may differ from one country to another.

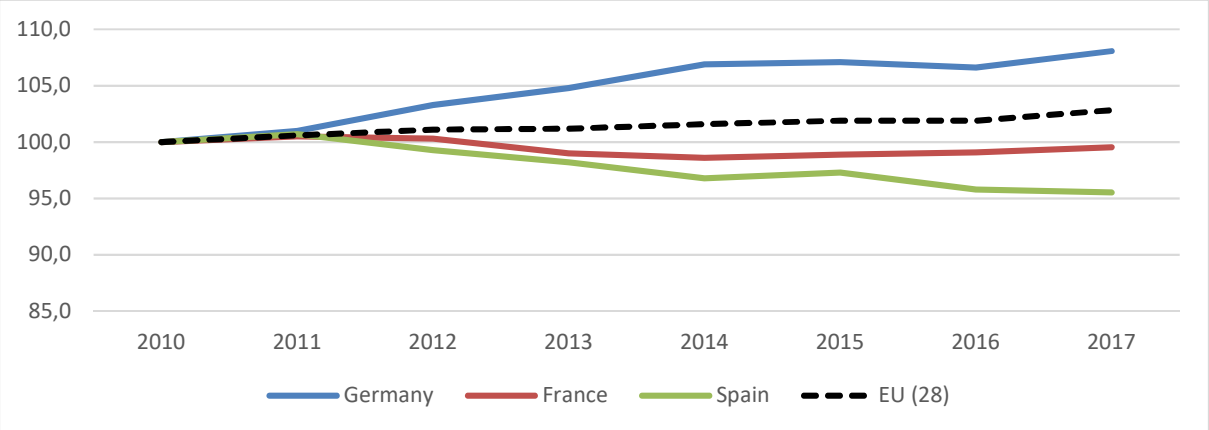
NB : no more recent data available (some 2017 figures have even been removed from Eurostat)

Table 45 – Service producer price index (2010: base 100)

	Germany	France	Spain	Portugal	EU (28 States)
2010	100.0	100.0	100.0	:	100.0
2011	101.0	100.5	100.7	:	100.6
2012	103.3	100.3	99.3	:	101.1
2013	104.8	99.0	98.2	:	101.2
2014	106.9	98.6	96.8	:	101.6
2015	107.1	98.9	97.3	:	101.9
2016	106.6	99.1	95.8	:	101.9
2017	108.1	99.6	95.5	:	102.8

Source : "Service producer prices - annual data (sts_sepp_a)" Eurostat

Figure 43 – Evolution of service producer price (2010: base 100)



Source : "Service producer prices - annual data (sts_sepp_a)" Eurostat

1.4.1.7 Road toll cost

Additionally to fuel and maintenance costs, the road toll costs often vary with the distance, even as km rates vary in different networks. The road toll costs affect directly the competitiveness of the road mode and may provoke some routing diversion. It equally includes the existing Eurovignette mark-ups such as MAUT in Germany, which also apply on secondary roads. The average level is based on assumptions concerning the current heavy goods vehicle profiles using each country's network (in particular average load and Euro class).

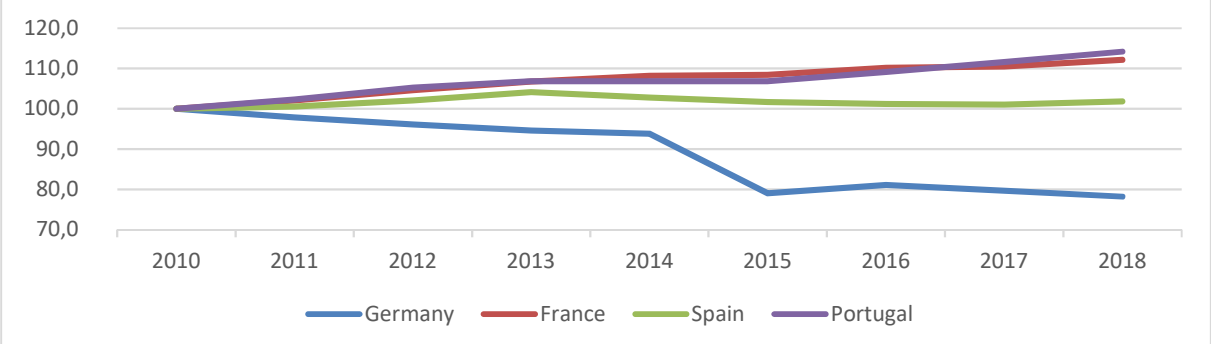
This subsection presents the road toll costs in the four Atlantic Corridor countries between 2010 and 2018. The base index year to which the road toll prices are compared to is 2010.

In France, the road toll prices have risen fairly steadily. The annual growth between 2010 and 2018 has been around 1.5%. In Portugal, the road toll prices have increased similarly as in France (annual growth around 1.7%). However, it is worth nothing that the toll prices have remained steady between 2013 and 2015, after which they have increased rather significantly. In Spain, the road tolls have increased similarly as in France and in Portugal between 2011 and 2013 from which they have decreased annually by 0.8% (2013-2016). In Germany the tendency has been completely opposite. The toll prices have decreased in total 21 % between 2010 and 2018 and on average 3% per year, with the most significant fall in road toll costs between 2014 and 2015 (-9%).

Table 46 – Road toll cost (2010: base 100)

	Germany[2]	France	Spain	Portugal
2010	100.0	100.0	100.0	100.0
2011	96.8	102.1	100.5	102.3
2012	95.1	104.6	102.1	105.3
2013	93.6	106.8	104.2	106.8
2014	92.8	108.2	102.8	106.8
2015	84.3	108.5	101.7	106.8
2016	80.0	110.2	101.7	109.2
2017	78.6	110.5	101.1	111.6
2018	78.2	112.2	101.9	114.2

Figure 44 – Evolution of road toll cost (2010: base 100)



[2] The road toll data refers to average tolls across the whole truck fleet with gross vehicle weight over 12 tons. Toll rates are lower for best-in-class trucks in terms of cleaning of emissions. In the past years the coverage of toll payments has been continuously extended from motorways to other main roads. Own calculations based on the nominal rates and aggregate vehicle fleet data.

1.4.2 Transport price evolution

The transport price index evolution reflects the average variation of logistic purchasing: the transport market study's stated preference survey pointed out the price as the major decision criteria in the mode choice for shippers and forwarders. Each mode's price index is based on a representative selection of origin-destinations to permit comparison for each year registered. Various phenomena may imply transport price evolution, such as the balance of incumbent and new entrants in the railway sector, the share of eastern low-cost road transport companies or the fuel or toll prices as described before.

1.4.2.1 Road

This subsection presents the road transport price evolution between 2010 and 2018 (only 2016 for Germany and France). The base index year to which the prices are compared to is 2010.

In general terms, the road transport prices vary in accordance with the crude oil prices. Between 2010 and 2013 road transport prices increased steadily in France and in Germany up to 2015. Between 2015 and 2016 the prices in the both countries slightly decreased and on contrary increased between 2016 and 2018.

The road transport prices in Spain have not followed the same trends between 2010 and 2016, but are now following the Portuguese prices, as they are now both increasing since 2016.

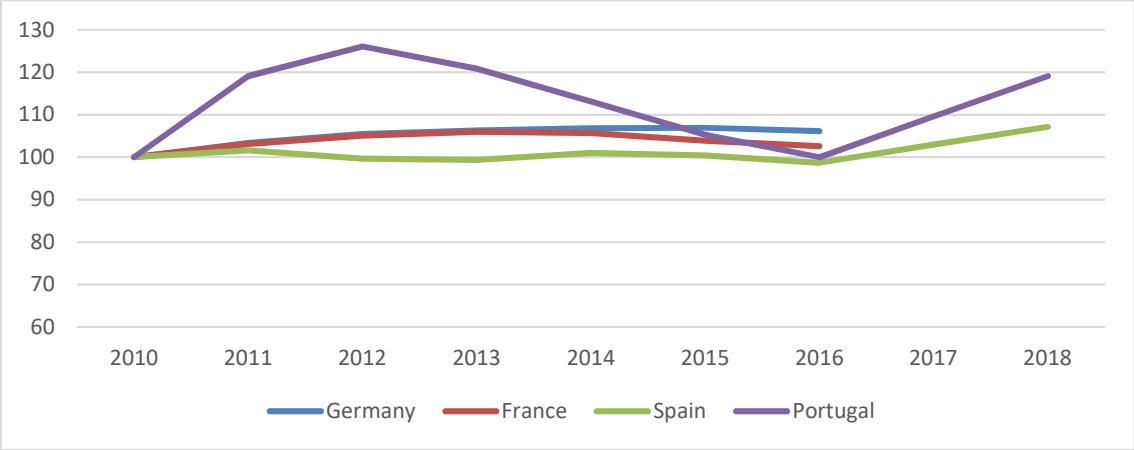
Portugal instead have known significant variations between 2010 and 2018 in road prices. The prices increased significantly between 2010 and 2012 after which there has been a great decrease of the road prices. In 2016 the prices attainted 2010 price level and then started again to rise, accordingly to the evolution of fuel prices.

Table 47 – Transport Price : Road (2010: base 100)

	Germany	France	Spain	Portugal
2010	100,0	100,0	100,0	100,0
2011	103,4	103,1	101,6	119,1
2012	105,4	105,1	99,6	126,1
2013	106,3	106,0	99,3	120,9
2014	106,9	105,7	101,0	113,0
2015	106,9	103,9	100,4	105,2
2016	106,2	102,6	98,7	100,0
2017			103,0	109,6
2018			107,1	119,1

Source : "Indice des prix du transport routier de marchandises" (MEDDE) ; EPTMC (Encuesta Permanente de Transporte de Mercancías por Carretera) ; DESTATIS (Statistisches Budesamt) ; INE/DL 294/97

Figure 45 – Evolution of transport price : road (2010: base 100)



Source : "Indice des prix du transport routier de marchandises" (MEDDE) ; EPTMC (Encuesta Permanente de Transporte de Mercancías por Carretera) ; DESTATIS (Statistisches Budesamt) ; INE/DL 294/97

1.4.2.2 Rail

This subsection presents the rail transport price evolution between 2010 and 2017 (until 2018 for Portugal). The base index year to which the prices are compared to is 2010.

In general terms, the rail transport prices vary greatly in these four countries from one year to another.

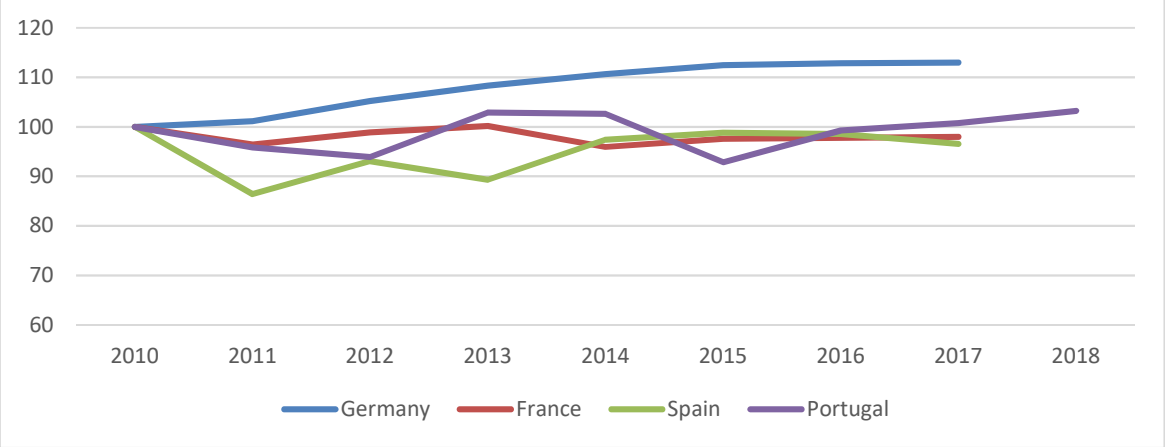
- In Germany the rail transport prices have increased steadily between 2010 and 2017. In 2017, the transport prices have increased approximately 13 p.p. compared to the base year.
- In France the rail transport prices have known a peak in 2012, and two low points, one in 2011 and another in 2014. In 2014 the rail prices were the lowest since 2010. The last few years, rail transportation prices have steadily increased and approached the base year prices. In 2017, the rail transport prices were around 2 p.p. lower than in 2010.
- In Portugal, the rail transport prices have varied year to year between 2010 and 107 following a cycle where the prices decrease few years and then also decrease few years. In 2017, the rail transport prices have reached 2010 price level and then have kept increasing in 2018.
- In Spain, in a general manner the rail transport prices have increased, especially between 2010 and 2011 (-20 p.p.). Since 2011, the prices have practically remained the same. In 2014, the rail transport prices were almost 20 p.p. lower than in 2010.

Table 48 – Transport Price : Rail (2010: base 100)

	Germany	France	Spain	Portugal
2010	100,0	100,0	100,0	100,0
2011	101,2	96,4	86,4	95,9
2012	105,3	98,9	93,1	93,9
2013	108,3	100,2	89,3	102,9
2014	110,7	95,9	97,4	102,6
2015	112,5	97,6	98,8	92,9
2016	112,9	97,8	98,6	99,3
2017	113,0	98,0	96,5	100,7
2018				103,2

Source: 2003-2010, 2013 (CCTN MEDDE), 2011-2014 (IRG) ; OFE (Obseratorio del Ferrocarril en España) ; DESTATIS (Statistisches Budesamt)

Figure 46 – Evolution of transport price : rail (2010: base 100)



Source: 2003-2010, 2013 (CCTN MEDDE), 2011-2014 (IRG) ; OFE (Obseratorio del Ferrocarril en España) ; DESTATIS (Statistisches Budesamt)

Transportation prices are the results of the evolutions of their components, among which the energy prices, labour costs and toll costs.

It appears that the compound structure of transportation prices does not allow to highlight a strong connection between causes and consequences, except between fuel prices and road costs in Portugal: road costs have directly followed the evolution of fuel prices while the effect has been levelled out in the three other countries.

Also, apart for Portuguese road costs, prices seem to remain quite steady or to fluctuate over a steady value. The only lasting trend that we can observed is the continuous increase of German prices, with rail prices growing slightly ahead of road prices.

1.4.3 Forecast and comparison with TMS

The Transport Market Study of 2013 provides some information on the evolution of prices on a selection of origin – destination as follows. No other assumptions are communicated in the TMS update of December 2014. Compound annual growth rates are calculated on the basis of prices per ton in constant euros given by the TMS. Rail prices correspond to the average value over each train type weighted by the related volumes.

