CIMALSA
Centres logístics de Catalunya

Generalitat de Catalunya
Departament de Territori i Sostenibilitat

The Logistics Observatory

Indicators of competitiveness for the Catalan Logistics system (12th edition)

\+ Advanced data for 2017

July 2017

Institut Cerdà

Index

Introduction

The Logistics Observatory is:

- A tool for the **continuous evaluation of the needs of the sectors of the economy in relation to the infrastructure systems and logistics services.**
- **A meeting point for the companies and key agents** that enables the needs of the business sectors of the economy to be integrated with planning and management of infrastructures and services.

The objectives of the Indicators of Competitiveness of the logistics system

- To create a **reference framework that remains stable over the time**, based on real parameters and objective observation.
- **To monitor the most relevant data** of the logistics system and **analyse their evolution** by contrasting the information with experts of each specific area.
- To become a **tool able to provide information for the planning and management of the logistics system.**

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Introduction

DOCUMENT STRUCTURE

The work is divided in **two main parts:**

- Document body : 45 indicators
- Statistical annex: 77 complementary statistical data

The document is organised in the following sections**:**

1.- Socioeconomic context

2.- Infrastructure supply

3.- Supply and demand

4.- Logistics real estate market

5.- Efficiency

6.- Urban logistics

7.- Summary table of indicators

Introduction

INFORMATION SEARCHING PROCESS:

More than 30 sources of information used

- **Orientated for the socioeconomic context analysis** (Institut d'Estadística de Catalunya, Instituto nacional de Estadística, Eurostat,...).
- To obtain **sectorial specific data** (Encuesta permanente del transporte de mercancías por carretera (Ministerio de Fomento), data base about the goods transport in Catalonia (Renfe, FGC), statistical reports form the Ports, statistical data provided by Aena, Census data form the sectorial magazines and logistics platforms (Alimarket).
- **Contrasting the primary results with experts from the various specialized areas within the sector.**

PUBLIC SECTOR

PRIVATE SECTOR

Introduction: OBSERVATORY NEWS FOR THE 2017 EDITION

- ✓ **Ajuntament de Barcelona** incorporation as a source of capillary logistics data
- ✓ Inclusion of a sectorial tendency survey.
- ✓ Going forward in the **study, evaluation and definition** of new indicators, reorienting the necessary ones in order to offer a **global vision of the Catalan logistics system.**

NEW LINES OF STUDY

- **Freight volume moved by short sea shipping (SSS)**
- **Number of e-commerce operations in Catalunya**
- **Number of journeys of freight vehicles in relation with private journeys in the city of Barcelona**
- **Introduction of marine LNG**
- **Supply points of NGV, LPG and electric for automotive**
- **Registration evolution depending on fuel and maximum load**

- ✓ + Disaggregated data by **province**
- ✓ + Advanced data for **2017**.

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Socioeconomic context

- Regarding the scope of the logistics sector definition and according to the activity codes CCAE-2009, **are distinguished for the first time in this edition three scenarios** in order to verify the weight of the logistics activities in the Catalan economy: **Basic scenario** (including freight, warehousing and other activities related to transport and post), **Medium scenario** (including the previous scenario and the wholesale trade) and **Extensive scenario** (also including retail trade) **with a weight of 3,7%, 9,6% and 13,3%** respectively registered for 2014.

- In 2016 **a decrease in the number of unemployed in the logistics sector of a 14% about 2015 was registered**, foreseeing a consequent reactivation in the importance of the sector for the Catalan economy.

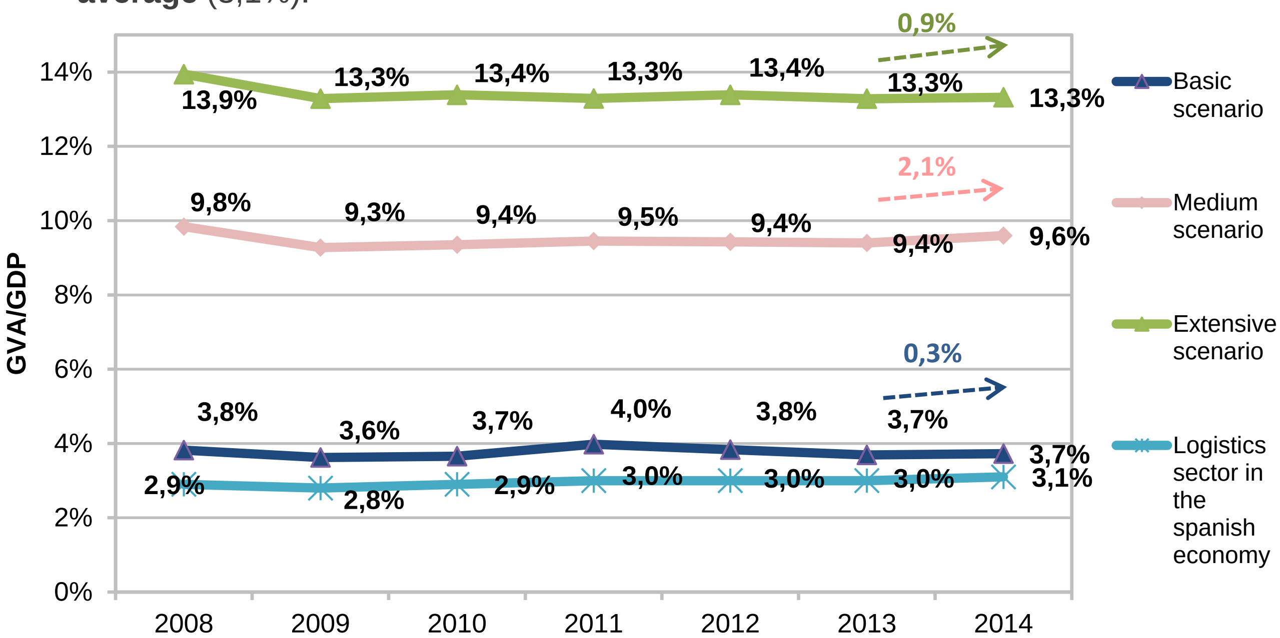
- **The total number of affiliates in an autonomous regime assumed in 2016 a percentage of a 26%** over the total affiliates number which meant 4 points below the percentage of autonomous in all sectors in Catalonia.

- **The Catalan trade balance** in the last biennium (2015-2016) tends to increase its difference between the economic value of the exportations and importations, being **negative in 2016** (-12.814 millions of euros).

- **On 2016 the GDP value in constant prices is reactivated as well as the total volume of freights,** increasing in a **3,1%** and a **4,8%** respectively about 2013.

Economic weight of the logistics sector in the Catalan economy

- The **economic weight** of the Catalan logistic sector is located between the **3,7% - 13,3%** according to the studied scenario in 2014.
- **A slightly increasing tendency** has been registered for the three scenarios regarding 2013.
- The weight of the Catalan logistics sector (3,7%) regarding the Catalan economy is **half point above the state average** (3,1%).



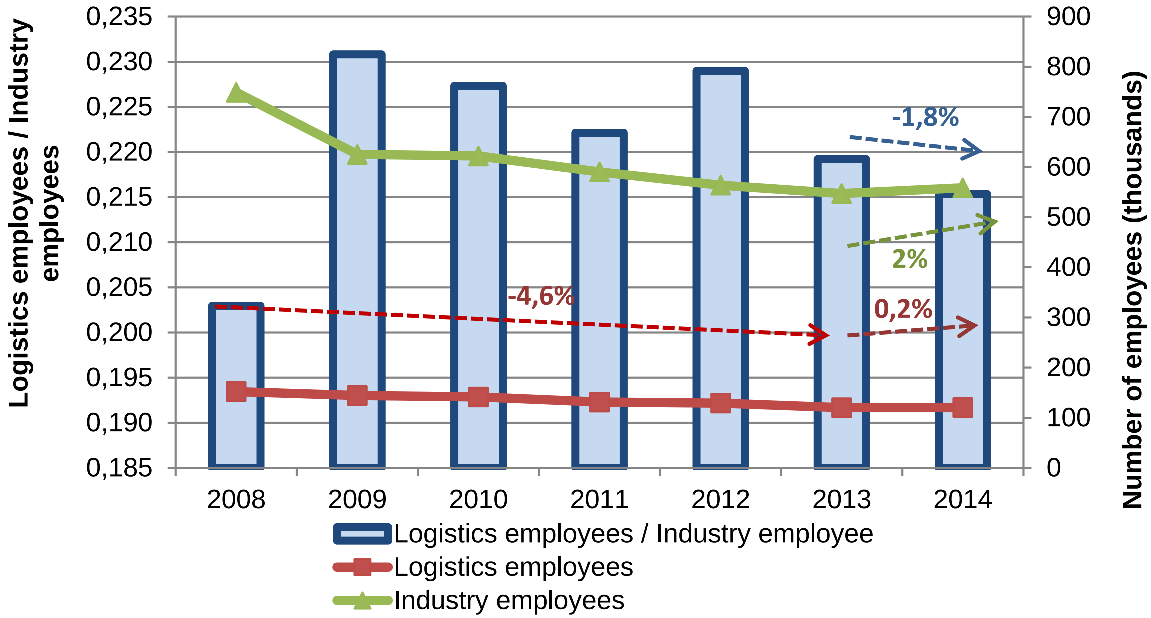
Source: Elaborated from data of Idescat and Ministerio de Fomento

Contribution of the logistics activities in the Catalan economy (2013)	
GVA logistics activities	4,8%
Intermediate consumption	7,8%
Total	12,6%

Source: PIMEC Logística (2017): *Report contribution of logistics in the economy*

Employment generation of the logistic sector

- The **ratio** between the **employees in the logistics sector** and the ones in the **industrial sector** oscillates during the period 2008-2014, with a **global growth of a 1%**, **despite the recession** of a **-1,8%** between **2013 and 2014.**



Source: Elaborated from data of Idescat

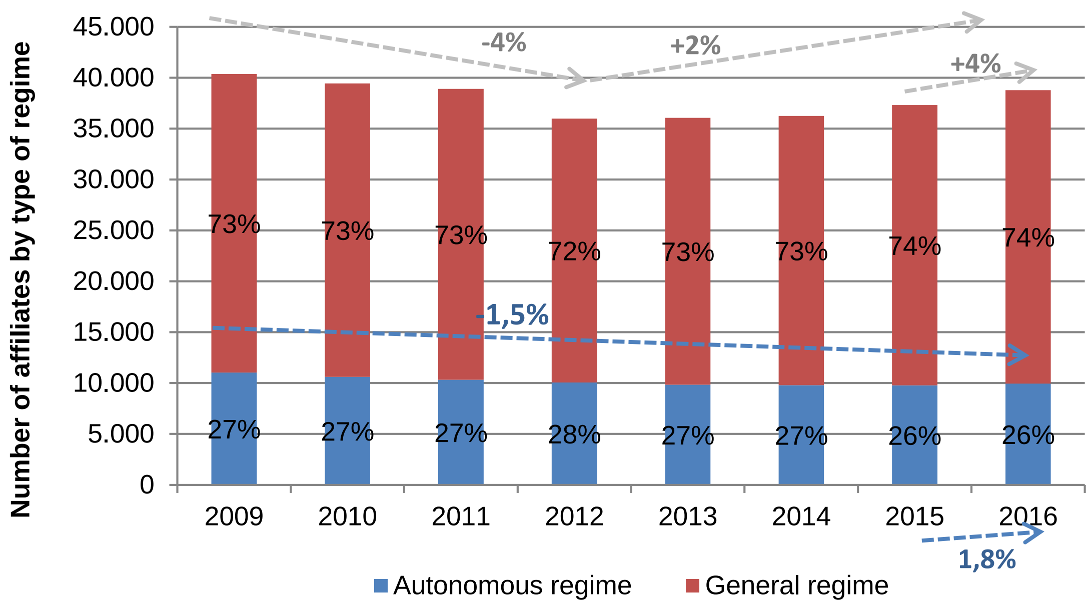
Data of unemployed in the transport and storage sector	
2016	13.765
2015	16.010
2014	19.135
2013	21.366
2012	20.435
2011	18.113
2010	18.183

-3,2%

-14%

Labour Market: Weight of the autonomous employees (transport and storage)

- **The affiliated amount of employees in an autonomous regime represents the 26% (2016) of the total number of affiliates.**
- **The autonomous share in the transport and storage sector is bellow the average represented** by all the activities sector (21,7%).

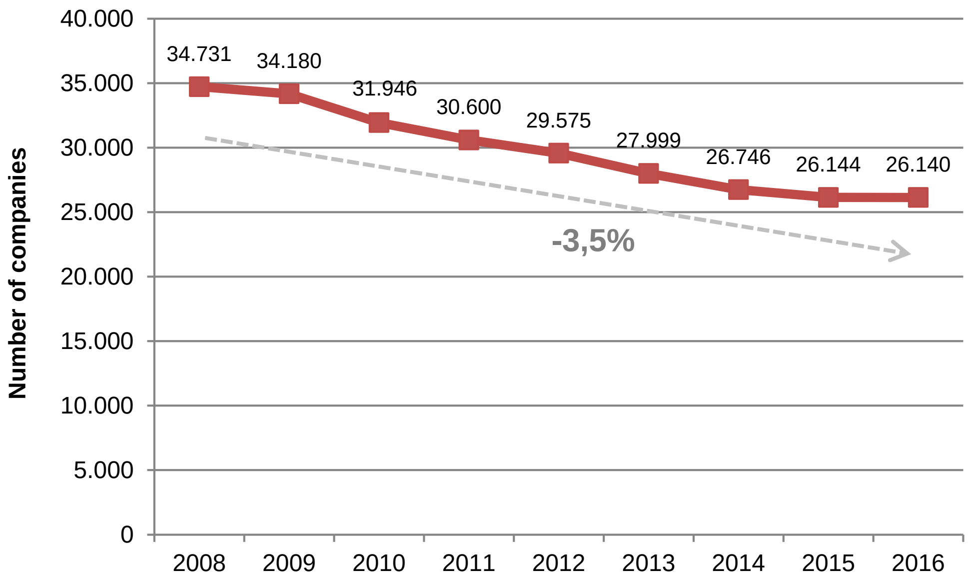


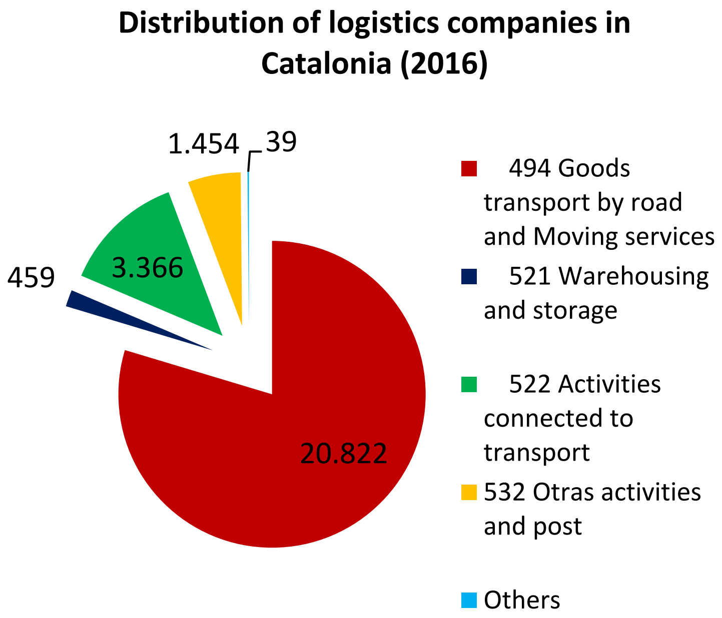
% autonomous in all sectors	
2016	**21,7%**
2015	**22,4%**
2014	**22,8%**

Source: Elaborated from data of Ministerio de Empleo and Seguridad Social (2017)

Evolution of the number of active logistic companies

- **A decline of a 3,5%** is observed in the number of logistics active companies in the period **2008-2016.**
- A total of **26.140 logistics active companies** in Catalonia (2016), highlighting the group **Goods transport and moving services** (**79,7%** about the total Catalan logistics active companies).

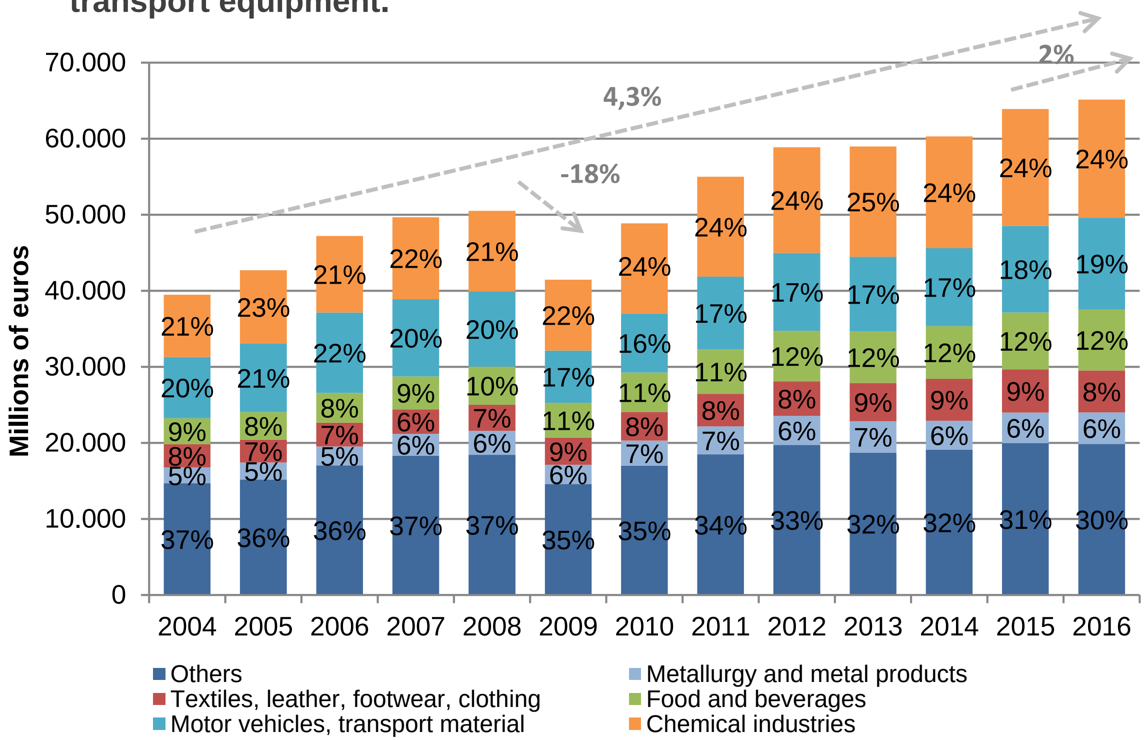




Source: Elaborated from data of INE

Economic value of the exportations

- **Increasing tendency** on the economic value of the Catalan exportations which started in 2004 and has an accumulative positive variation of a **4,3%** in spite of the **drop** between **2008-2009** (**-18%**).
- **By sectors**, highlights the category corresponding to **chemical industry as well as motor vehicles and transport equipment.**