Table 49 – Transport prices' growth rate forecasted in TMS (constant euros)

	Paris-Bilbao		Paris-Madrid		Paris – Poceirão		Madrid – Poceirão	
	Road	**Rail**	**Road**	**Rail**	**Road**	**Rail**	**Road**	**Rail**
2010-2020	0,40%	N/A	0,46%	N/A	0,40%	N/A	0,44%	-2,44%
2020-2030	0,23%	0,28%	0,22%	-3,13%	0,28%	-5,34%	0,21%	-2,71%
2030-2050	0,00%	0,00%	0,00%	0,00%	0,00%	-0,10%	0,00%	-0,27%

On the first half of the 2010 decade, the observed road prices showed an evolution of more than 1%/year in current euros in French and German indexes in current prices. For Spanish indexes, the evolution observed in the same period has been quite steady since 2010 in current prices. We assume that the inputs of road price evolution in the TMS are given in constant euros to which the inflation must be added as commonly done in most of similar market studies. As all inflation rates of France, Germany, Portugal and Spain have been in a range of 1.0 to 1.3%/year, the assumptions of road price taken in the TMS seem to be overestimated by at least 0.5 percentage points for the present decade. The evolution after 2020 seems more prudent regarding the most recent developments.

In the same recent period, the rail prices presented an evolution of over 1%/year for France, Spain and Germany and a quite steady situation in Portuguese indexes in current prices. The corresponding assumptions in the TMS are a decrease of more than 2% in constant euros for Spain-Portugal relations and a decrease after 2020 for all relations reaching Madrid or Poceirão. Such assumptions with 1.0% p.p of inflation remain largely under the recent observations which present an increase in real prices. This gap may be partly explained by the selection of origin-destination and the related expectations on productivity increase for the international rail services, historically hampered by more operational concerns than domestic services.

2. CORRIDOR DEMAND MONITORING

2.1 Road freight traffic evolution

Road freight traffic still represents the core market of goods transport at a European level: its evolution is largely linked with the economic activity and represents a potential reserve of diversion to railway services. The analysis of the intensity of road transport in tons permits to appraise the overall context of goods' mobility in parallel with the development of railway traffic.

The following tables and graphs gather the available data related to annual evolution of international road freight traffic in the Atlantic Corridor countries between 2010 and 2017.

2.1.1 Portuguese road freight traffic

The international road freight traffic with origin and destination in Portugal show floating values in the period 2010-2017, with a decrease in 2012 (due to the raise of fuel prices and to lower domestic consumption)[3], namely in what concerns destination. This fact can be explained both to the raise of fuel prices and to the economic recession that the country went through.

In 2017 the international road freight traffic with origin/destination in Portugal decreased 7%, when comparing with 2016. Spain is the most significant origin and destination of international road traffic of Portugal: in 2017 it represented approximately 64% regarding origin in Portugal and 72% in destination. France is the next major partner with average 17% origin in Portugal and 11% destination. Germany represents 6% in both directions and the set of the remaining EU countries represent 13% of traffic with origin in Portugal and 11% of destination Portugal.

Table 50 – International road freight traffic with Origin/Destination in Portugal 2010-2017 (thousand t)

Origin Portugal (thousand t)

	2010	2011	2012	2013	2014	2015	2016	2017
Germany	885	1 008	756	668	554	531	621	456
France	1 387	1 446	1 297	1 524	1 336	1 348	1 589	1 273
Spain	5 410	5 492	4 203	6 112	5 274	5 005	4 849	4 824
Other EU 28	1 004	1 214	930	1 231	1 217	843	1 050	962
Total EU 28	**8 686**	**9 160**	**7 186**	**9 535**	**8 381**	**7 726**	**8 109**	**7 515**

Destination Portugal (thousand t)

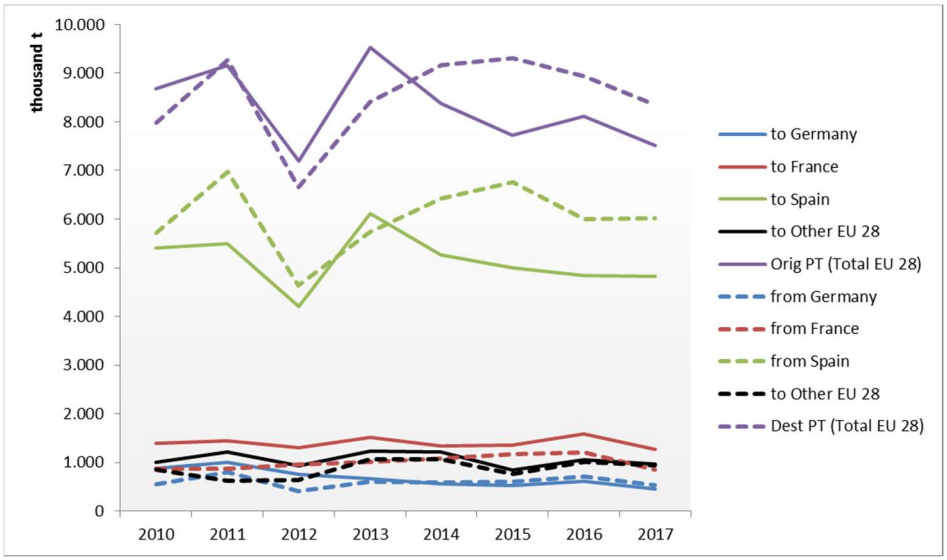
	2010	2011	2012	2013	2014	2015	2016	2017
Germany	546	797	412	611	592	613	711	535
France	869	873	966	1 006	1 078	1 173	1 201	858
Spain	5 711	6 973	4 637	5 727	6 426	6 767	6 008	6 019
Other EU 28	851	629	633	1 058	1 070	763	1 016	941
Total EU 28	**7 977**	**9 272**	**6 648**	**8 402**	**9 166**	**9 316**	**8 936**	**8 353**

Source: INE (Instituto Nacional de Estatística) - Estatísticas dos Transportes e Comunicações: Annual reports

[3] The data for the year 2018 is expected to be available in November 2019

Average Origin and Destination Portugal present even values in the period under analysis with all European partners , except Spain, where incoming traffic generally exceeds outgoing traffic.

Figure 47 – Evolution of international road freight traffic with Origin/Destination in Portugal 2010-2017 (thousand t)



Source: INE (Instituto Nacional de Estatística) - Estatísticas dos Transportes e Comunicações: Annual reports

2.1.2 Spanish road freight traffic

The international road freight traffic with origin in Spain in the period 2010-2018 shows an overall growth trend with a slight decrease in 2013, namely in destination Spain, that may be associated both with the raise of fuel prices and to the economic recession that the country went through.

Origin in Spain is higher than Destination by an average 25% in the analysed period.

In 2018 traffic with origin in Spain grew approximately 3% and the destination Spain grew more than 7%, showing the resumption of Spanish economy.

In what regards the countries of the Atlantic Corridor, to France and Germany a slight increase trend can be observed, only interrupted in 2016, both inbound and outbound directions. The relationship with France is the most significant – approximately 50% of the total traffic in both directions -, being the outbound traffic 16% higher than the opposite direction.

Germany and Portugal present values of the same magnitude: approximately 12 to 14%. The set of Other EU Countries represent an average 22% in both directions.

Table 51 – International road freight traffic with Origin/Destination in Spain 2010-2018 (thousand t)

Origin Spain (thousand t)

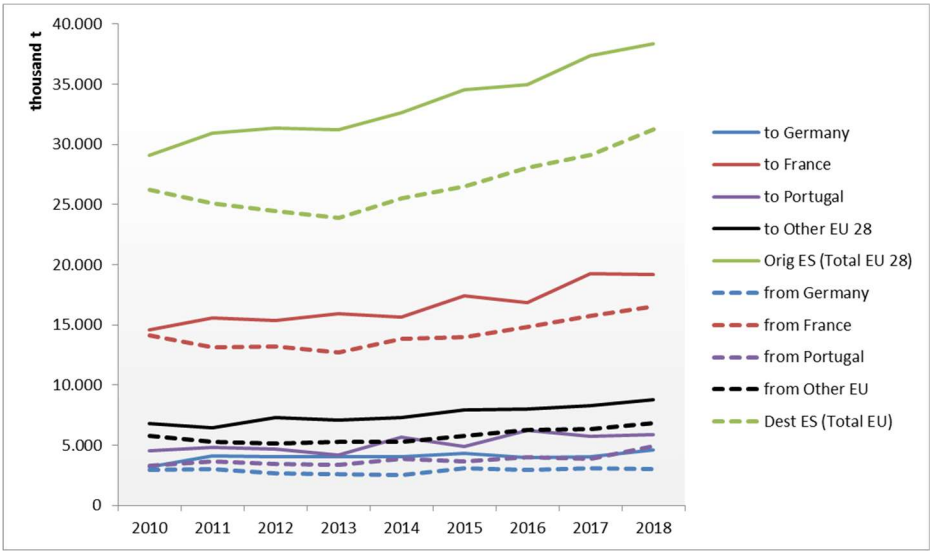
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Germany	3 193	4 101	4 019	4 062	4 014	4 304	3 950	4 056	4 614
France	14 600	15 541	15 332	15 917	15 671	17 431	16 816	19 282	19 151
Portugal	4 531	4 845	4 699	4 176	5 679	4 886	6 222	5 753	5 874
Other EU 28	6 773	6 429	7 284	7 071	7 259	7 905	8 008	8 292	8 753
Total EU 28	**29 097**	**30 916**	**31 334**	**31 227**	**32 623**	**34 525**	**34 996**	**37 382**	**38 392**

Destination Spain (thousand t)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Germany	2 954	2 989	2 671	2 617	2 513	3 118	2 921	3 117	3 018
France	14 155	13 119	13 185	12 672	13 874	13 965	14 864	15 767	16 513
Portugal	3 324	3 664	3 439	3 353	3 893	3 677	3 977	3 898	4 906
Other EU 28	5 805	5 289	5 164	5 244	5 264	5 739	6 271	6 329	6 832
Total EU 28	**26 238**	**25 060**	**24 459**	**23 886**	**25 544**	**26 500**	**28 033**	**29 111**	**31 269**

Source: Encuesta Permanente de Transporte de Mercancías por Carretera

Figure 48 – Evolution of international road freight traffic with Origin/Destination in Spain 2010-2018 (thousand t)



Source: Encuesta Permanente de Transporte de Mercancías por Carretera

2.1.3 French road freight traffic

The analysis of 2010-2014[4] period indicates that around 60% of French international road freight traffic is from or to EU countries other than Portugal, Spain or Germany. The data shows a decrease in 2012, namely in what concerns traffic with origin in France, already recovered in 2013.

Considering France as origin, the international road freight traffic to Spain and Germany can be considered stable, although destination Germany presents a slight downward trend.

Considering France as destination, traffic from Germany also presents a downward trend, while data related to Spain shows an increase since 2011.
Among the corridor countries, Spain is the most relevant partner, with average 23% of traffic with origin in France and 22% of destination. Germany is responsible for an average of 16% both in origin and destination and Portugal holds around 2% of traffic. The set of "Other EU countries" represent nearly 60% of traffic.

Table 52 – International road freight traffic with Origin/Destination in France in the period 2010-2014 (thousand t)

Origin France (thousand t)

	2010	2011	2012	2013	2014
Germany	12 129	12 268	11 948	10 846	9 787
Spain	16 472	16 292	16 403	16 612	17 155
Portugal	1 201	858	1 726	1 769	2 195
Other EU countries	45 166	41 195	36 771	42 148	43 504
Total	**74 968**	**70 613**	**66 848**	**71 375**	**72 641**

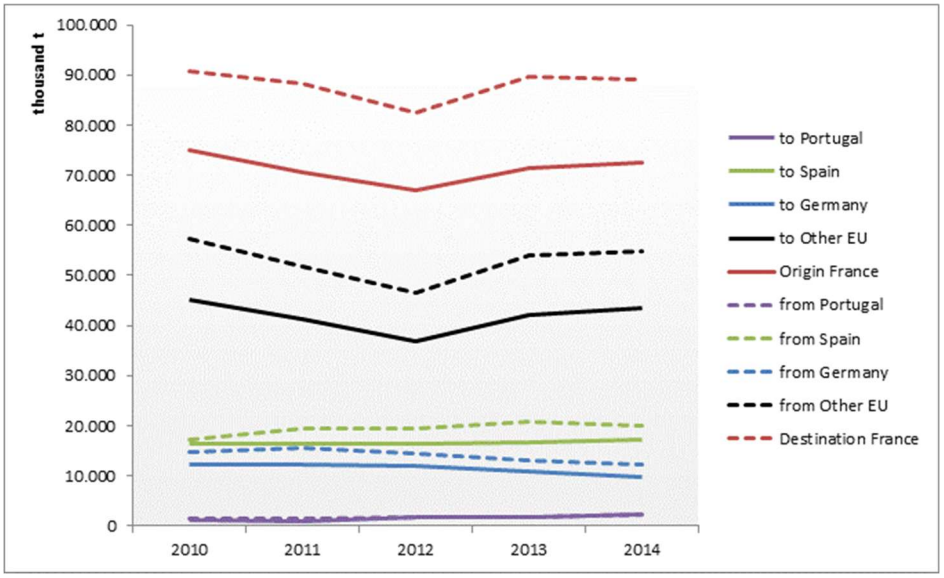
Destination France (thousand t)

	2010	2011	2012	2013	2014
Germany	14 727	15 453	14 576	13 139	12 322
Spain	17 111	19 447	19 577	20 799	19 904
Portugal	1 363	1 542	1 618	1 838	2 184
Other EU countries	57 425	51 810	46 633	53 903	54 814
Total	**90 626**	**88 252**	**82 404**	**89 679**	**89 224**

Source: BdD SITRAM(TRM UE.2 - Répartition par année, pavillon, pays de chargement ou de déchargement et nature de marchandise 2008 - 2014 (NST2007))

[4] The latest data available is for the year 2014, updated at 27th of July 2017. Therefore, the data for the year 2015 can be expected to be available in July 2018.

Figure 49 – Evolution of international road freight traffic with Origin /Destination in France 2010-2014 (thousand t)



Source: BdD SITRAM(TRM UE.2 - Répartition par année, pavillon, pays de chargement ou de déchargement et nature de marchandise 2008 - 2014 (NST2007))

2.1.4 German road freight traffic

The international road freight traffic in Germany occurs mostly with the EU countries not belonging to the Atlantic Corridor, with an average 85% in both directions.

France may be regarded as the only significant partner in the Corridor, with an average 13% outbound traffic and 12% in the opposite direction. Spain holds around 3% in both directions and Portugal less than 1%.

An overall stability with a slight growing trend can be observed, with a more expressive increase of outbound traffic in 2015 - 7%. In 2016 both directions resumed the previous trend.