Source: Elaborated from data of Idescat

Δ 2015-2016	
Chemical industries	1,2%
Motor vehicles, transport material	6%
Food and beverages	7,4%
Textiles, leather, footwear, clothing	-3,2%
Metallurgy and metal products	3,3%
Others (*)	-0,6%

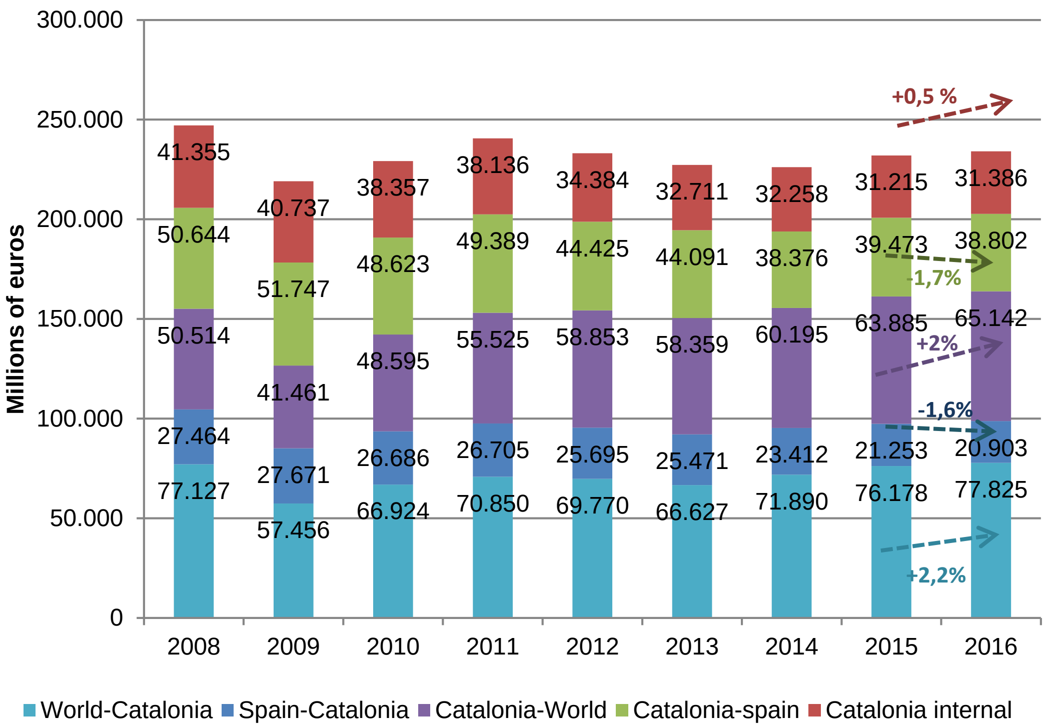
Advanced data for 2017

Total amount of the exportations in Catalonia in March of 2017: **6.665,5 M€.**

Total in Spain in March of 2017: **26.225,8 M€**

Economic value of the exchanges with the State

- In the period 2008-2015 the **Catalan exportations** to the **rest of the world** have increase about a 3,2%, reaching a share of a **48%** regarding the economic value of the effective production.



Source: Elaborated from data of CEPREDE

Economic value of the effective production (58%)		
Typology	**2016**	**Δ2008-16**
Internal	23%	-2,8%
Catalonia-Spain	29%	-2,6%
Catalonia-World	48%	+3,9%

Economic value of the importations (42%)		
Tipologia	**2016**	**Δ2008-16**
Spain-Catalonia	21%	-2,7%
World-Catalonia	79%	0,8%

Advanced data for 2017-T1 regarding 2016-T1

Internal Cat: +8%

Export/Import Cat-Spain: +4%/+5%

Export/Import Cat-World: +14%/+14%

Socioeconomic context: Statistical annex

I. SOCIOECONOMIC CONTEXT

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- I.2. – Evolution of the Catalan GDP in current prices by sectors (2010 basis)
- I.3. – Evolution of the Catalan GDP in fixed prices (2000 basis)
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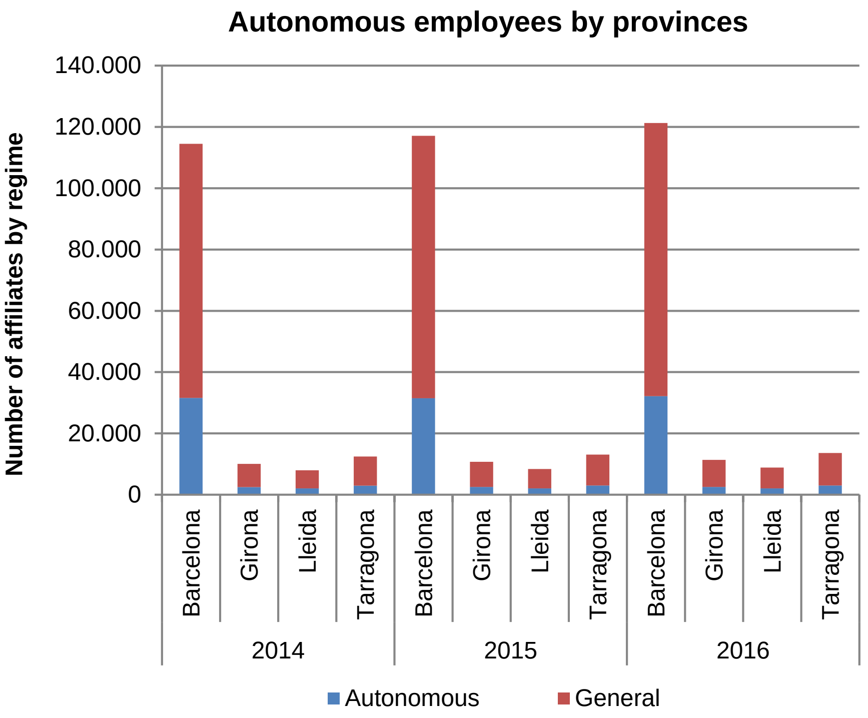

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Infrastructure supply

- **Catalonia is still the most meshed territory in terms of road and rail infrastructure.** In terms of road infrastructure supply of 4 or more lanes presented a ratio of **48,5 km of road network per thousand square kilometre in 2015.** For its part, the provision of the Catalan rail infrastructure per area unit was **54,5 km/thousand-km^2.** By contrast, in relation to the population, Spain leads the ranking of rail and road infrastructure provision per million inhabitants.

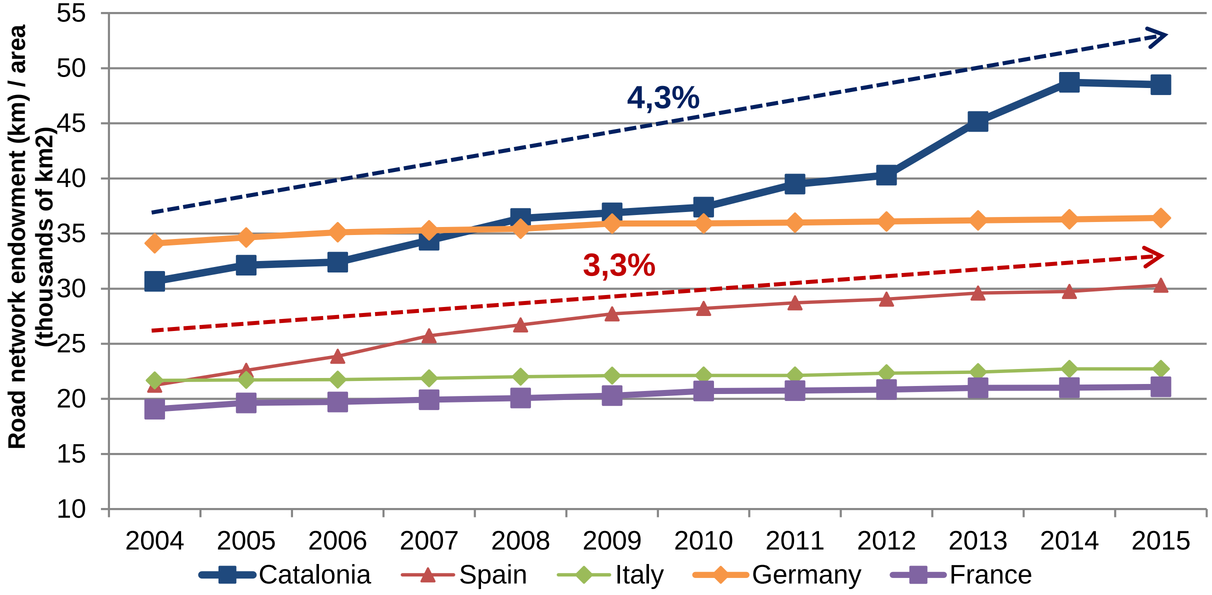
- Throughout the series of study it is found the fact that the **proportion of toll roads in the high capacity road network has decreased,** from representing a 60% in 2000 into representing a **38% in 2015**. The total amount of expressways and toll-free highways have grown.

- **The amount of traffic accidents involving heavy vehicles in the Catalan roads accumulates an annual reduction of 1,3% in the period 2008-2015.**

- In 2016, regarding maritime infrastructure transport, **the road modus remained as the principal access modus in the Port of Barcelona, with a share of 86%.** Whereas **the pipeline transport continuous as the majority in the Port of Tarragona, with a share of the 69%.** In the last year (2016) the rail access share in the Barcelona-Harbour has increased, in an amount close to a 10% about 2015.

Road infrastructure provision

- Catalonia presents a negative development about 2015 of a -0,4%, a small decline which doesn't affects significantly its leadership in terms of road infrastructure provision (4 or more lanes) in relation to its total area.
- Its **evolution** throughout the series of study (2004-2015) is **crescent**, with a clear **Catalan dominance** growth in regard to the state growth specially from 2014. The **annual growths** are about the **4,3%** and the 3,3**%** respectively.
- **Spain** leads the ratio of road infrastructure endowment per million of inhabitants (**328,2 km/million-inhabitant**).

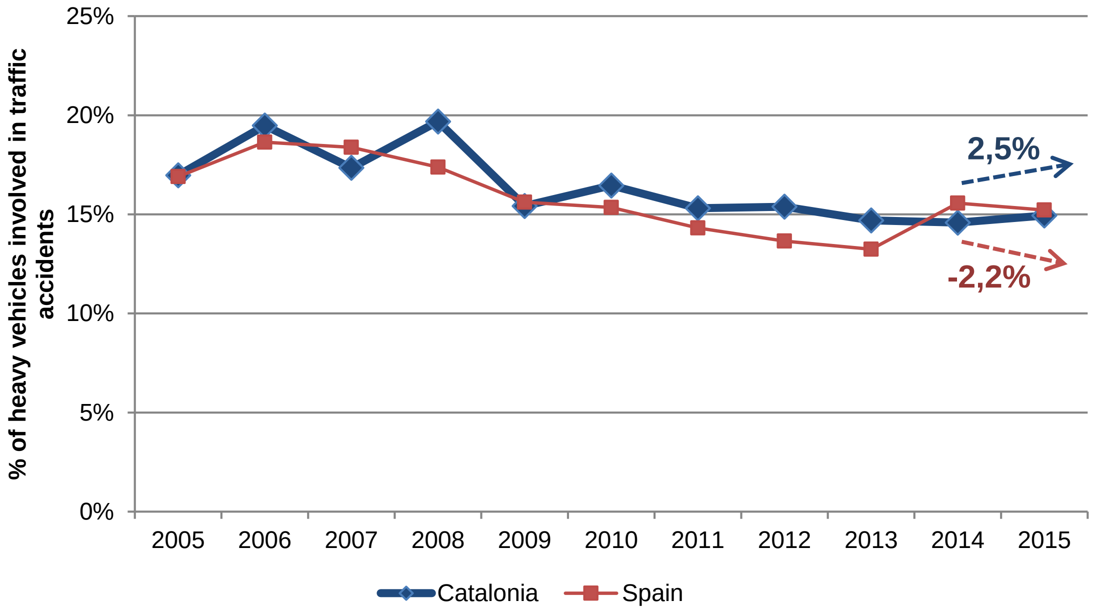


Km/population	2015
Catalonia	207,3
Spain	328,2
Germany	158,1

Source: Elaborated from data of Idescat, INE and Stadistisches Bundesamt (Germany)

Evolution of the traffic accidents rate involving heavy vehicles

- The weight of the involvement of freight vehicles in traffic accidents **in Catalonia has increased** in the biennium 2014-2015 (2,5**%**), keeping its value around the 15%. **In Spain** the tendency has been the opposite, with a **decline of a -2,2%.**
- In both cases it is found a **downward tendency throughout the study series (2005-2015).**

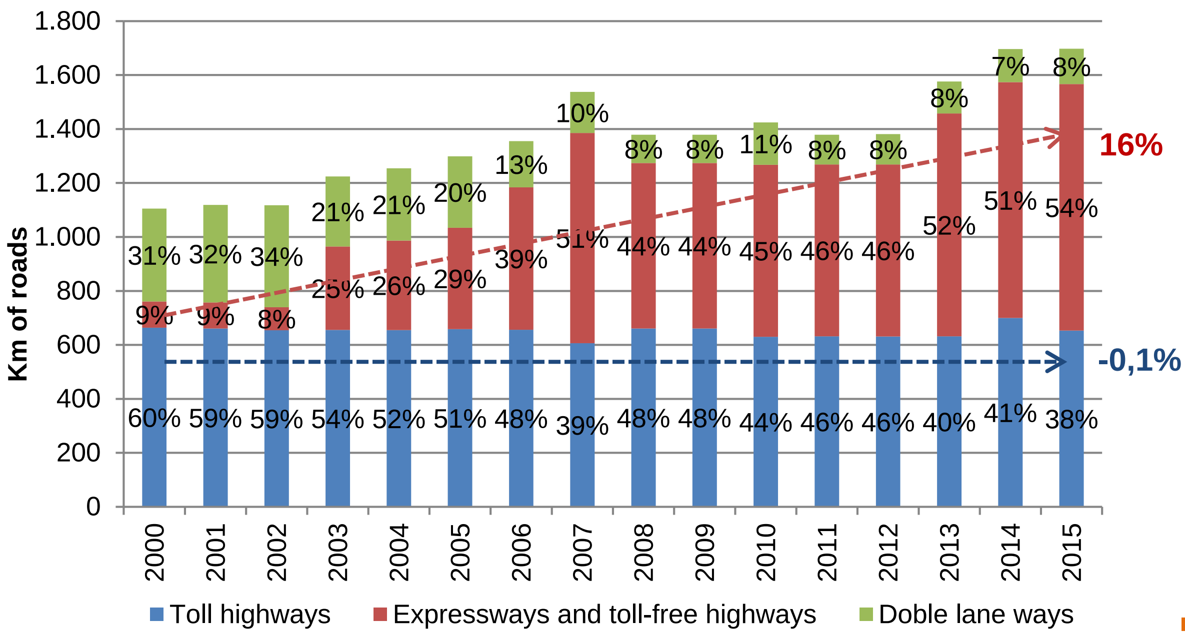


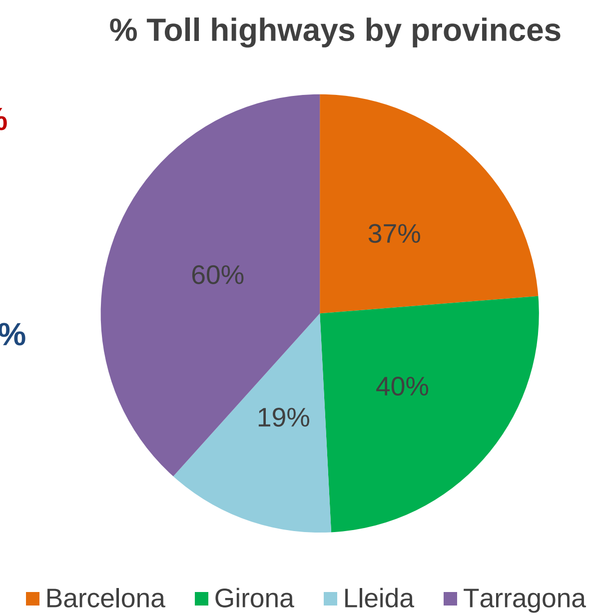
Source: Elaborated from data of DGT and Generalitat de Catalunya

		2015	Δ 14-15
Traffic accidents with victims	Catalonia	25.286	6,1%
	Spain	97.756	6,8%
Total freight vehicles involved	Catalonia	3.778	8,7%
	Spain	14.879	4,4%

Proportion of toll roads in the high capacity road network

- Clear **dominance of the toll highways in Catalonia** until 2005. However, between 2003-2015 an increase regarding the number of **expressways and toll-free highways** begun. Their **annual growth between 2000 and 2015 was 16%,** while for toll highways was -0,1%.
- **Tarragona** stands out as the province with the highest percentage of toll roads amount.

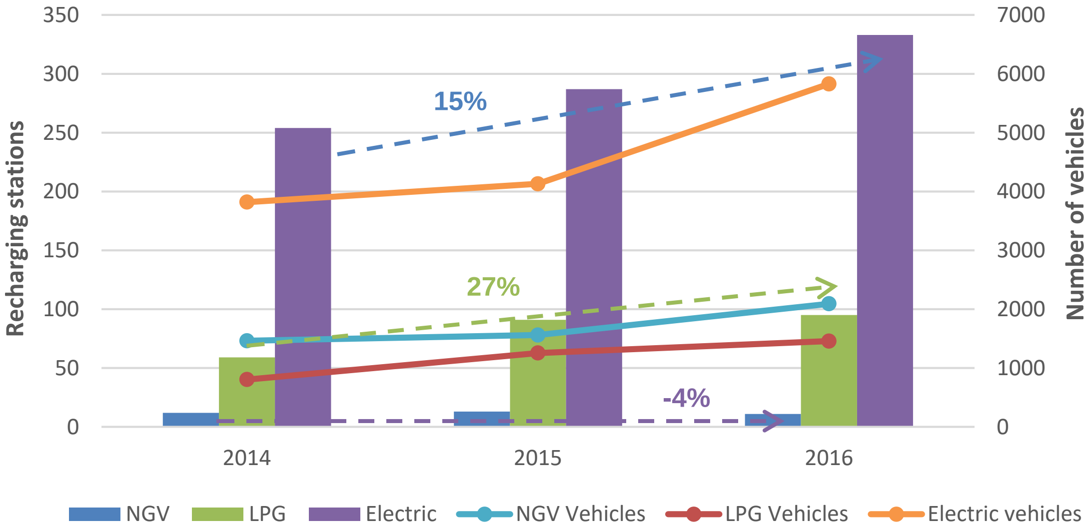




Source: Elaborated from data of Idescat and Ministerio de Fomento

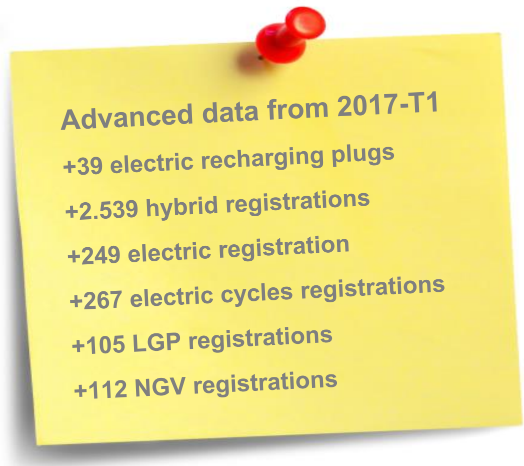
New Supply points of NGV, LPG and electric for automotive

- **Electric stations**: Year-on-year growth of 15%.
- **LPG stations:** Significant growth of 27% since 2014.
- **Mixt station (CNG-LNG):** Light decline (-4%) from 2014 to 2016.