Table 53 – International road freight traffic with Origin/Destination in Germany 2010-2016 (thousand t)

Origin Germany (thousand t)

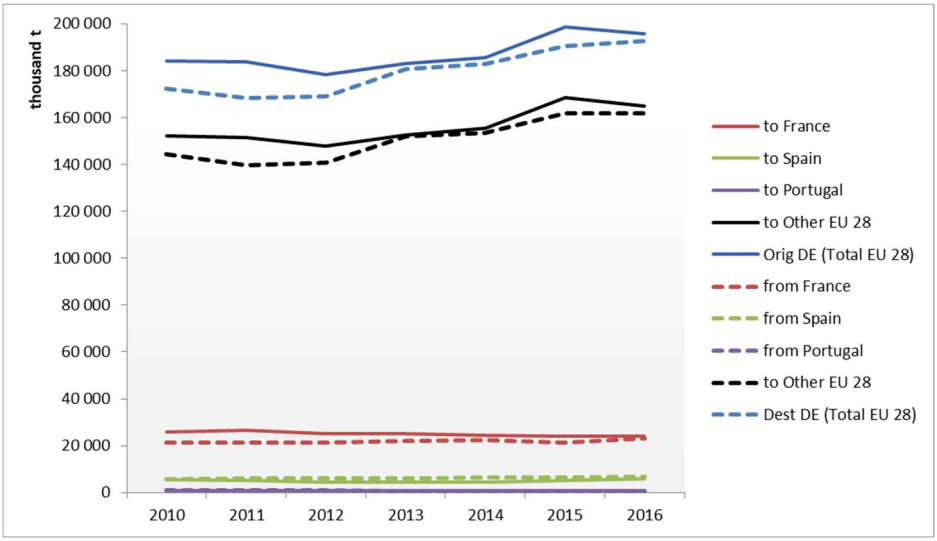
	2010	2011	2012	2013	2014	2015	2016
France	25 917	26 460	25 206	24 954	24 486	23 904	24 010
Spain	5 357	4 997	4 575	4 610	4 564	5 318	5 853
Portugal	781	952	680	863	880	833	898
Other EU 28	152 121	151 431	147 849	152 610	155 508	168 545	164 929
Total EU 28	**184 176**	**183 840**	**178 310**	**183 037**	**185 438**	**198 600**	**195 690**

Destination Germany (thousand t)

	2010	2011	2012	2013	2014	2015	2016
France	21 487	21 366	21 223	21 901	22 407	21 420	23 280
Spain	5 633	6 065	5 959	6 122	6 269	6 539	6 971
Portugal	1 007	1 075	907	700	637	511	665
Other EU 28	144 286	139 808	140 893	152 090	153 464	161 832	161 832
Total EU 28	**172 413**	**168 314**	**168 982**	**180 813**	**182 777**	**190 302**	**192 748**

Source: Kraftfahrt-Bundesamt

Figure 50 – Evolution of international road freight traffic with Origin/Destination in Germany 2010-2015 (thousand t)



Source: Kraftfahrt-Bundesamt

2.1.5 Forecast and comparison with TMS

The table below displays the projections for international road traffics given by the TMS of December 2014. Road traffics evolution are measured via compound annual growth rates on net tons.

Table 54 – Road traffics growth rate forecasted in TMS

	Portugal- Spain	Portugal- Rest of EU28	Spain- Rest of EU28	Other Corridor flows
2010-20	1,0%	1,1%	2,0%	2,7%
2020-30	3,8%	2,0%	3,0%	3,2%
2030-50	2,1%	2,0%	2,0%	1,9%

Source: Traffic and Market Research Update for the Atlantic Corridor - Phase 3. December 2014

The road traffic evolution observed in the most recent period of 2010-2015 are the following on the same perimeter:

Table 55 – Road traffics growth rate observed

	Portugal- Spain	Portugal - Rest of EU28	Spain- Rest of EU28	Other Corridor flows*
2010-15	1,1%	-1,0%	2,1%	-0,5%

Source: Ibid, Other Corridor growth given for 2010-2013 only

The comparison on the most recent period between the road traffic evolution observed and the growth rates forecast on the decade show a consistent results for Portugal-Spain and Spain-Rest of EU28 flows. The rest of Portugal road flows growth are overestimated by 2 percentage points, probably due to the difficulties of economic recovery after the financial crisis of the previous decade. Other corridor flows, including France-Germany and other northern countries show a discrepancy which is tougher to explain due to the lack of detail on the perimeter concerned and the availability of only 3 years of observation in the TMS.

The international road freight traffic with origin and destination in Portugal show floating values in the period 2010-2017, with a decrease in 2012 (due to the raise of fuel prices and to lower domestic consumption). Nevertheless in 2017 both directions observed a decrease. From 2014 on inbound traffic exceeds the opposite direction. Spain is the main partner, holding more than 60% of outbound traffic and more than 70% in the opposite direction.

The origin in Spain in the period 2010-2017 shows an overall growth trend., with a slight decrease in 2013, namely in destination Spain, that may be attributed both to the raise of fuel prices and to the economic recession that the country went through. Origin in Spain is higher than destination by an average 25% in the analysed period.

In the period 2010-2014 France shows stable traffic values with a small decrease in 2012, namely in what concerns traffic with origin in France, already recovered in 2013. Destination in France is higher than origin by an average 20% in this period.

Between 2010 and 2016 the traffic values related to Germany show a slight increase trend. Origin Germany is practically balanced with destination. German traffic is dominantly oriented to and from countries not belonging to the corridor (more than 85%).France may be regarded as the single partner of corridor countries, holding less than 15% in both directions.

2.2 Rail freight traffic evolution

Rail freight traffic evolution statistics cover all border-crossing circulation on the border-points of the Atlantic Corridor. It thus do not represent only the corridor rail path use of all the railway activity on these points, allowing an overview of the dynamics of the railway sector for international services on this perimeter.

The following tables and graphics gather the data related to annual evolution of international train freight traffic in the countries of Atlantic Corridor between 2010 and 2018. The common source data is Eurostat.

2.2.1 Portuguese rail freight traffic

The international rail freight traffic with origin in Portugal shows an increasing trend between 2010 and 2015, but since 2016 the outgoing traffic has been decreasing. The opposite direction shows an increasing trend, with slight decreases in 2016 and 2018.

Since 2014, Spain is the exclusive international partner of Portugal in both directions. The inbound traffic doubles the outbound.

Table 56 – International rail freight traffic with Origin/Destination in Portugal in the period 2010-2018 (thousand t)

Origin Portugal (thousand t)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Germany	0	1	26	28	0	0	0	0	0
France	0	0	0	0	0	0	0	0	0
Spain	262	585	583	726	840	871	810	629	649
Other EU 28*	0	0	0	0	0	0	0	0	0
Total EU 28*	**262**	**586**	**609**	**754**	**840**	**871**	**810**	**629**	**649**

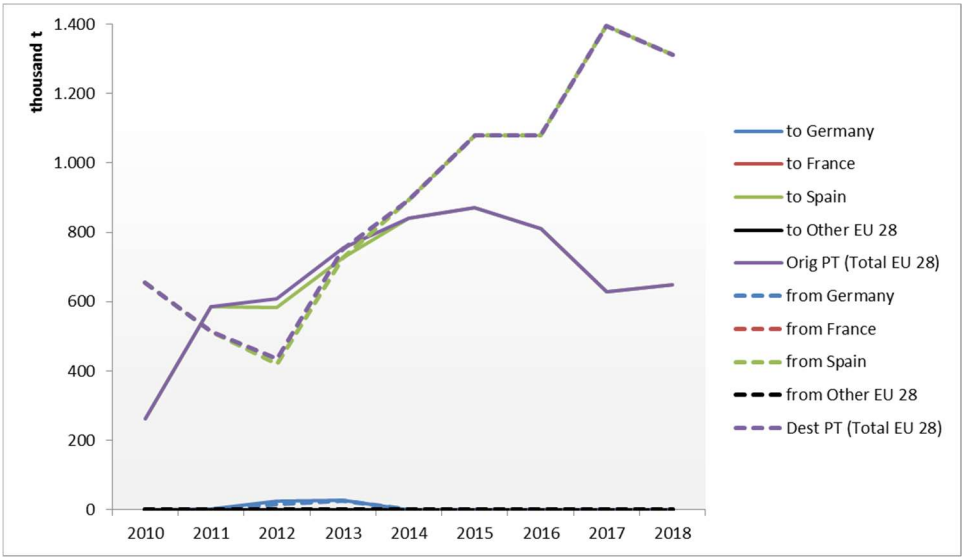
Destination Portugal (thousand t)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Germany	0	1	16	26	0	0	0	0	0
France	0	0	0	0	0	0	0	0	0
Spain	656	513	419	726	893	1 079	1 078	1 395	1 312
Other EU 28*	0	0	0	0	0	0	0	0	0
Total EU 28*	**656**	**514**	**435**	**752**	**893**	**1 079**	**1 078**	**1 395**	**1 312**

** Croatia joined in 2013*

Source: Eurostat (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intcmgn&lang=en; http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intgong&lang=en)

Figure 51 – Evolution of international rail freight traffic with Origin/Destination in Portugal 2010-2018 (thousand t)



Source: Eurostat (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intcmgn&lang=en; http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intgong&lang=en)

2.2.2 **Spanish rail freight traffic**

The international rail freight traffic with origin in Spain showed an increase trend until 2014 and some fluctuations since that year. This increase is mainly oriented to Portugal, since the remaining destinations even show a stable or declining trend. Portugal holds more than 50% of the total outbound traffic, followed by Germany with less than 25%. France and the set of other EU countries represent 8 and 6% respectively.

Destination Spain fell deeply in 2012, mainly due to the behaviour of France and Portugal traffics. This may be related to the economic and financial crisis Spain went through. Between 2013 and 2017 traffic has increased, but 2018 brought again lower values.

In 2018 the main origin of inbound traffic is Germany, representing more than 30%. France and Portugal hold more than 25% each and the set of other EU countries hold less than 10%.

In the last year (2018) overall inbound and outbound traffics show a difference of approximately 10%, with an advantage of destination Spain. This decreases are mainly attributed to Germany and Portugal.

Table 57 – International rail freight traffic with Origin/Destination in Spain 2010-2018 (thousand t)

Origin Spain (thousand t)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Germany	565	501	785	709	788	868	771	811	632
France	62	301	196	285	221	250	171	176	184
Portugal	196	240	907	1 070	1 299	1 253	1 360	1 404	1 317
Other EU 28*	195	257	69	189	225	100	137	143	124
Total EU 28*	**1 018**	**1 299**	**1 957**	**2 253**	**2 533**	**2 471**	**2 439**	**2 534**	**2 257**

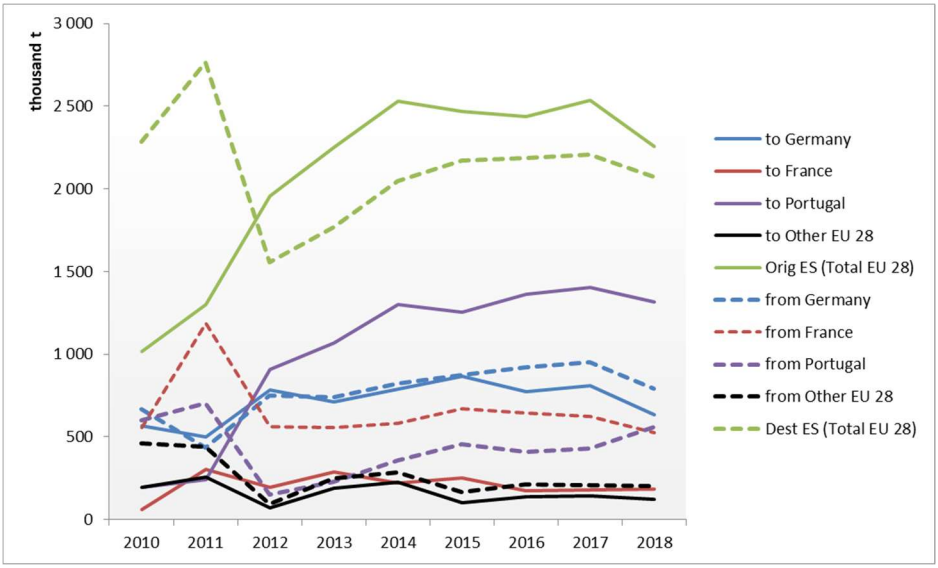
Destination Spain (thousand t)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Germany	668	436	748	739	824	874	921	949	792
France	557	1 188	562	554	583	672	644	622	524
Portugal	602	701	151	229	359	456	410	428	556
Other EU 28*	459	442	93	246	282	168	211	209	200
Total EU 28*	**2 286**	**2 767**	**1 554**	**1 768**	**2 048**	**2 170**	**2 186**	**2 208**	**2 072**

**Croatia joined EU in 2013*

Source: Eurostat (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intcmgn&lang=en; http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intgong&lang=en)

Figure 52 – Evolution of international rail freight traffic with Origin/Destination in Spain 2010-2018 (thousand t)



Source: Eurostat (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intcmgn&lang=en; http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intgong&lang=en)

2.2.3 French rail freight traffic

The international rail freight traffic with origin in France shows a growing trend since 2013. It is dominated by EU countries not belonging to the Atlantic Corridor - more than 70% -, followed by Germany with average 25%. Although low in the whole series, the absence of traffic from Spain in 2017 appears inconsistent, despite the strikes in France.

Destination France show a deceasing trend since 2016. It is also dominated by the set of EU countries not belonging to the corridor, representing more than 60% of the total traffic, followed by Germany with average 35%. Traffic from Spain strongly decreased from 2016 on.

Considering both directions, the relationship with Germany and Spain may be regarded as balanced.

From 2014 on, the relationship with Other EU countries became increasingly unbalanced, due mainly to reduction of destination France.

No traffic is observed to and from Portugal in the whole series.

Table 58 – International rail freight traffic with Origin/Destination in France 2010-2018 (thousand t)

Origin France (thousand t)

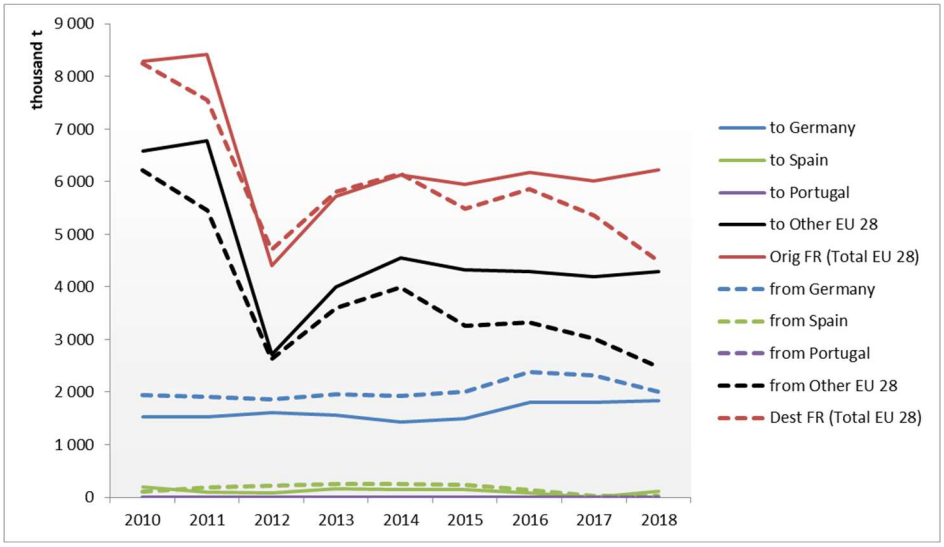
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Germany	1 531	1 532	1 602	1 563	1 428	1 489	1 801	1 810	1 837
Spain	188	104	87	157	151	142	77	0	109
Portugal	0	0	0	0	0	0	0	0	0
Other EU 28*	6 579	6 783	2 711	4 003	4 557	4 324	4 291	4 200**	4 286
Total EU 28*	**8 298**	**8 419**	**4 400**	**5 723**	**6 136**	**5 955**	**6 169**	**6 010****	**6 232**

Destination France (thousand t)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Germany	1 942	1 909	1 865	1 967	1 931	2 011	2 385	2 313	2 003
Spain	98	194	214	257	246	228	142	26	17
Portugal	0	0	0	0	0	0	0	0	0
Other EU 28*	6 212	5 447	2 630	3 595	3 983	3 255	3 328	3 013	2 475
Total EU 28*	**8 252**	**7 550**	**4 709**	**5 819**	**6 160**	**5 494**	**5 855**	**5 352**	**4 495**

**Croatia joined EU in 2013; **2017: Total and Other EU 28- values deduced due to missing data for Italy*
Source: Eurostat (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intcmgn&lang=en; http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intgong&lang=en)

Figure 53 – Evolution of international rail freight traffic with Origin/Destination in France 2010-2018 (thousand t)



Source: Eurostat (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intcmgn&lang=en; http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intgong&lang=en)

2.2.4 German rail freight traffic

The international rail freight traffic in Germany is strongly directed to and from EU countries not belonging to the Atlantic Corridor – more than 90%.