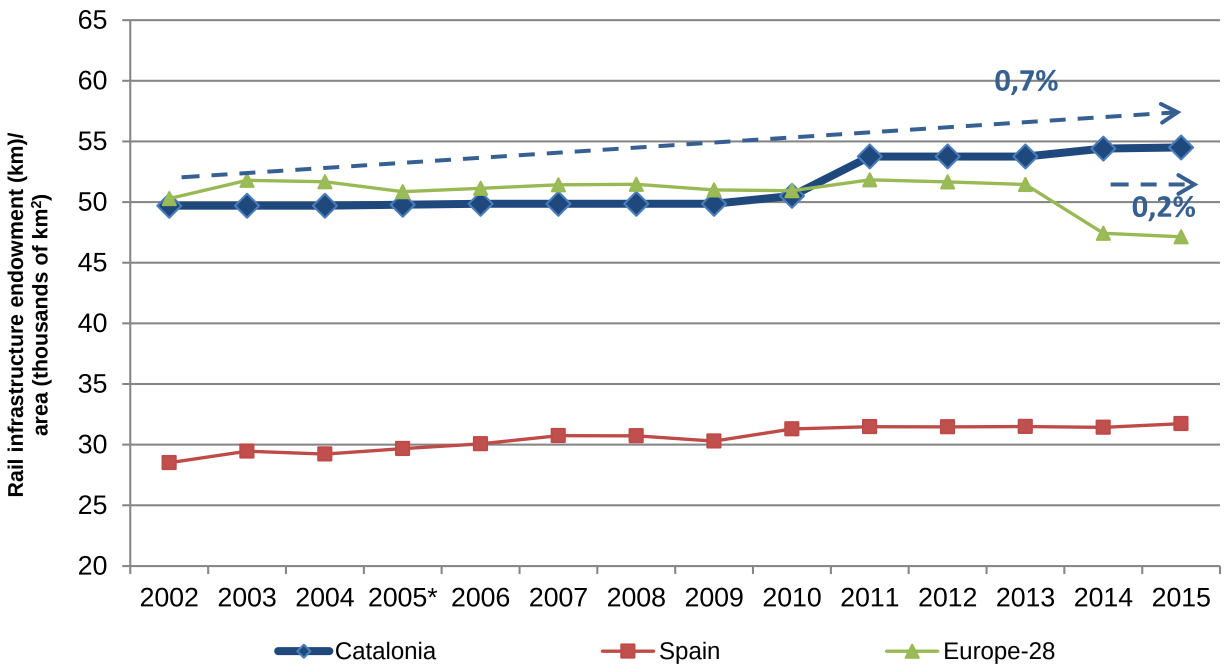
Source: Elaborated from data of GASNAM and ICAEN

Park of alternative fuel vehicles		
Tipology	2016	Δ 14-16
Electric	5.828	53%
LPG	1.458	81%
NGV	2.093	43%



Rail infrastructure endowment

- Catalonia and Spain present an annual growth (2002-2015) of 0,7% and 0,8%, being the **endowment in km/km²** in 2015 for **Catalonia 54,4** and 31,7 for Spain.
- The **Catalan rail infrastructure density** is located **near the European ratios of 47,1 km/km².**

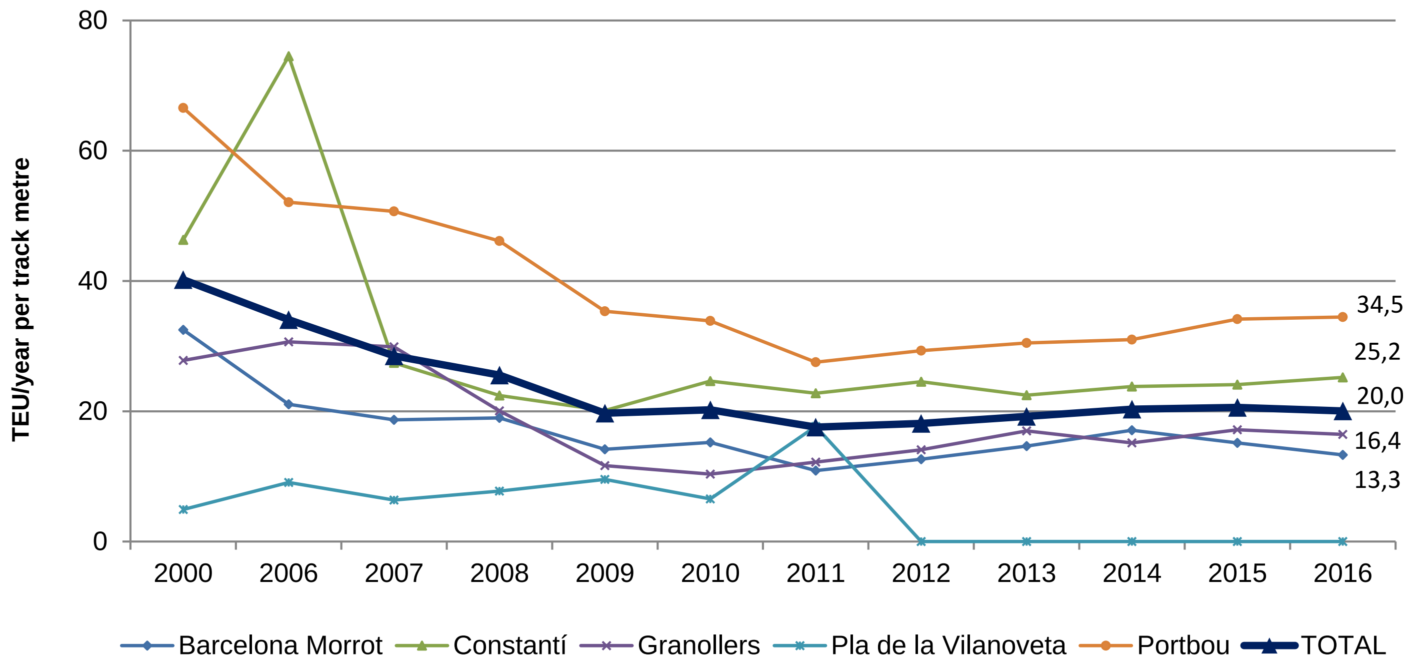


Km/population [km/million]	2015
Catalonia	232,9
Spain	343,6
Germany	401,3

Source: Elaborated from data of Idescat, INE and Eurostat

Performance in the intermodal terminals

- **The performance in the intermodal terminals has increased its value about 2015, reaching the amount of 20 moved TEUs/year** per lineal metre of track during the exercise in 2016 (-2,7% about 2015). However, the quantity is still far from the European average, close to 50 TEUs/year.

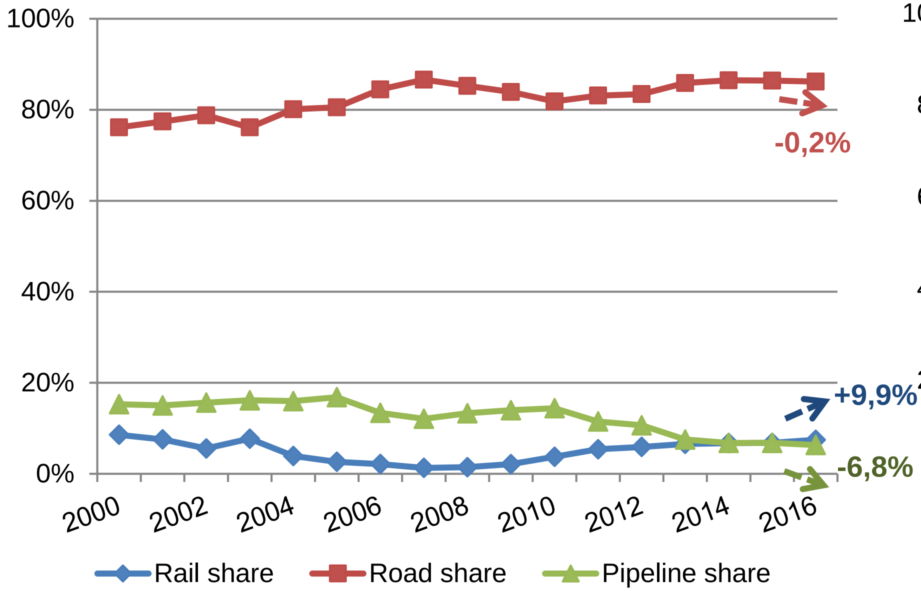


Source: Elaborated from data of Renfe

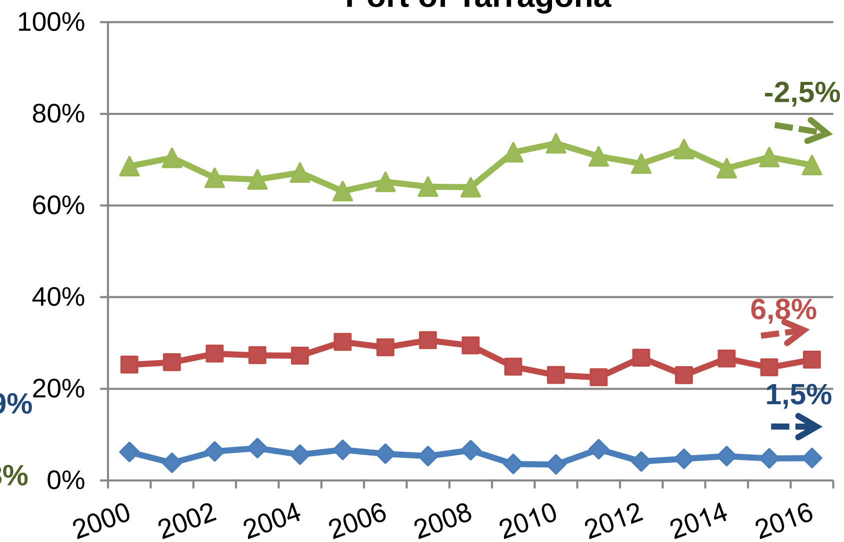
Modal access and exit share in the Catalan harbours

- The **distribution** of modal shares **remains stable** throughout the series.
- **Port of Barcelona:** Dominance of the **road transport (86%).** Growth of the rail share in a percentage of 9,8% (2015-2016), becoming the second mode ahead the pipeline share (-6,8%).
- **Port of Tarragona**: Dominance of the **pipeline transport (69%).** Growth in the rail share (+1,5%) and in the road share (+6,8%).