The international rail freight traffic with origin/destination Germany to and from Spain and France, is stable and may be regarded as residual (less than 10% together). The traffic exchange with Portugal is practically inexistent.

Between 2010 and 2017 origin and destination Germany showed a consistent growing trend, more significant in inbound traffic, which assumed prevalence over inbound volumes. In 2018, both origin and destination Germany decreased, with more expression in inbound traffic. For the first time since 2011 origin Germany is higher than destination.

Table 59 – International rail freight traffic with Origin/Destination in Germany 2010-2018 (thousand t)

Origin Germany (thousand t)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
France	1 745	1 524	2 267	2 663	3 547	4 019	3 215	3 487	2 955
Spain	668	619	514	458	535	692	635	727	689
Portugal	0	1	15	25	0	0	0	0	0
Other EU 28*	30 444	33 750	33 908	33248	35 682	37 353	50 401	51 894	47 401
Total EU 28*	**32 857**	**35 894**	**36 704**	**36 394**	**39 764**	**42 064**	**54 251**	**56 108**	**51 045**

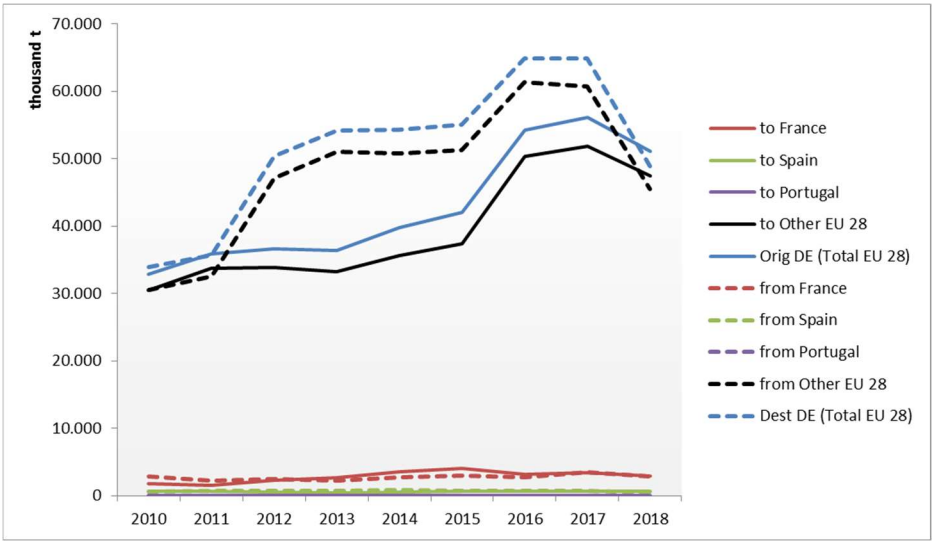
Destination Germany (thousand t)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
France	2 844	2 299	2 502	2 290	2 733	2 994	2 739	3 444	2 925
Spain	549	767	707	756	832	781	717	713	528
Portugal	0	1	25	27	0	0	0	0	0
Other EU 28*	30 535	32 608	47 172	51 056	50 787	51 286	61 387	60 709	45 461
Total EU 28*	**33 928**	**35 675**	**50 406**	**54 129**	**54 352**	**55 061**	**64 843**	**64 866**	**48 914**

**Croatia joined EU in 2013*

Source: Eurostat (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intcmgn&lang=en; http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intgong&lang=en)

Figure 54 – Evolution of international rail freight traffic with Origin/Destination in Germany 2010-2018 (thousand t)



Source: Eurostat (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intcmgn&lang=en; http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rail_go_intgong&lang=en)

2.2.5 Forecast and comparison with TMS

The table below displays the projections for international rail traffic provided by the TMS of December 2014. Rail traffics evolution are measured via compound annual growth rates on net tons.

Table 60 – Rail traffic growth rate forecasted in TMS

	Portugal- Spain	Portugal- Rest of EU28	Spain- Rest of EU28	Other Corridor flows
2010-20	0,6%	0,3%	2,6%	3,6%
2020-30	4,1%	1,6%	2,7%	3,8%
2030-50	2,2%	1,8%	1,6%	1,9%

Source: Traffic and Market Research Update for the Atlantic Corridor - Phase 3. December 2014

The rail traffic evolution observed in the most recent period of 2010-2015 is the following on the same perimeter:

Table 61 – Rail traffic growth rate observed

	Portugal- Spain	Portugal- Rest of EU28	Spain- Rest of EU28	Other Corridor flows*
2010-15	4,1%	N/A	8,3%	2,5%

Source: Ibid

The comparison between rail traffic forecast and observation in the first half of the 2010 decade is much more difficult as the statistic collection process of rail traffic do not seem to be consistent across all European countries. No detail are given about the sources used to constitute the reference volumes of the Transport Market Study. The differences of growth observed for the Iberian Peninsula seem to be mainly due to differences of perimeters and regions considered. The other Corridor flows evolution seem more consistent as the flows at stake are larger (over 10 M.T from 2020 and after).

The international rail freight traffic shows a significant difference of behaviour among all the Corridor countries. A strong traffic interdependence is present between Iberian Península counties, being Spain the single partner of Portugal both in origin and destination at this country since 2014. On the other hand, France and Germany relationship is dominated by EU countries not belonging to the Atlantic Corridor.

Origin in Portugal shows an increase trend between 2010 and 2017, but in 2018 the traffic was reduced. Destination in Portugal decreased in 2016 and 2017, with a slight recovery in 2018.

Origin in Spain showed an increase trend until 2014 and some fluctuations since that year. This increase is mainly oriented to Portugal, since the remaining destinations even show a declining trend. In 2016, as traffic to Portugal has stagnated, the total has decreased. Destination Spain fell deeply in 2012, mainly due to the behaviour of France and Portugal traffics. Between 2013 and 2017 traffic has increased, but 2018 brought again lower values.

France rail freight relationship is more significant with countries not belonging to the corridor. Origin and destination France have only one significant partner in the corridor: Germany, with balanced and stable traffic in both directions along the analysed period. In 2017 and 2018 a significant decrease of total inbound traffic is observed, due mainly to lower values from countries outside the corridor.

The international rail freight traffic in Germany is strongly directed to and from EU countries not belonging to the Atlantic Corridor – more than 90%. The international rail freight traffic with origin/destination Germany to and from Spain and France, is stable and may be regarded as residual (less than 10% together). The traffic exchange with Portugal is practically inexistent. Between 2010 and 2017 origin and destination Germany showed a consistent growing trend, more significant in inbound traffic, which assumed prevalence over inbound volumes. In 2018, both origin and destination Germany decreased, with more expression in inbound traffic. For the first time since 2011 origin Germany is higher than destination.

2.3 Border crossing traffic

The evolution of cross-border freight flows through the main crossing points between countries of the Atlantic Corridor allows to determine recent trends and evaluate the competitiveness of rail in international land transport across the corridor

2.3.1 Border crossing road traffic

In this section the main border road crossing points within the Atlantic Corridor are analysed. It should be noted that this information is difficult to gather, thus, the information available is scarce, and given the Directive 96/71/EC of the European Parliament concerning the posting of workers in the framework of the provision of services, there are no traffic controls or tolls in the borders. The principal way to measure these traffics is through the so-called Average Daily Traffic (ADT), which is the result of dividing the number of vehicles that go through a road section in a year by 365.

The next tables present the available data for the period 2010-2017 for the main road crossing points in both directions within the Atlantic Corridor limits for each of the three borders considered. Last data added is analysed with special attention.

Table 62 – Freight vehicles ADT in the main crossing points of the French-German border

	Forbach-Sarrebruck FR/DE	Strasbourg-Kehl FR/DE	**FR/DE aggregate**
2013	2 646	4 322	**6 968**
2014	2 754	4 187	**6 941**
2015	2 889	4 396	**7 285**
2016	2 806	3 921	**6 727**

Source: Direction interdépartementale des routes de l'est. Division d'exploitation de Metz

Table 63 –Heavy vehicles ADT[5] in the main crossing points of the Spanish-French border

	Irún-Biriatou ES/FR	Irún-Behobie bridge ES/FR	Irún-Hendaye bridge ES/FR	**ES/FR aggregate**
2011	8 265	340	374	**8 979**
2012	8 023	307	368	**8 698**
2013	7 780	274	361	**8 415**
2014	8 080	164	361	**8 605**
2015	8 640	320	320	**9 280**

Source: OTP (Observatorio hispano-francés de Tráfico en los Pirineos)

[5] ADT data includes buses in Spanish-French border, however the rate of buses is not considered significant (less than 5% of the total ADT of heavy vehicles)

Table 64 – Heavy vehicles ADT[6] in the main crossing points of the Portuguese-Spanish border

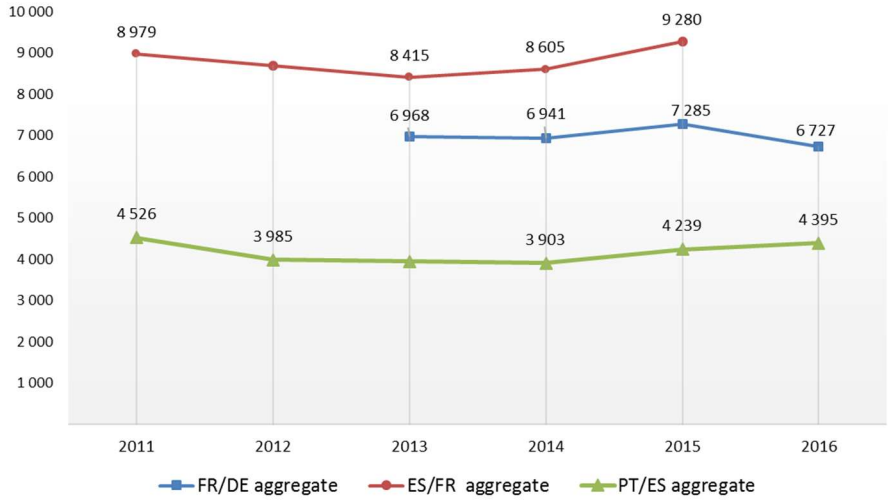
	Vilar Formoso-Fuentes de Oñoro PT/ES	Caia-Badajoz PT/ES	**PT/ES aggregate**
2011	2 820	1 706	**4 526**
2012	2 366	1 619	**3 985**
2013	2 212	1 732	**3 944**
2014	2 058	1 845	**3 903**
2015	2 250	1 989	**4 239**
2016	2 291	2 104	**4 395**

Source: OTEP (Observatorio Transfronterizo España/Portugal)

It is important to mention that calculations to aggregate border traffic have taken into account the main crossing points in order to better reflect reality and also to benefit from data of a larger period.

The next figure shows the aggregated Average Daily Traffics of freight vehicles for each of the three borders considered. It can be observed that the traffics remain stable in each of the three borders and that the Spanish-French border is the one accumulating more traffics.

Figure 55 – Aggregate freight vehicles ADT at the borders of Atlantic Corridor

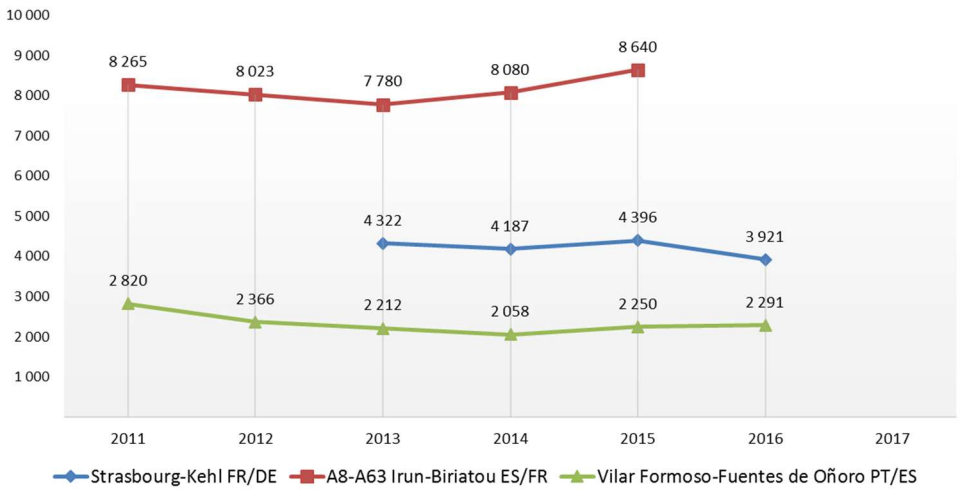


Source: Direction interdépartementale des routes de l'est, Division d'exploitation de Metz, OTP (Observatorio hispano-francés de Tráfico en los Pirineos) y OTEP (Observatorio Transfronterizo España/Portugal)

In the next section, each of the borders will be analysed separately, disaggregating them into each of the crossing points considered. As an introduction, the next graph presents the ADT of the main crossing points of the three borders:

6 ADT data includes buses in Portuguese- Spanish borders, however the rate of buses is not considered significant (approximately 5% of the total ADT of heavy vehicles)

Figure 56 – Freight vehicles ADT at main crossing points of Atlantic Corridor



Source: Direction interdépartementale des routes de l'est, Division d'exploitation de Metz, OTP (Observatorio hispano-francés de Tráfico en los Pirineos) y OTEP (Observatorio Transfronterizo España/Portugal)

It should be noted that the road traffic flows in crossing points might not be a direct indicator of the volumes of trade between countries. Specially in the case of the exchange between Germany and France, the availability of other modes of transport such as railway makes trade less dependent on road transportation.