Port of Barcelona



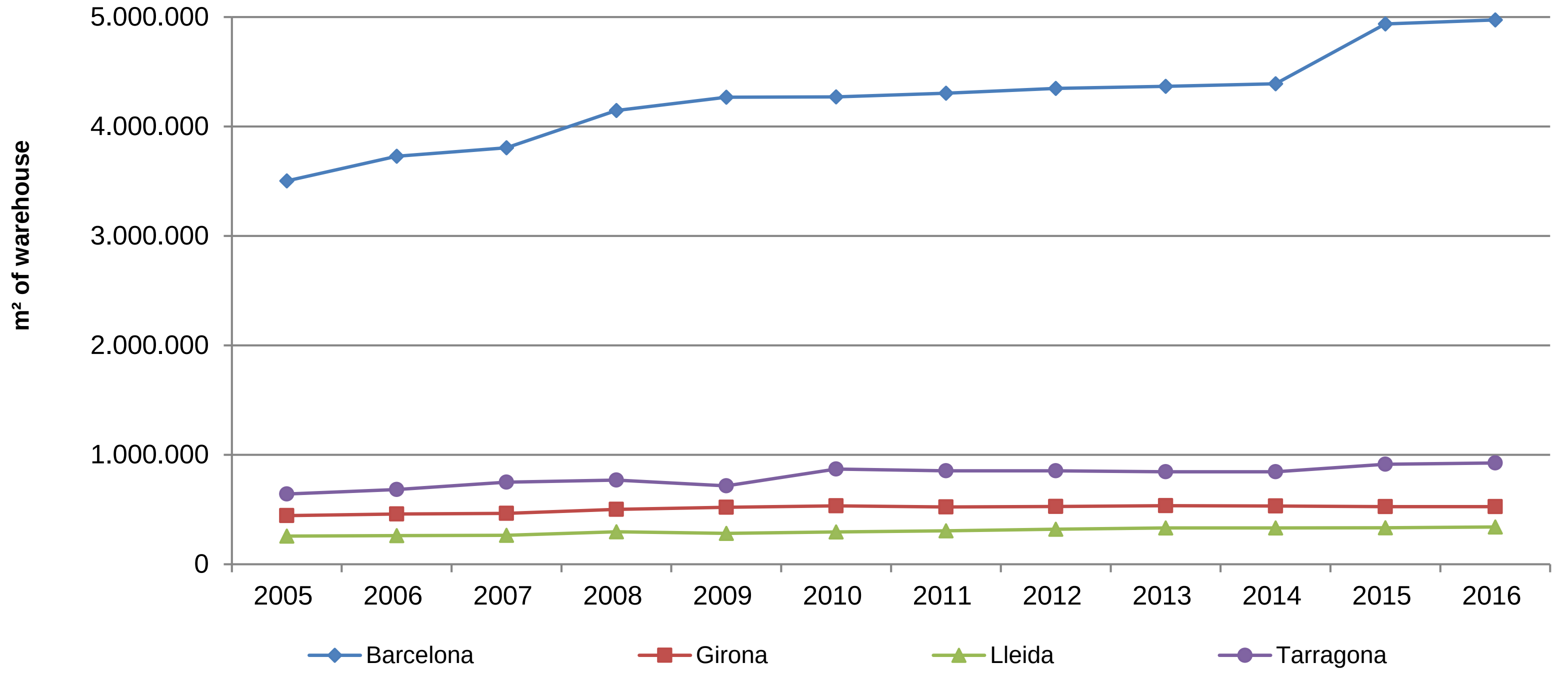
Port of Tarragona



Source: Elaborated from data obtained from intern mails with Autoritats Portuàries of Barcelona and Tarragona

Usable area of warehouse by provinces

- **Barcelona** leaders the m² of available area for logistics warehouse, whereas **Lleida keeps the last position in the provincial ranking.**
- All provinces maintain constant the available area for logistics warehouse regard last year, with small growths between 0 and 1,9%.



Source: Elaborated from data of Alimarket

Infrastructure Supply: Statistical annex

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- **II.2. – Map of the logistics platforms**
- **II.3 – Surface area for storage in Spain**
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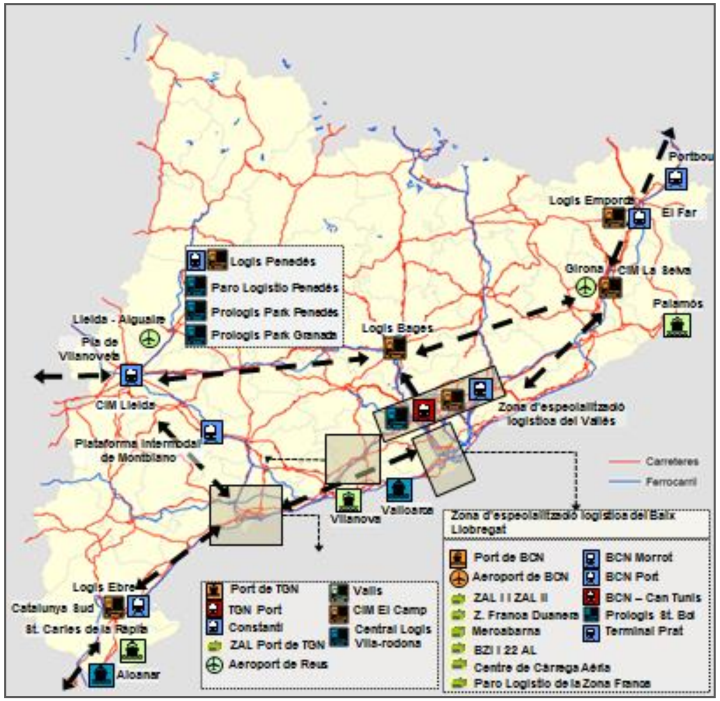
- **II.5. – Road infrastructure endowment in Catalonia by provinces**
- **II.6.- Proportion of toll roads in the high capacity road network in Catalonia by province**



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Supply and Demand

- **During 2016 the total freight volume managed by the Catalan logistics system reached the amount of 367,5 millions of tons, consolidating its recovering trend started in 2014.** Specifically, the European transport was the one who took a higher profit of it, with a total increase of a 2,5% between 2015 and 2016. According to type of modes, road transport remained as the controlling one in Catalonia, by assuming a share of a 76% of the total.

- **Although diesel is the most consumed fuel by automotive vehicles in Catalonia followed by gasoline (79 and 16% respectively), a reduction is confirmed in both consumption through the studied series (2007-2016) in favour of alternative fuels. PLG consumption increases a percentage around 16% in the last biennium.**

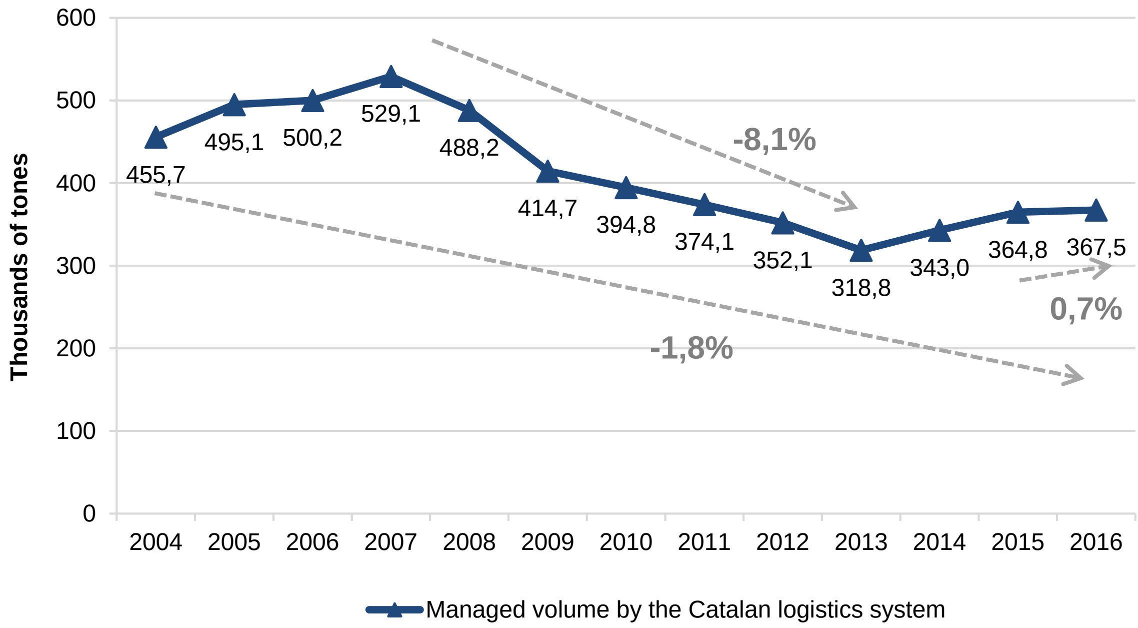
- As a novelty of this year's edition**, information is collected on hybrid vehicles,** complementing the information of those propelled by LPG, CNG, LNG and electricity.