- <u>French-German road border</u>

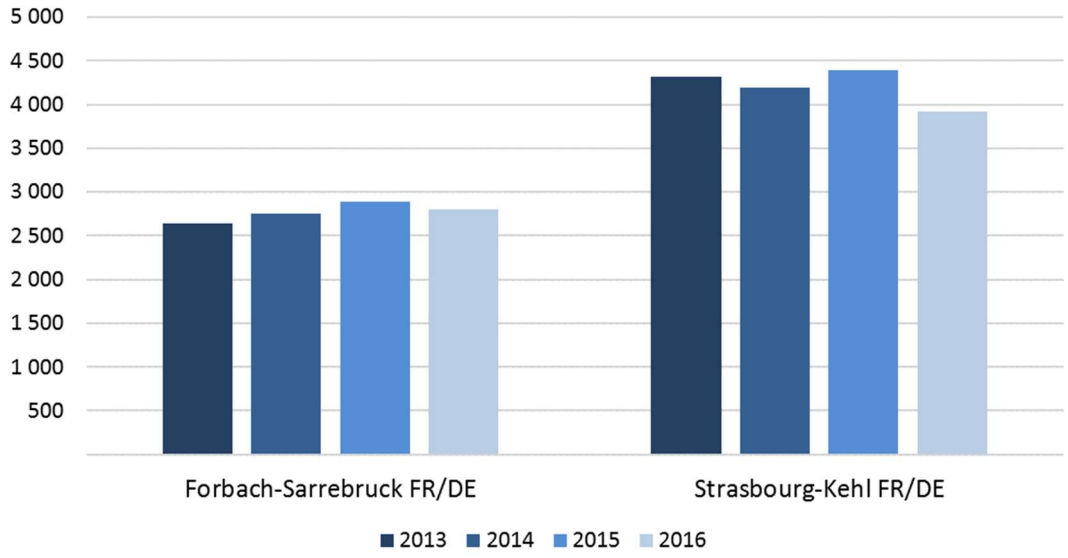
The crossing points considered for the French-German border are the A320 road, that links the towns of Forbach (east of Metz) and Saarbrücken in Germany, and the N4 border through Strasbourg.

Figure 57 – Road crossing points in the French-German border within the Atlantic Corridor

Source: Prepared with data from Google Maps

With regard to French/German border, there was a decrease in the heavy vehicles in 2016, especially in the Strasbourg-Kehl border.

Figure 58 – Freight vehicles ADT in crossing points of the French-German border



Source: Direction interdépartementale des routes de l'est, Division d'exploitation de Metz

- Spanish-French road border

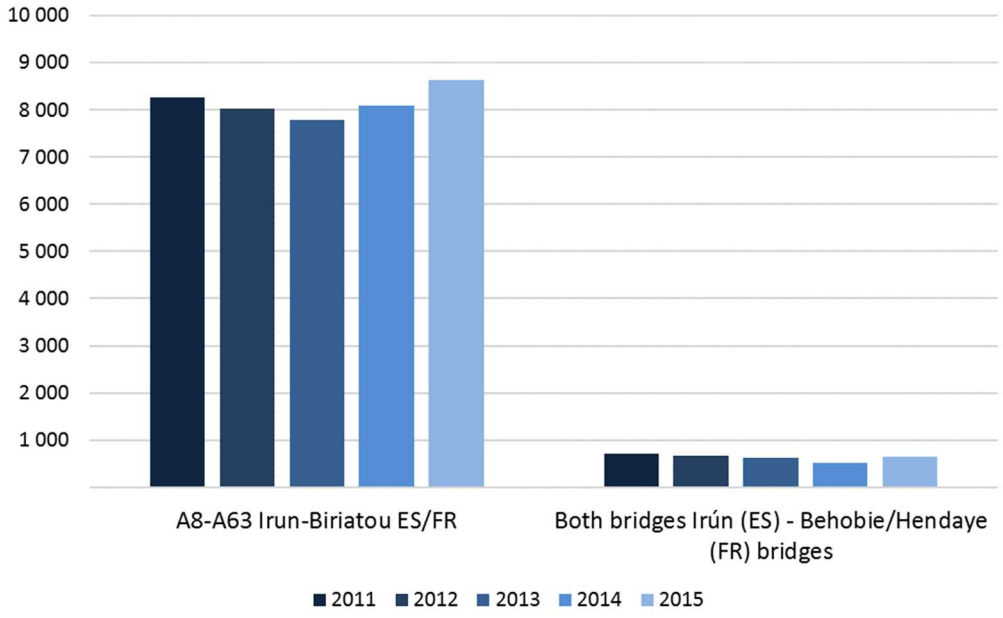
The next figure shows the existing roads in the Spanish/French border.

Figure 59 – Road infrastructure in the Spanish/French border

Source: Prepared with data from OTP (Observatorio hispano-francés de Tráfico en los Pirineos)

For the Spanish-French road border three crossing points were considered. They are very close to each other in the area of Irún. The A8-A63 Irún - Biriatou highway gathers more than 90% of the total road freight traffic, whereas the other bridges are secondary roads which accumulate very low amounts of traffic. There has been a recovery since the lowest volume in 2013, reaching traffic levels above to values of 2011, close to 9 000 heavy vehicles per day. Last available data confirms an overall increase in the traffic along with the economic recovery.

Figure 60 – Freight vehicles ADT in crossing points of the Spanish-French Border



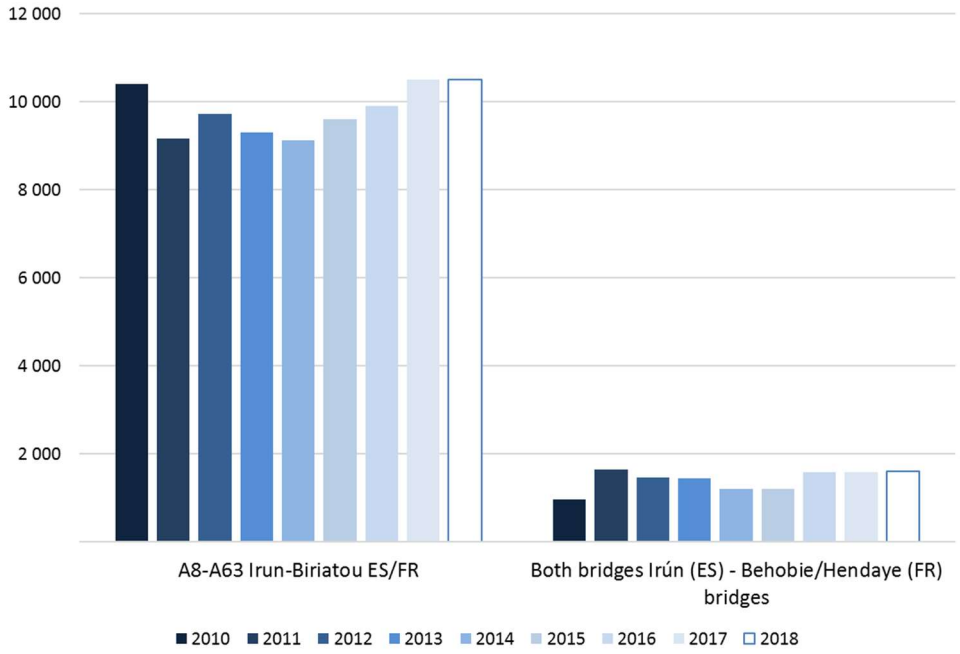
Source: OTP (Observatorio hispano-francés de Tráfico en los Pirineos)

It is worth mentioning that the data provided by OTP are slightly prepared in order to better reflect border crossing road traffic and to exclude vehicle movements that go near the border but finally stay in the same country. However data available only covers the period 2011 – 2015 period in OTP.

On the other hand, the next graph presents a more recent evolution of the main crossing points according to the data provided by official Traffic maps of Deputy Council of Guipuzcoa. As it is shown in the graph, the freight vehicles traffic has continued growing in the period 2015-2017.

The differences in data are due to the consider or not the local movements near the border, as it has been explained previously.

Figure 61 – Freight vehicles ADT in crossing points of the Spanish-French Border

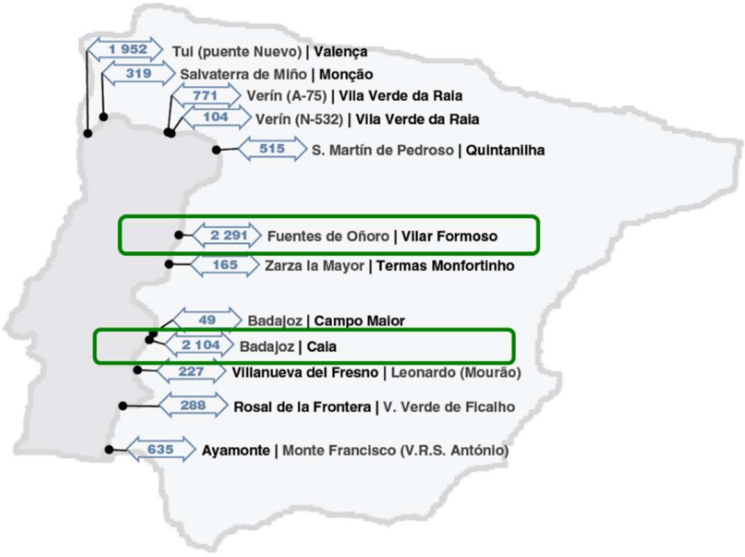


Source: Traffic maps of Deputy Council of Guipuzcoa

- Portuguese-Spanish road border

The Portuguese-Spanish border is very different from the Spanish-French one. There is not an important geographical obstacle such as the Pyrenees, therefore crossing this border is much easier and there are many more crossing points. However, as it can be seen in both figures, within the framework of the Atlantic Corridor, there are two main crossing points: Vilar Formoso-Fuentes de Oñoro and Caia-Badajoz.

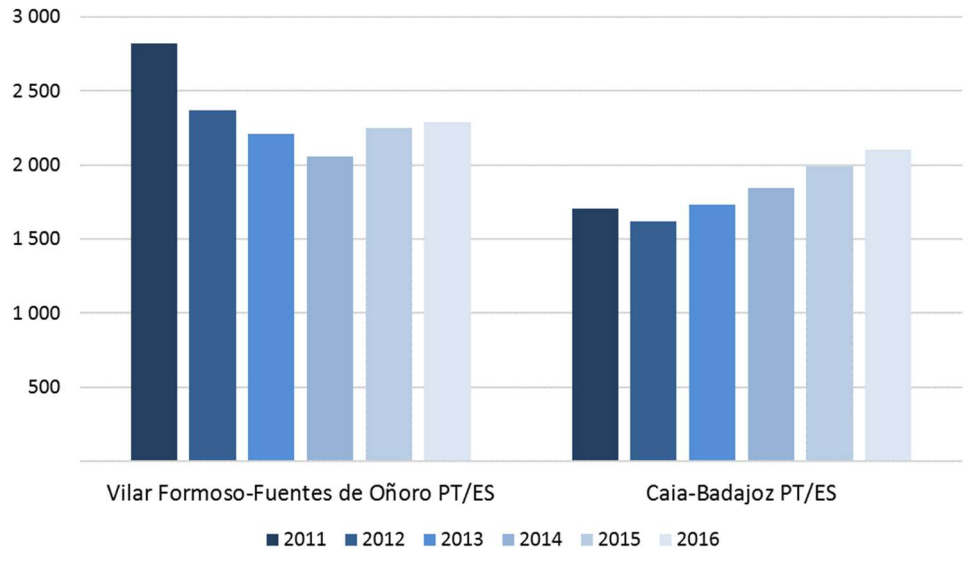
Figure 62 – Freight vehicles ADT in the Portuguese-Spanish border (2016)



Source: Prepared with data from OTEP (Observatorio Transfronterizo España/Portugal)

The traffic data of this border from OTEP show that, within the Atlantic Corridor framework, the Portuguese-Spanish border is the one with the lowest flow of road freight traffic: 4 400 average daily freight vehicles (considering the two main borders of Vilar Formoso-Fuentes de Oñoro and Caia-Badajoz), compared to around 7 300 in the French-German border and 9 300 in the French- Spanish one in 2015. Of those 4 400 average daily vehicles 52% go through the Vilar Formoso-Fuentes de Oñoro crossing point and 48% go through the Caia-Badajoz crossing point.

Figure 63 – Freight vehicles ADT in crossing points of the Portuguese-Spanish road border

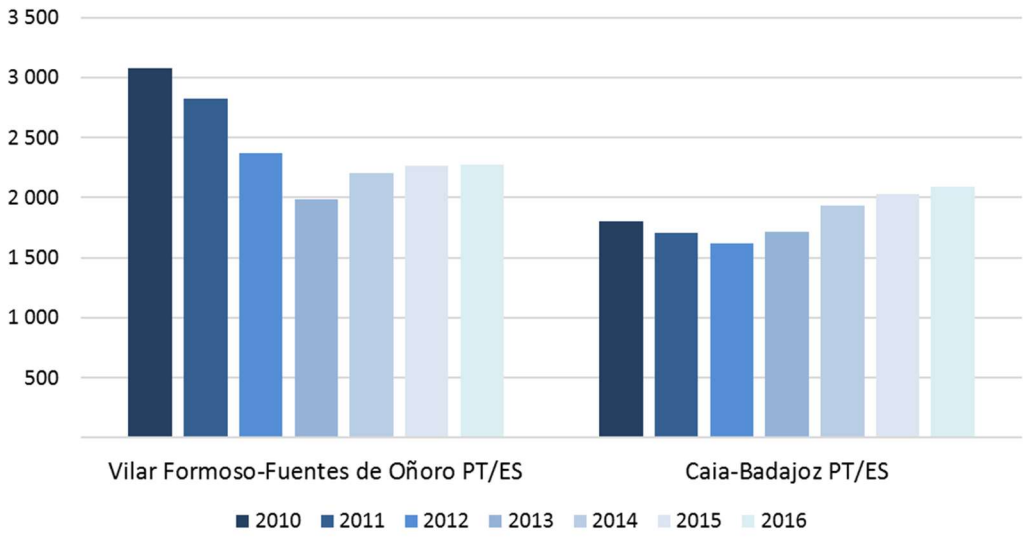


Source: OTEP (Observatorio Transfronterizo España/Portugal)

It can be noted that Vilar Formoso - Fuentes de Oñoro, that has the largest flows, shows a sharp decrease in the period 2011-2013. It experiences a slight recovery since 2013 but still far from the traffic achieved in 2011. On the other hand, Caia-Badajoz traffic of freight vehicles has increased 16,3% since 2011. As it was noted for the Spanish- French road border, the data provided by OTEP are slightly prepared excluding local vehicle movements near the border.

The figures provided by official Traffic Maps of Spanish Ministry of Transport offer raw data directly collected from traffic counters, and usually they allow to obtain the whole sample for a more recent period in the two main crossing points of Portuguese-Spanish road border, but currently both sources (OTEP and Traffic Maps of Transport) have been updated until 2016 .

Figure 64 – Freight vehicles ADT in main crossing points of the Portuguese-Spanish road border



Source: Traffic Maps of Spanish Ministry of Transport

2.3.2 Border crossing rail traffic

In this section, the main railway border crossing points within the Atlantic Corridor are analysed.