- **The Ro-Ro traffic had a decline of a 5% regarding the transported tones.** It has reached a total volume of 10,2 millions of tons in 2016.

- **The Catalan airport system during 2016 recorded an increase in the managed volume in terms of transported tones of a 13% about 2015.**

Managed volume by the Catalan logistics system

- **Starting from 2013 the declining tendency which started in 2007 (-8,1%) was broken,** regarding the volumes of managed tons by the Catalan logistics sector. **The managed volume in 2016 increases about 2015 in a percentage of a 0,7%.**

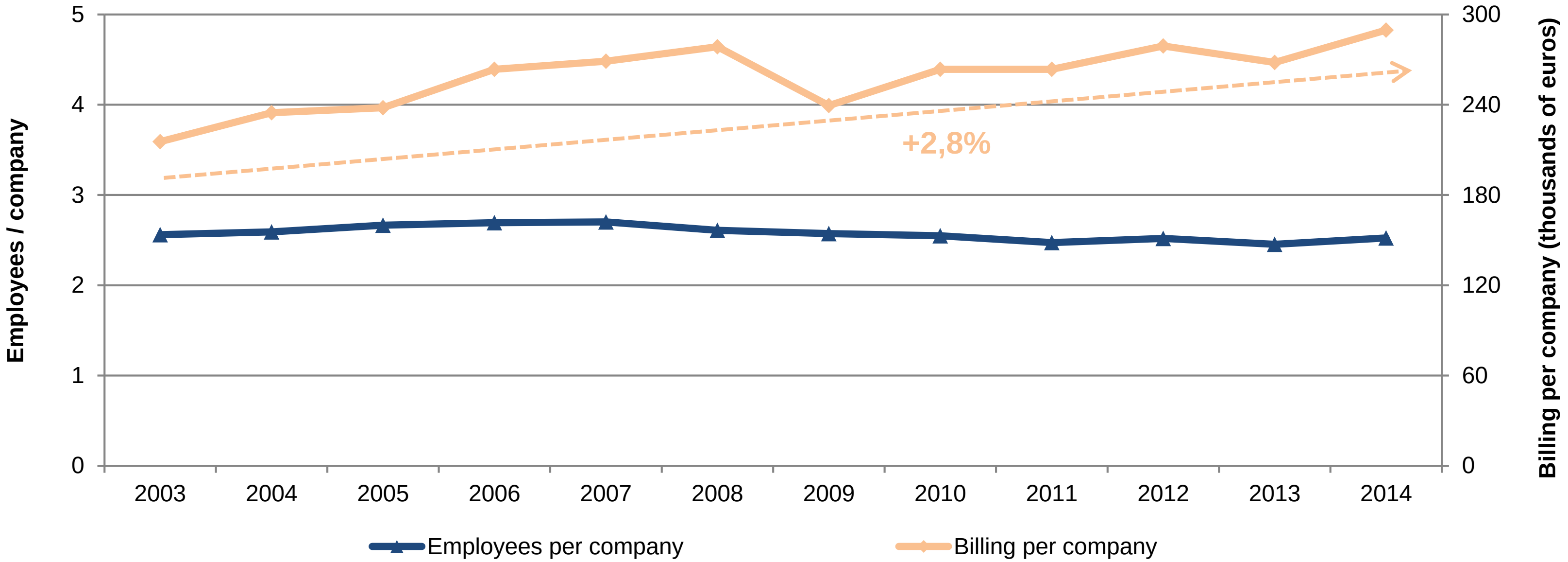


Flow type	2016	Δ 15-16
Road	277,7	1%
Rail	9,2	1%
Maritime	80,4	-1%
Aerial	133	13%

Source: Elaborated from data of Aena, Autoridad Portuaria de Barcelona, DGIMT, FGC, Ministerio de Fomento and Renfe

Business structure indicators

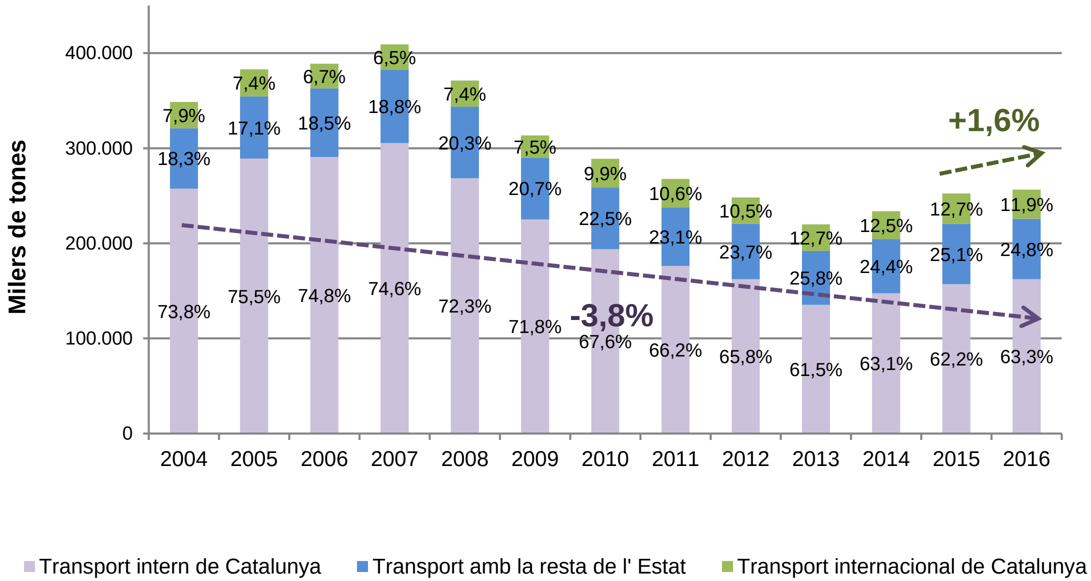
- Since 2003 there is no record of significant changes regarding **the average number of employees per company in Catalonia, being this current share 2,5.**
- The Catalan average is located away the one of the principal European countries **(Germany 9,4 (2008), Belgium 7,6 (2008)).**
- **An annual increase of a 2,8% in the billing per company has been confirmed** (2003-2014). The current billing in **Catalonia** per company is **289,6 thousands of euros (2014).**



Source: Elaborated from data of Eurostat, Idescat and INE

Distribution by type of road flow

- During the period 2007-2013, it is confirmed a general fall in the road transport volume of a 46% due to the economic crisis. This trend has been changed starting from 2014 and currently reaching the amount of **256.422 millions of tons transported by road (2016) (+9,3% about 2015).**
- Positive increment in the internal transport and the exchanges with the State. The international road transport amount highlights regarding the others (-4,4% about 2015))

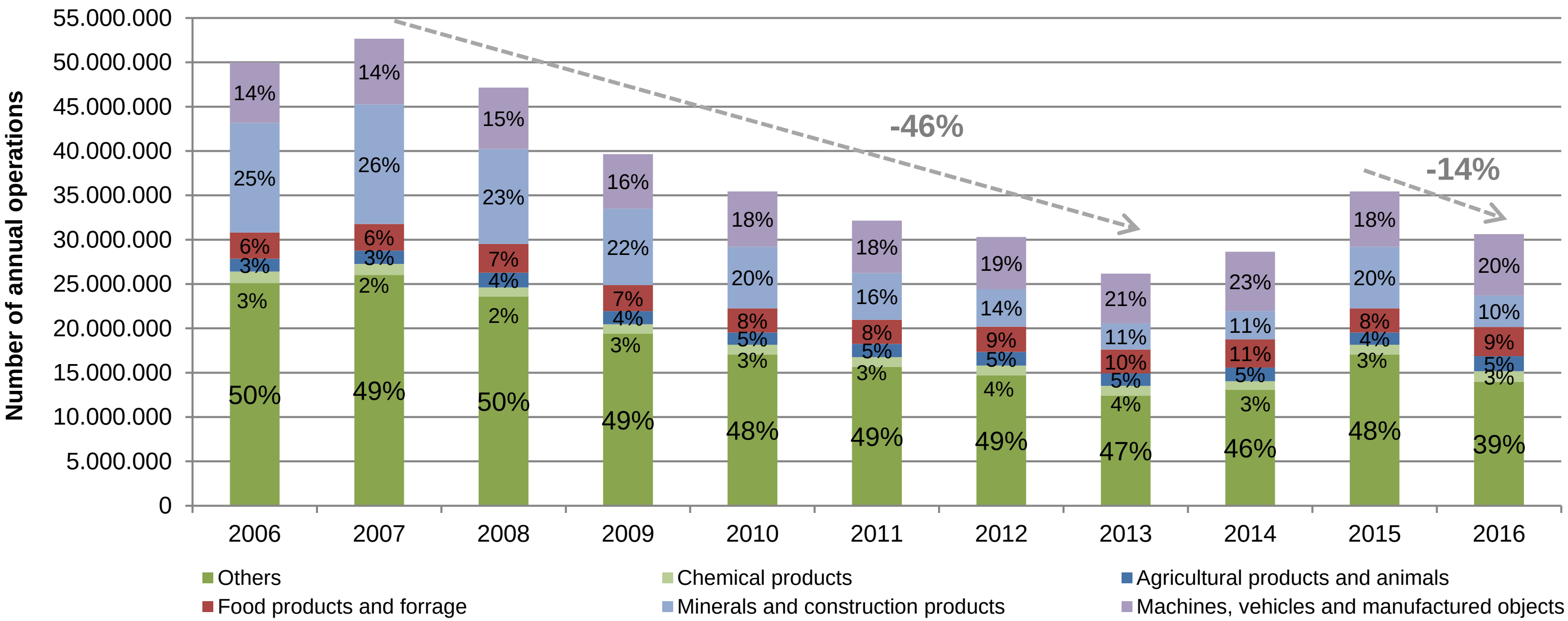


Intermodal transport	2016
Road-harbour transport (mT)	41.318
Rail-road transport (mT)	4.781
Road-air transport (mT)	133
TOTAL (mT)	46.231