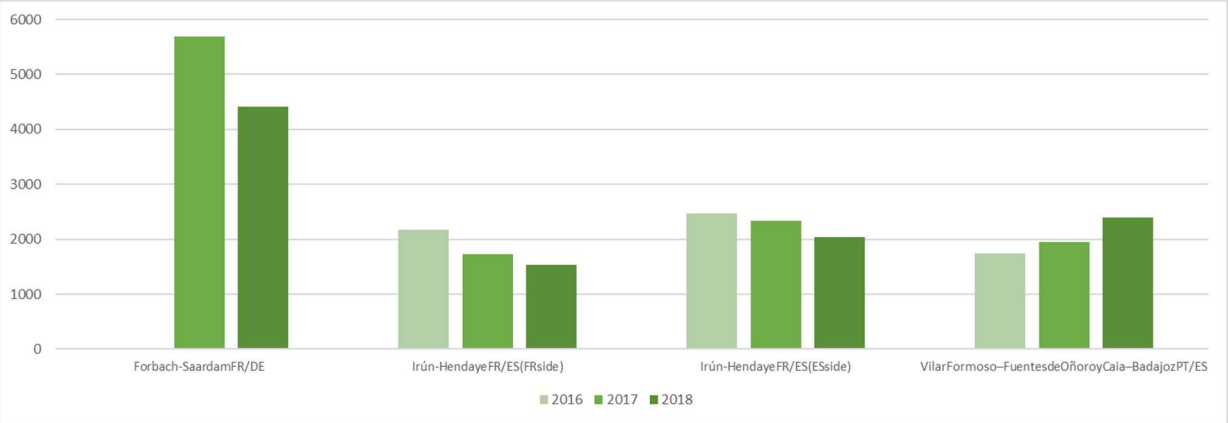
The next table and figure present the available data for 2016 - 2018 regarding train operations provided by the Railway Infrastructure Managers for the main railway crossing points in both directions. It should be mentioned that figures account for operations registered and not programmed. Moreover, it is important to bear in mind that to cross the Spanish French border the rolling stock has to switch between Iberian and international gauge. Similarly, the composition of freight trains sets tends to be shorter in the Iberian Peninsula than in the rest of Europe, so a larger number of operations is required to transport similar cargo.

Table 65 – Freight trains running in the main crossing border points of the Atlantic Corridor

	Forbach-Saardam FR/DE	Irún - Hendaye FR/ES (FR side)	Irún - Hendaye FR/ES (ES side)	Vilar Formoso – Fuentes de Oñoro y Caia – Badajoz PT/ES
2016	-	2 179	2 472	1 740
2017	5 695	1 727	2 329	1 947
2018	4 417	1 528	2 036	2 398
2016 – 17 (%)	*-*	*-20,7%*	*-5,8%*	*11, 9%*
2017 – 18 (%)	*-22,4%*	*-11,5%*	*-12,6%*	*23,2%*

Source: EEIG Atlantic Corridor

Figure 65 – Freight trains running in the main crossing border points of the Atlantic Corridor



Source: EEIG Atlantic Corridor

Border crossing between France and Germany is the one with higher rail traffic, having over 4 000 operations each year since 2017. Intensity of use on the Iberian Peninsula is clearly lower, with an average yearly number of 2 000 operations at each border point, over the preceding three years .

Considering the borders between France, Spain and Portugal, traffic tends to increase at the Spanish-Portuguese border, while volumes are decreasing at the Pyrenean border, between France and Spain.

2.3.3 Forecast and comparison with TMS

There are no projections of border crossing road traffic in the sources of data consulted.

The following tables gather the information regarding expected land flows (Kt[7] and % of modal share[8]) of Atlantic Corridor presented in the TMS of December 2014, different from traffics on road and rail crossing points analysed before.

- French-German border

This section deals with land flows mostly between France and other European countries (except Portugal and Spain).

The forecast of land flows in the FR/DE border of the Atlantic Corridor is 37,9 Millions t in 2020 and 79,9 Millions t in 2050, with a foresee rail share of 17,4% in 2020 and 20,7% in 2050.

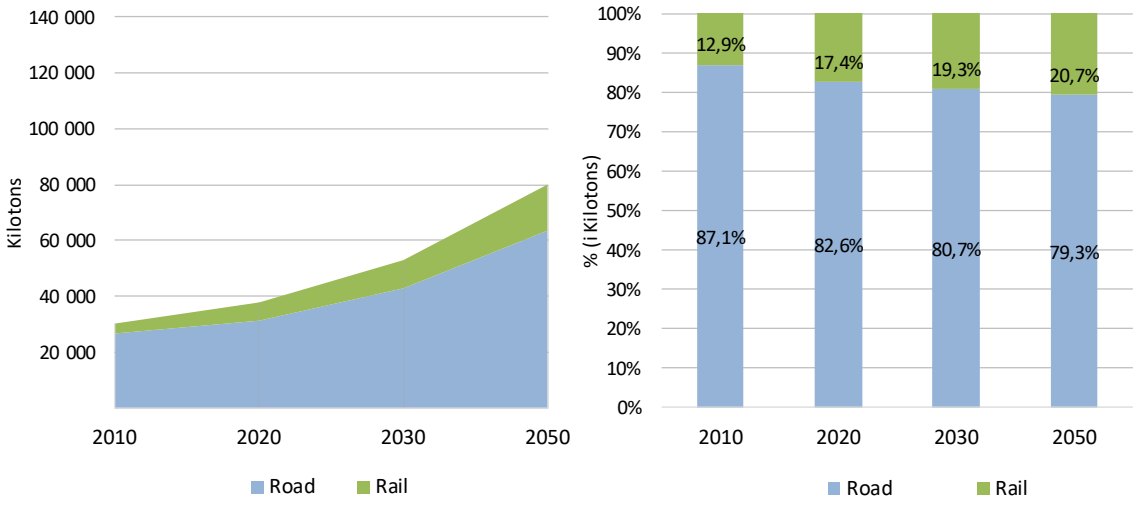
The highest flow and share of rail traffics in the borders of the Atlantic Corridor is in FR/DE border, as it is confirmed by the registered rail data in the previous section.

Table 66 – Forecasts of land flows in the FR/DE border (in kT)

	Rail		Road		Total land modes (Kt)
	Conventional + combined (kT)	% Rail	(kT)	% Road	
2010	3 924	12,9%	26 566	87,1%	30 490
2020	6 583	17,4%	31 343	82,6%	37 926
2030	10 192	19,3%	42 712	80,7%	52 904
2050	16 533	20,7%	63 421	79,3%	79 954

Source: Traffic and Market Research Update for the Atlantic Corridor - Phase 4. December 2014

Figure 66 – Forecasts of land flows in the FR/DE border (kT and modal share (%))



Source: Prepared with data from Traffic and Market Research Update for the Atlantic Corridor - Phase 4. December 2014

[7] Kilotons
[8] Market share of road transport with respect to traffics by rail, rolling motorways, maritime and road.

The TMS forecast predicts an accumulated rail gowth of 321% in the period cosidered, and a CAGR 2010-15 of 3,66%.

Table 67 – Accumulated growth of land flows (kT) forecasted in FR/DE border

	2010-2020	2020-2030	2030-2050	2010-2050	CAGR 2010-50
Rail	67,76%	54,82%	62,22%	321,33%	3,66%
Road	17,98%	36,27%	48,49%	138,73%	2,20%
Total land flows	24,39%	39,49%	51,13%	162,23%	2,44%

Source: Traffic and Market Research Update for the Atlantic Corridor - Phase 4. December 2014

- Spanish-French border (across the Pyrenees)

The flows across the Pyrenees are the ones which take place between the countries of the Iberian peninsula and the other European countries.

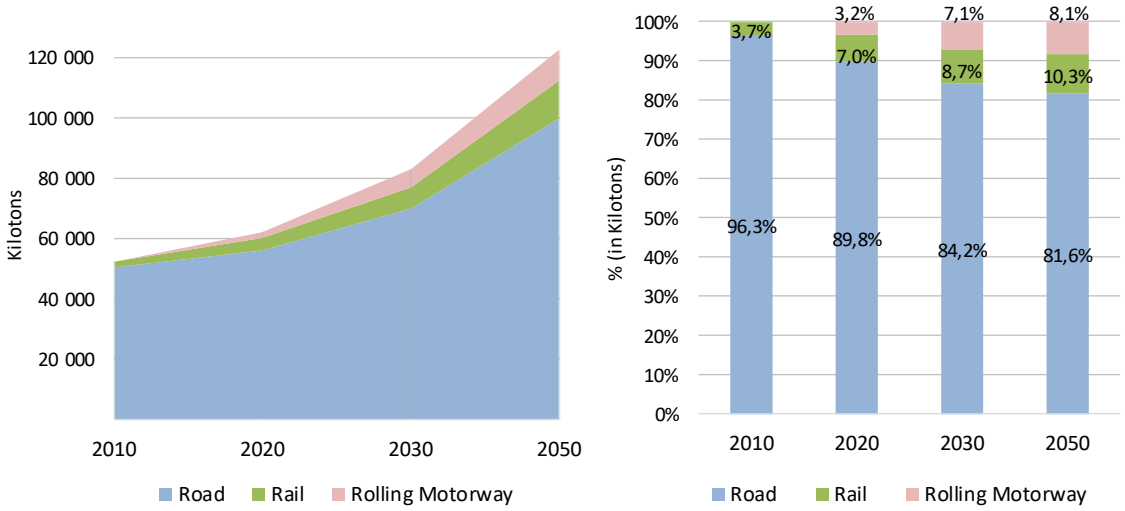
The following table reflects the forecast of land flows of 62,2 Millions t in 2020 and 122,3 Millions t in 2050. This forecast considers that in 2020 will begin to operate new rolling motorways services across the Pyrenees, which will contribute to increase the share of the total rail traffics up to 18,4% in 2050. In the other hand, the conventional and combined rail traffic forecast shows a share of 7% in 2020 and 10,3 % in 2050, that is very optimistic taken into account the current share of the international rail traffic (3,7% of the land traffics in 2015, according with the OTP-Observatorio hispano-francés de Tráfico en los Pirineos).

Table 68 – Forecasts of road flows in the ES/FR border (kT)

	Rail			Road		Total land modes (Kt)
	Conventional + combined (kT)	Rolling Motorway (kT)	% Rail	(kT)	% Road	
2010	1 963	-	3,7%	50 639	96,3%	52 602
2020	4 330	2 021	10,2%	55 891	89,8%	62 242
2030	7 187	5 877	15,8%	69 800	84,2%	82 864
2050	12 546	9 945	18,4%	99 793	81,6%	122 284

Source: Traffic and Market Research Update for the Atlantic Corridor - Phase 4. December 2014

Figure 67 – Forecasts of land flows in the ES/FR border (kT and modal share (%))



Source: Prepared with data from Traffic and Market Research Update for the Atlantic Corridor - Phase 4. December 2014

The expected rail growth is higher than in the other two borders in the Atlantic Corridor, with a foresee CAGR 2010-50 of 4,75% for rail traffic and 5,46 % for rolling motorway traffic.

Table 69 – Accumulated growth of road flows (kT) forecasted in ES/FR border

	2010-2020	2020-2030	2030-2050	2010-2050	CAGR 2010-50
Rail	120,58%	65,98%	74,57%	539,12%	4,75%
Rolling motorway	-	190,80%	69,22%	392,08%	5,46%
Road	10,37%	24,89%	42,97%	97,07%	1,71%
Total land flows	18,33%	33,13%	47,57%	132,47%	2,13%

Source: Traffic and Market Research Update for the Atlantic Corridor - Phase 4. December 2014

- Portuguese – Spanish border

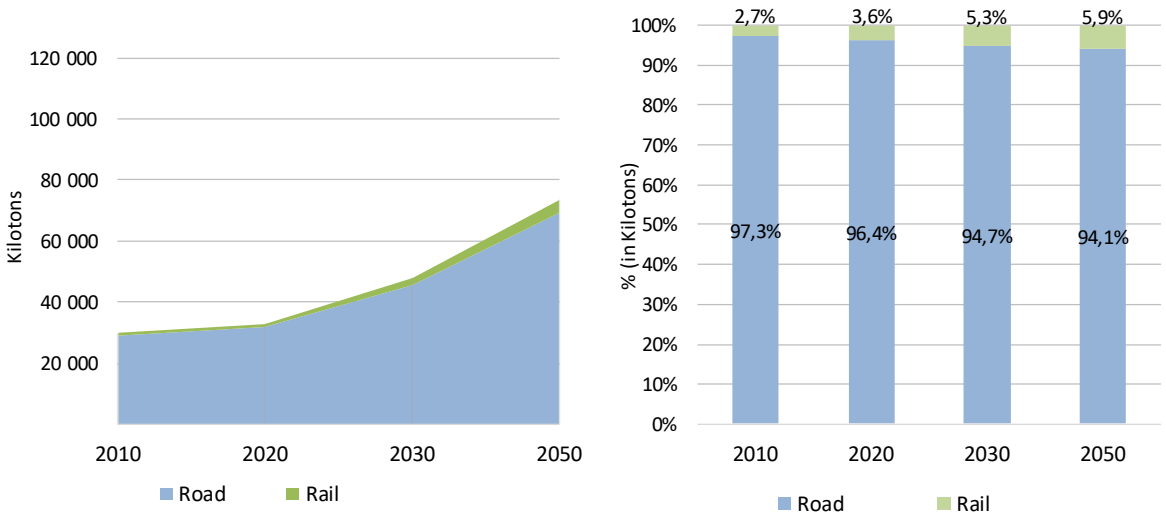
This section analyses the land flows between Spain and Portugal. The table below shows the land flows from the TMS forecast in the PT/ES border crossing points of the Atlantic Corridor.

Table 70 – Forecasts of road flows across the PT/ES border

	Rail		Road		Total land modes (Kt)
	Conventional + combined (kT)	% Rail	(kT)	% Road	
2010	793	2,7%	28 999	97,3%	29 792
2020	1 190	3,6%	31 751	96,4%	48 047
2030	2 535	5,3%	45 512	94,7%	52 904
2050	4 328	5,9%	69 103	94,1%	73 431

Source: Traffic and Market Research Update for the Atlantic Corridor - Phase 4. December 2014

Figure 68 – Forecasts of land flows in the PT/ES border (kT and modal share (%))



Source: Traffic and Market Research Update for the Atlantic Corridor - Phase 4. December 2014

The forecast of land flows in the PT/ES border of the Atlantic Corridor is 48,0 Millions t in 2020 and 73,4 Millions t in 2050, with a foresee rail share of 3,6% in 2020 and 5,9% in 2050.

The rail flows in the PT/ES border are the lowest (in volume and modal share) in borders between countries of the Atlantic Corridor.

Table 71 – Accumulated growth of road flows (kT) forecasted in PT/ES border

	2010-2020	2020-2030	2030-2050	2010-2050	CAGR 2010-50
Rail	50,06%	113,03%	70,73%	445,78%	4,33%
Road	9,49%	43,34%	51,83%	138,29%	2,19%
Total land flows	10,57%	45,86%	52,83%	146,48%	2,28%

Source: Traffic and Market Research Update for the Atlantic Corridor - Phase 4. December 2014

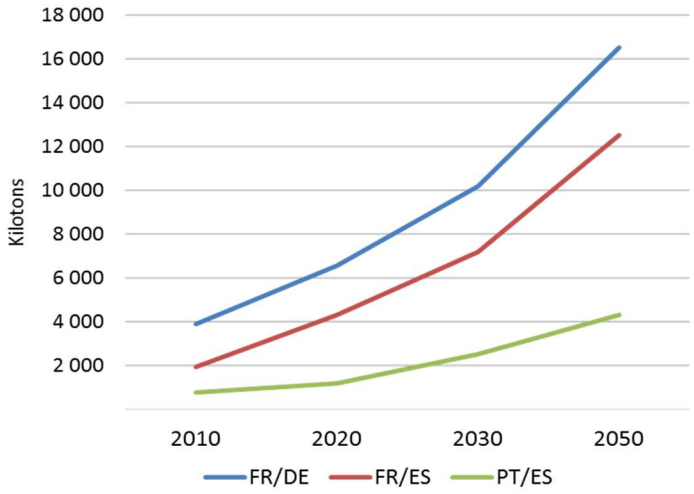
The TMS forecast predicts an accumulated rail growth of 446% in the period cosidered, and a CAGR 2010-15 of 4,33%, which isa similar growth to the case of ES/FR border.

Last table synthetizes the expected growth of rail flows in the Atlantic Corridor as presented in TMS of December 2014.

Table 72 – Accumulated growth of rail[9] flows (kT) forecasted in TMS

	2010-2020	2020-2030	2030-2050	2010-2050	CAGR 2010-50
FR/DE	67,76%	54,82%	62,22%	321,33%	3,66%
ES/FR	120,58%	65,98%	74,57%	539,12%	4,75%
PT/ES	50,06%	113,03%	70,73%	445,78%	4,33%

Source: Traffic and Market Research Update for the Atlantic Corridor - Phase 4. December 2014



The results show that for period 2010-2050, the rail flows between France and Spain are expected to grow 539 % while traffics PT/ES and FR/DE are expected to grow at around 446% an 321% respectively.

It is foreseen than The rail flows across the FR/DE border are the highest, while the flows in the PT/ES border are expected to be the lowest compared to the Spanish-French and French - German traffics.

The international cross-border flows of Atlantic Corridor mostly make use of road (> 90%), being the railway transport considerably reduced.

Freight vehicles ADT at the main borders of Atlantic Corridor has grown in the last year[10], in line with the economic recovery situation.

Overall, freight train flows have increased through border crossings in last year, although traffic between Spain and France has slightly descended. On the other hand, the French German border has registered the highest rail share, well above the rest of border crossings.

The TMS forecast shows a rail CAGR in 2010-50 between 3,66% in FR/DE border and 4,75% in FR/ES border. The FR/DE border shows the highest rail share from land traffics, unlike the FR/ES and PT/ES borders, with a very low rail shares currently.

[9] It is not considered the forecast of rolling motorways traffics.
[10] Last year of available data.

3. CORRIDOR OFFER MONITORING

3.1 Rail path offered capacity

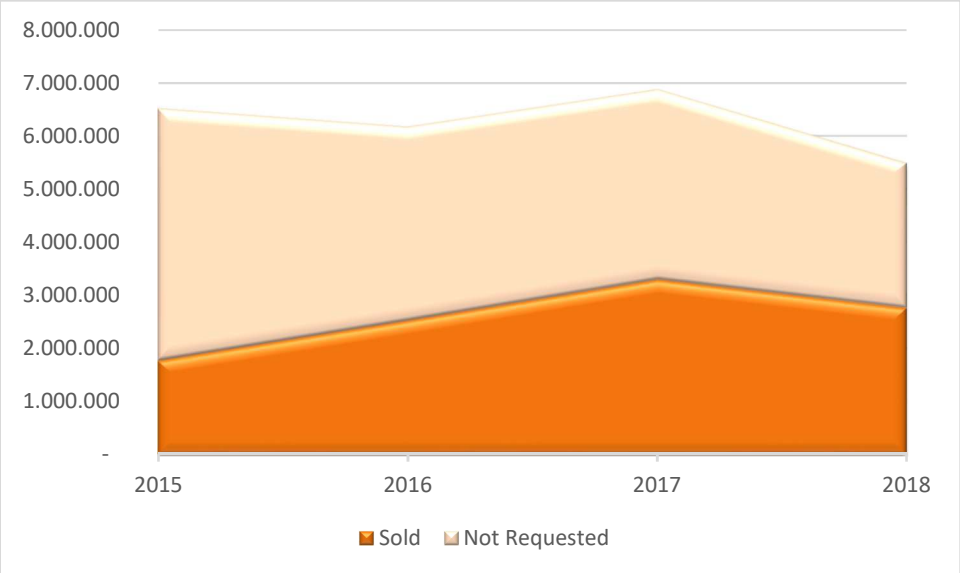
This subsection presents the evolution of the offered and sold capacity of the Pre-arranged Paths (Pap) in the Atlantic Corridor.

In general terms, the sold capacity corresponds to a share of the offered capacity, which evolves from one year to another, depending from the matching of the offer and demand and many other economic parameters. The difference between these two is significant and corresponds to the amount of rail paths transferred back to infrastructure managers for national purposes.

The sold capacity has increased constantly in the period 2015-2017 with an annual growth of 36%. The offered capacity has remained quite the same in terms of pre-arranged-path kilometres during the same period, only varying from -5% to 1%. The offered capacity has been better adapted to the demand in 2016 than in 2015.

Sold capacity has then decreased in 2018, falling from 3,3M pap.km to 2,8M, but this has been anticipated as the offer was lower that year. The percentage of sold PaPs has kept increasing since 2015 and reached 50% in 2018 (48% in 2017).

Figure 69 – Sold and not requested PaPs (Pap.km)



Sources : EEIG Atlantic Corridor

When reviewing more closely the offered capacity of the Atlantic Corridor, it can be stated that the most of the capacity is reserved in Spain and in France in terms of Pap kilometres, as they are the "central" countries of the Corridor and offer full length paths on their territories. The PaPs offer on the Atlantic Corridor has been reduced in each of the four countries, as the path catalogue tends to adapt to the needs of the RU's and operator and therefore aims to be designed accordingly to the expected demand.

Table 73 – Offered Capacity (Pap.km)

Off Cap	IP	ADIF	SNCFR Réseau	DB Netz	Atlantic Corridor
2015	860 904	2 590 920	3 063 291	-	**6 515 115**
2016	672 125	2 599 543	2 892 827	-	**6 164 495**
2017	375 330	2 137 096	3 729 136	628 948	**6 870 510**
2018	387 358	2 187 942	2 309 443	598 754	**5 483 497**
CAGR 2015-18	**-23,4%**	**-5,5%**	**-9,0%**	**-**	**-5,6%**

Sources : EEIG Atlantic Corridor

Overall, the capacity sales have increased between 2015 and 2017 and then have decreased in 2018, with various trends among the four countries. As a result, the overall 2018 sold capacity as reached a level that is comparable to the year 2016 .

Table 74 – Sold Capacity (Pap.km)

Sold Cap	IP	ADIF	SNCFR Réseau	DB Netz	Atlantic Corridor
2015	-	246 054	1 519 036		**1 765 090**
2016	474 591	868 346	1 177 160		**2 520 097**
2017	201 307	404 567	2 616 325	72 315	**3 294 514**
2018	130 772	536 586	2 066 149	24 438	**2 757 945**

Sources : EEIG Atlantic Corridor

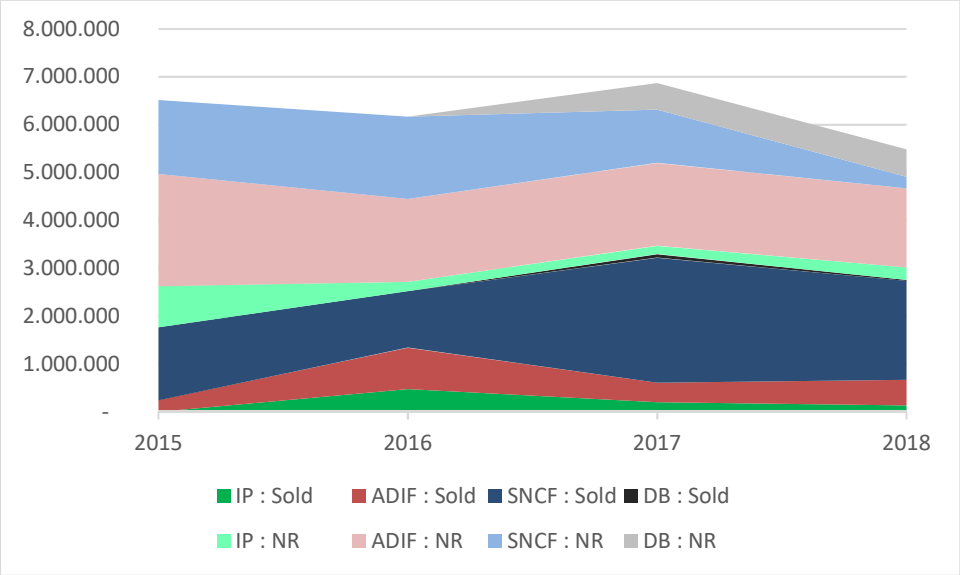
The sales rate of the Atlantic Corridor has kept growing since 2015 and reached the value of 50% in 2018. However, this rate has evolved very differently among the countries of the Corridor : quite steady in Spain, lowering in Portugal, but reaching a remarkable 89% in France (the situation in Germany is particular because of the decision of DB not to use the PaPs offered by the Corridor).

Table 75 – % Sold Capacity

% Sold Cap	IP	ADIF	SNCFR Réseau	DB Netz	Atlantic Corridor
2015	0%	9%	50%		**27%**
2016	71%	33%	41%		**41%**
2017	54%	19%	70%	11%	**48%**
2018	34%	25%	89%	4%	**50%**

Sources : EEIG Atlantic Corridor

Figure 70 – Sold and not requested PaPs (Pap.km) : detailed per IM



Sources : EEIG Atlantic Corridor

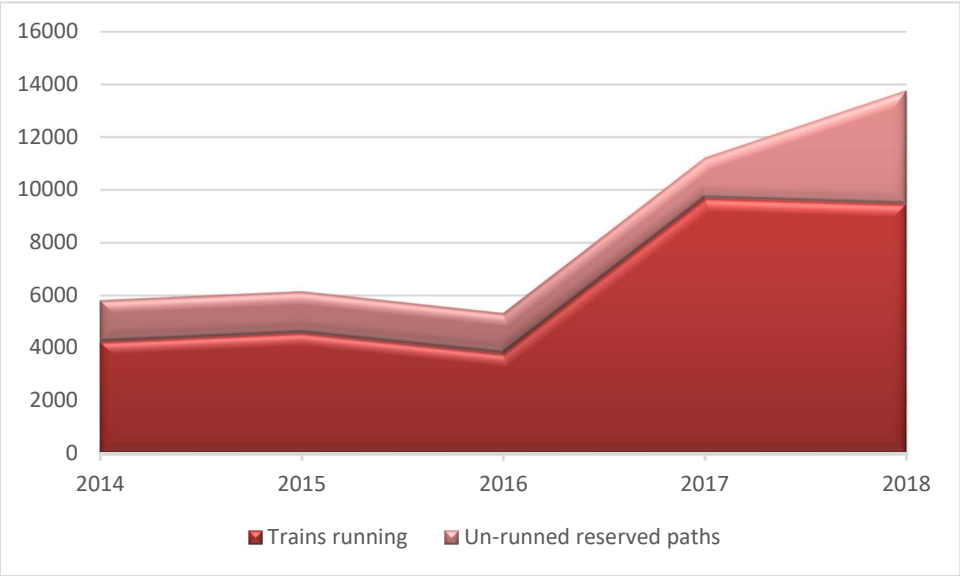
3.2 Rail path reserved and run

The following graph illustrates the number of reserved train paths on the Atlantic Corridor and the number of used train paths in the period of 2014 and 2018.

The most notable observation is the addition of the French/German border crossing in the calculation in 2017, which doubles the amount of paths and trains that are considered.

In 2018, the number of reservations increased again, but there has not been more trains actually using the Corridor PaPs this year.

Figure 71 – Used and unused reserved paths

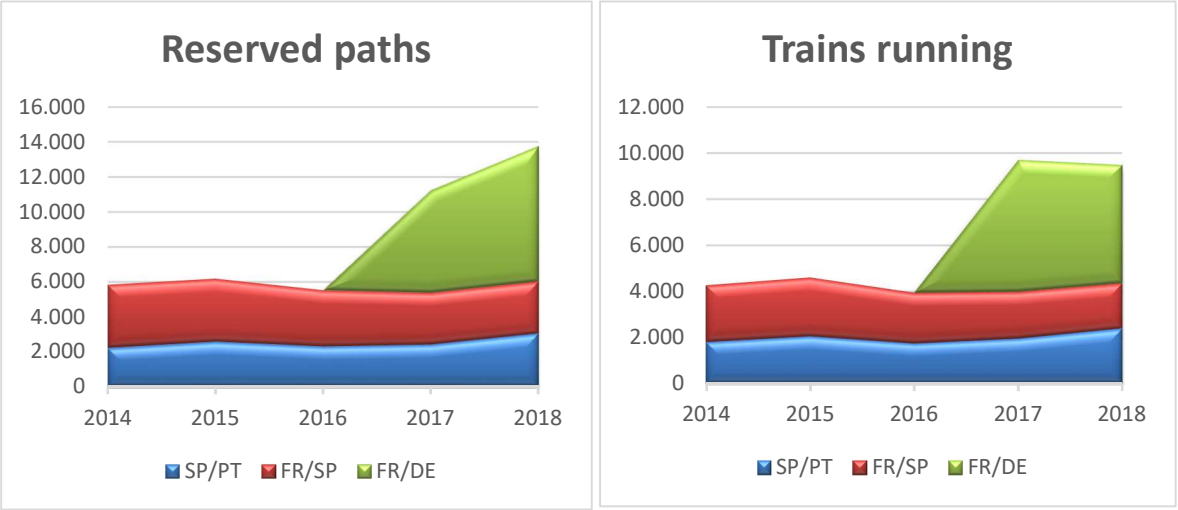


Sources : EEIG Atlantic Corridor

The following two figures illustrate the number of reserved train paths (at left) and the number of used train paths (at right) in detail by distinction per border: Spain/Portugal (SP), France/Spain (FR/SP), and France/Germany (FR/DE).

They show that the recent extension of the Corridor through Germany explains both the significant increase of the traffic volume and the difference between the last evolution of reserved PaPs and actually used PaPs : this is still a period of adaptation for the users crossing this new border, while reservations are made accordingly to the actual use on the southern borders of the Corridor (with a steady structural rate of unrunned paths).

Figure 72 – Used and unused reserved paths : detailed per border

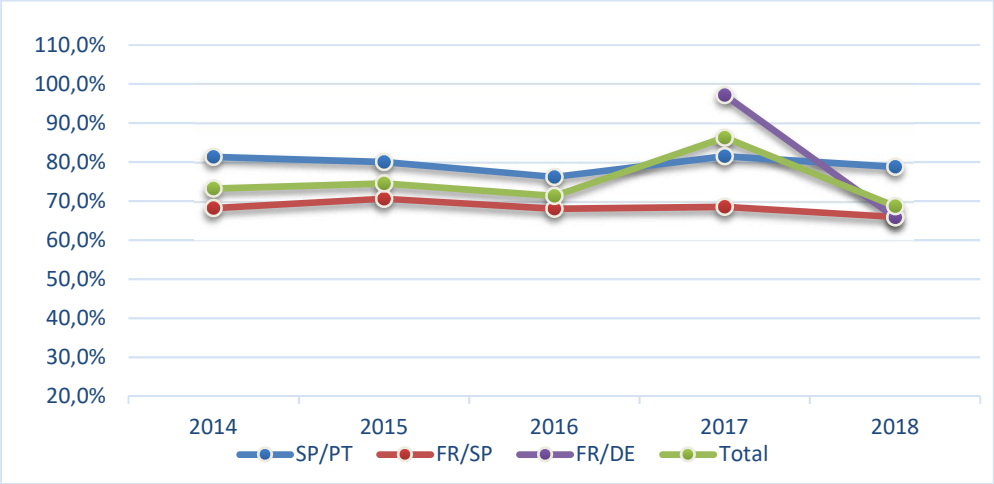


Sources : EEIG Atlantic Corridor

The figure below however reveals that the rate of use of reserved PaPs was in fact abnormally good (almost 100%) in 2017, with new customers reserving just the necessary and certain paths, that they were sure to use.

In 2018, more PaPs have been reserved crossing the French/German border, and the rate of use has been similar to what is observed all over the Atlantic Corridor.

Figure 73 – Evolution of used paths rate



Sources : EEIG Atlantic Corridor

3.3 Rail path quality

The path quality is expressed by the percentage of delayed international trains running in a distance higher than 500 km, considering the set of borders between each pair of Corridor countries.

The following table and graphic gather the data regarding trains running in the Corridor and delayed more than 30 minutes in the period 2014-2018. As Germany joined the Corridor in January 2016, the corresponding values and the totals are presented only this year on.

As shown by the following table and graphics:

- The total number of running and delayed trains is much higher at DE/FR border than in the other two;
- The percentage of delayed trains at SP/PT border remains higher than in the other two observed set of borders (SP/FR and FR/DE). In 2018 more than 50% of trains were late at this border, representing an inversion of the decreasing trend of last years
- The other two borders (DE/FR and FR/SP) show delay percentages of the same magnitude: ≈ 30%. The FR/SP border shows a slight increase trend;

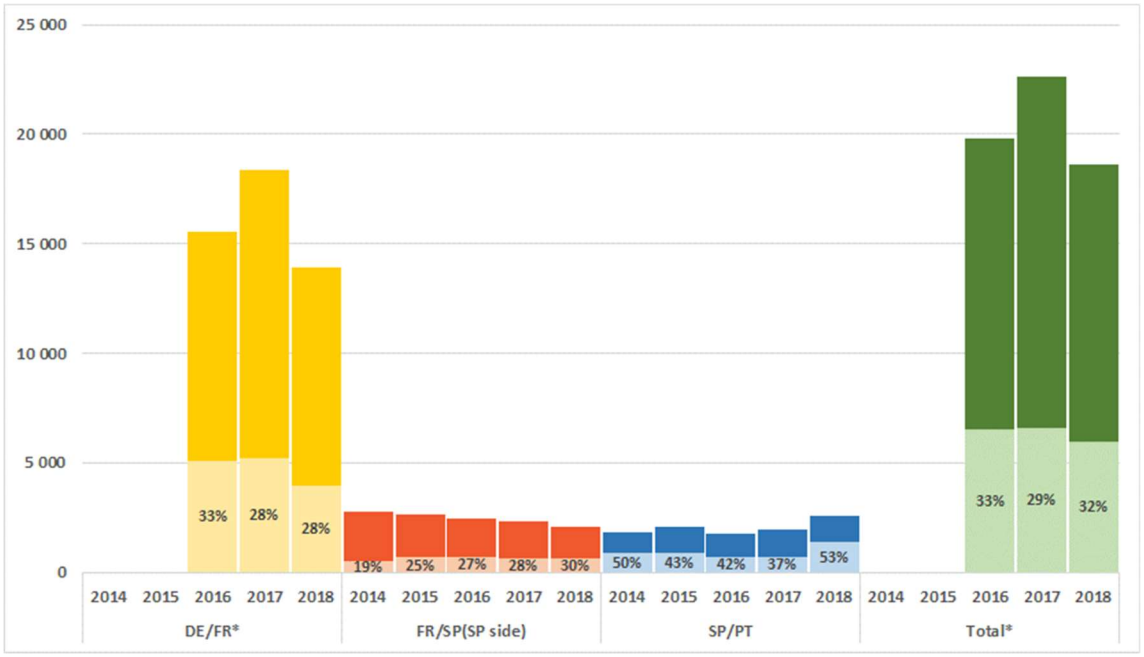
Table 76 – Key Performance Indicators for International Trains running in the Corridor in the period 2014-2017 – Rail path quality

Number of International trains (IT)[1]

		DE/FR *	FR/SP		SP/PT	Total [2]
			FR side	SP side		
2014	Trains running	-	2 163	2 745	1 795	4 540
	Trains delayed > 30mn		253	526	901	1 427
	% Delayed Trains > 30mn		11,7%	19,2%	50,2%	31,4%
2015	Trains running	-	2 401	2 669	2 050	4 719
	Trains delayed > 30mn		303	668	876	1 544
	% Delayed Trains > 30mn		12,6%	25,0%	42,7%	32,7%
2016	Trains running	15 567	2 179	2 472	1 740	19 779
	Trains delayed > 30mn	5 112	403	679	726	6 517
	% Delayed Trains > 30mn	32,8%	18,5%	27,5%	41,7%	32,9%
2017	Trains running	18 360	1 727	2 329	1 947	22 636
	Trains delayed > 30mn	5 200	298	658	725	6 583
	% Delayed Trains > 30mn	28,3%	17,3%	28,3%	37,2%	29,1%
2018	Trains running	13 905	1 526	2 101	2 605	18 611
	Trains delayed > 30mn	3 958	334	623	1 378	5 959
	% Delayed Trains > 30mn	28,5%	21,9%	29,7%	52,9%	32,0%

1 Distance > 500 km; 2 For Total was considered the SP side of FR/SP border traffic;
** Germany joined the EEIG Atlantic Corridor in January 2016: first available Corridor data from Germany refers to 2016.*
Source : EEIG Atlantic Corridor

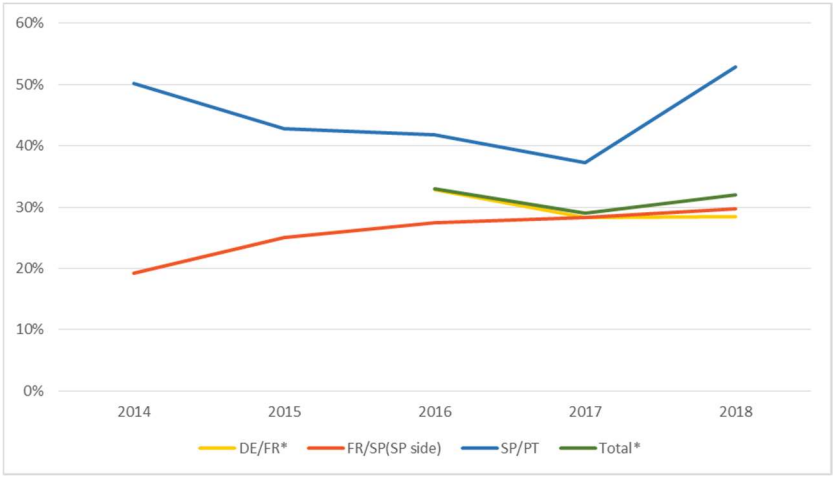
Figure 74 – Evolution of railway path quality in the Corridor 2014-2018 (number of trains)



** Germany joined the EEIG Atlantic Corridor in January 2016: first available Corridor data from Germany refers to 2016.*
Source : EEIG Atlantic Corridor

Between 2016 and 2018 the overall percentage of delayed trains was almost stable – around 30% -, practically encompassing with the DE/FR border trends. As mentioned above, the values of the SP/PT border are significantly higher than in the other borders.

Figure 75 – Rail path quality - Evolution (%) of delayed trains (> 30 mn) 2014-2018



** Germany joined the EEIG Atlantic Corridor in January 2016: first available Corridor data from Germany refers to 2016.*
Source : EEIG Atlantic Corridor

Rail path quality expressed in the number of International delayed more than 30 minutes has experienced different trends among the different set of borders. Over 30% (average) of the trains are delayed. In 2018 SP/PT border inverted the decreasing trend, while SP/FR maintains the slight increasing trend.

4. SYNTHESIS

4.1 Economic situation

The economic situation of the countries located along the Atlantic Corridor improved substantially both from 2017 to 2018 and over the previous years since about 2012/13. This holds for all major economic indicators: GDP (increased), unemployment rate (reduced), trade (increased) where in general both exports and imports of the countries increased slightly stronger than GDP. However, from 2017 to 2018 the GDP growth slowed down indicating the slowing economic progress observed even at the global level. Comparing countries over the longer period, the economic growth as a driver of freight transport is strongest in Germany, followed on average since about 2013 by Spain and Portugal, while France shows the least dynamic economic development. With some caution, this could be interpreted as the opportunity for stronger growth of long distance freight traffic between the Iberian Peninsula and Germany and vice versa. However, from 2017 to 2018 the ranking changed with Germany becoming the slowest growing country in that year.

4.2 Trade evolution

We have argued that the economic development suggests that freight demand within and between the countries is growing, at least in terms of value. However, this growth of traded value does not necessarily translate into a similar growth of volume, which depends on the value to volume ratio of the traded goods. Looking at Figure 18 and Figure 19 we can observe that in particular over the past four years the value per ton transported has been increased in all countries such that the volume growth must be slower than the value growth. In fact, German data suggests that traded volumes measured in ton are decreasing. This reflects the so-called good structure effect saying that the structure of produced and transported goods is changing such that the share of bulky goods is reducing and the share of high-value manufactured goods is increasing. Therefore the absolute value of transported goods and the value per ton are growing while the absolute volume is stagnating or even declining. For the future, we expect this trend to continue such that the railways must make an effort to offer attractive transport solutions for higher value goods[11].

4.3 Modal competition

Other developments look more appealing for the railway sector: the growth of employment leads to shortages in truck drivers. This can be observed in Germany, but expecting also a continued positive economic development in the next 1 to 3 years, other countries may follow. This leads to an increase of drivers wages (in practice, the growth is much stronger where trucking companies compete for drivers by offering the drivers of their competitors 10 to 20% salary increase if they would change jobs). This will provide for a better competitive position of rail in the next few years.

Also, within the next few years (as between 2020 and 2025), we expect the first autonomous trucks driving on the roads, mitigating such driver shortages and leading to substantial cost decreases of trucking. Here railways have two tasks: first to overcome the problem of labour shortages in their own business (e.g. there have been reported also shortages of drivers of locomotives), and second to improve the quality of their own offer by achieving issues like reliable rail transport with guaranteed arrival times, which of course is a matter of eliminating many small barriers to achieve that. Further it is required to offer the opportunity to track the location of transported goods i.e. the digitalisation of wagons is required in combination with information of customers on the position of their goods.

[11] For instance due to climate policy the use of coal in electricity generation and the use of fossil fuels in transport will further decline in the future, such that the transport demand generated by these goods and usually satisfied by rail or inland waterway will decline continuously.

An analysis of German sectoral trade statistics provides advice on which types of goods are transported between countries of the corridor and German Bundesländer at the other end of the corridor. The highest volumes are expected for road vehicles and parts of road vehicles as well as for chemicals. Further relevant sectors include metals and food. Stones and gravel as well as other goods are transported in larger quantities mainly towards France. Railways should make an effort in particular to attract automotive, chemicals, metals and food goods as these are transported at larger volumes along the corridor countries. Such an effort must address the specific needs of the goods types, let it be reliability for automotive demand, safety and bulk good needs for chemicals as well as cooling and short travel times for food.

4.4 Political orientations

The political agenda seems favourable for railways at the moment.

The German government has agreed on a strategic plan for rail freight transport in 2017 (Masterplan Schienengüterverkehr). This foresees amongst other measures a halving of track access charges for freight trains in Germany. The policy has been implemented at the beginning of 2019, and it is debated to further reduce the track access charge. Further policies fostering rail transport have been decided in Germany as part of the climate policy programme. The programme now ensures the implementation of 740m track sidings, of further electrification of freight rail tracks as well as that the infrastructure finding for track maintenance and renewal is increased to 86 bn Euro over the next 10 years. Further the cooperation between German and French transport ministries has been intensified.

In France, the Macron government has also initiated a number of reforms addressing the railways, which are expected to improve the competitive position of railways as they will reduce cost and attract further actors (due to liberalisation) that could enhance the variety of offers.

Between Spain and Portugal, a bilateral working group has been established in 2017 between the Ministries of Transport (and Infrastructures) improving the cooperation between the countries. This should lead to a better coordinated planning of railway infrastructure as well as of cross-border operations on the rail network.

It seems also possible that the Atlantic core network corridor (CNC) is extended, which would enable to co-fund further projects also linked to the RFC such that the catchment area of the RFC is increased e.g. in the case of additions of further French ports to the CNC.

At the EC level major legislation relevant for the operation of RFCs is under evaluation and will be revised over the next 2-3 years by the new European Commission. This includes the TEN-T guidelines and the RFC directive. The railway sector is well advised to support this process and to contribute with helpful proposals that mitigate bottlenecks, overcome barriers in the operations of long distance rail and makes the whole sector more competitive versus the road sector. Road transport is the challenge, not the other railway or terminal operators!

4.5 Conclusion

For the next 2 to 4 years, we expect a brighter future for rail freight transport along the Atlantic Rail Freight Corridor. We ground this on the overall economic development as well as on improvements for the rail sector (e.g. cost reductions in Germany, bilateral agreements on operations at French-German border crossing, etc.). However, known risks for this positive development are the high number of construction works on the RFC: in particular in France, but also in Germany, where the rail infrastructure investments are scaled-up to remediate the backlog of neglected maintenance works of the past years.

For the longer term the technical development of road freight transport is challenging the long distance rail sector e.g. by platooning trucks, electrified catenary trucks. The railway sector must make

their homework to improve their IT systems (e.g. harmonized ERTMS), their operations (e.g. border crossing not being an obstacle and a risk for reliable transport anymore) and their co-operations (to coordinate their efforts to improve the competitive position of the **whole** sector **against road** transport) to continue moving on the demand growth path along the RFCs.