Source: Elaborated from data of DGITM and Ministerio de Fomento

Operations by sectors

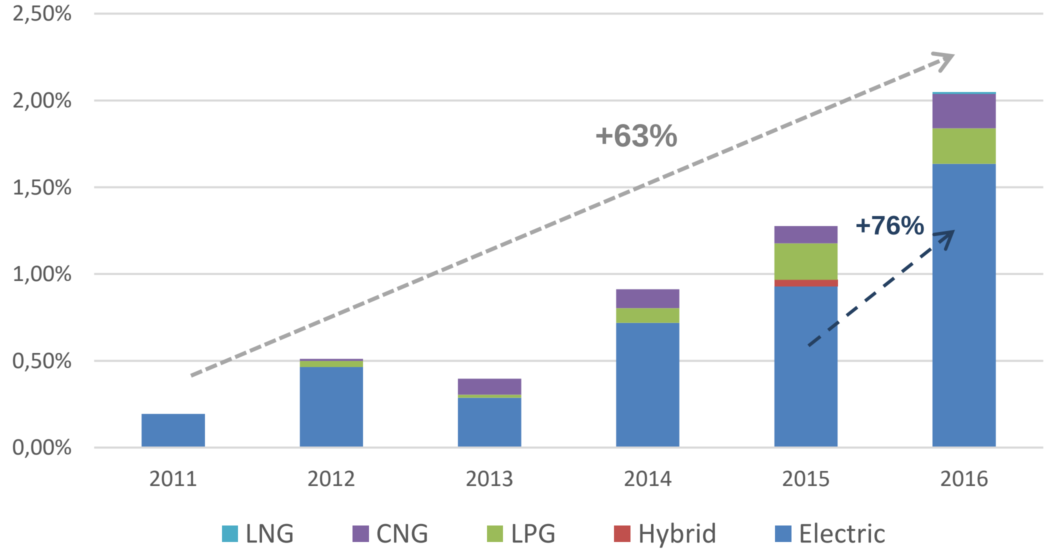
- **Fall in the total number of operations since the economic crisis starts** by a 50% (2008-2013). However, after 2015 growth (+24%), at the current data **(2016)** shows a significant decline: -14% about 2015.
- According to types of freight, **minerals and construction material (-49% about 2014)** and strongly penalized by the economic crisis. They currently represent the **10%** of the total.



Source: Elaborated from data of Ministerio de Fomento

New Evolution of enrolments according to type of fuel and maximum load

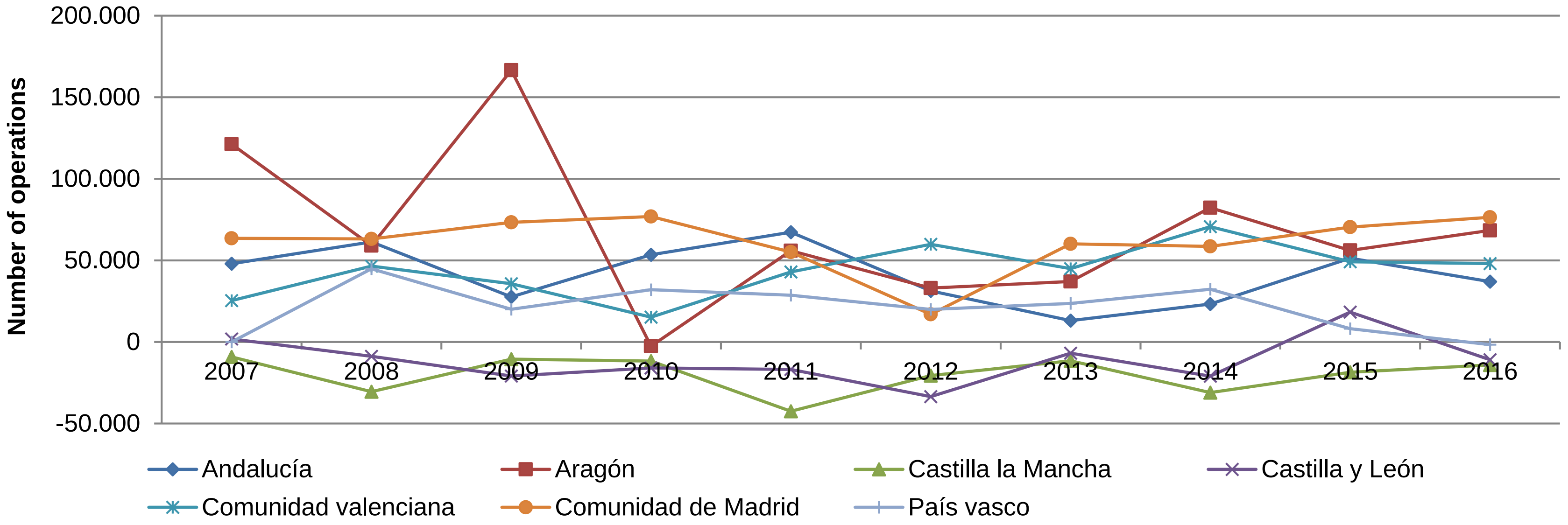
- **1.122 new registrations** between 2011 and 2016 in the number of **vans and trucks which use alternative energies.**
- The **CNG** was used for the first time in **2012 in 2 vehicles.**
- The registrations of vehicles using **NGV** increases by a **271%** about 2015 (**from 21 to 78 vehicles**).
- **LPG** goes from **44 to 43 new registrations.**



Source: Elaborated from data of DGT

Loads equilibrium/disequilibrium

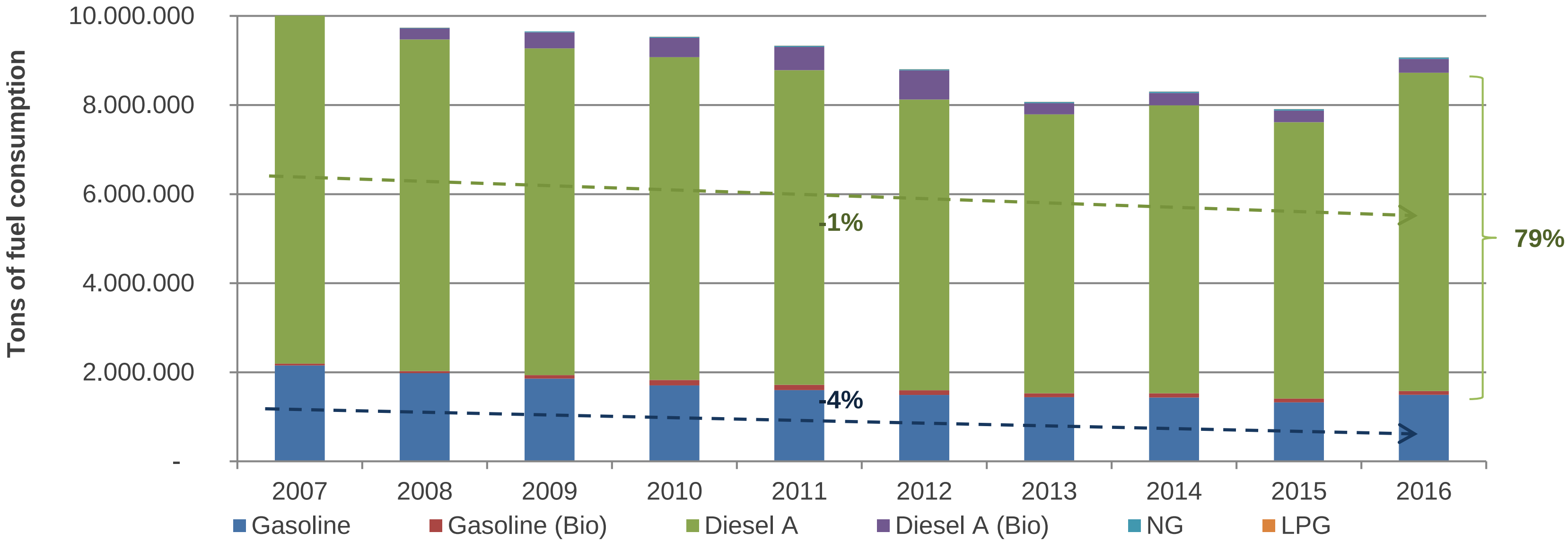
- Between **2008-2015** the only regions with a **negative balance (importations>exportations)** were **Castilla la Mancha and Castilla and León**. In the last biennium (2015-2016) in the case of Castilla la Mancha it declines a 24% and Castilla and León it grows a 159%.
- Currently, in 2016 it is confirmed an increasing **positive balance in the exchanges with Madrid and Aragón** (9% and 22% about 2015). They are expected to be a potential important destinations for the exportations from Catalonia.



Source: Elaborated from data of Ministerio de Fomento

Fuel consumption for automotive

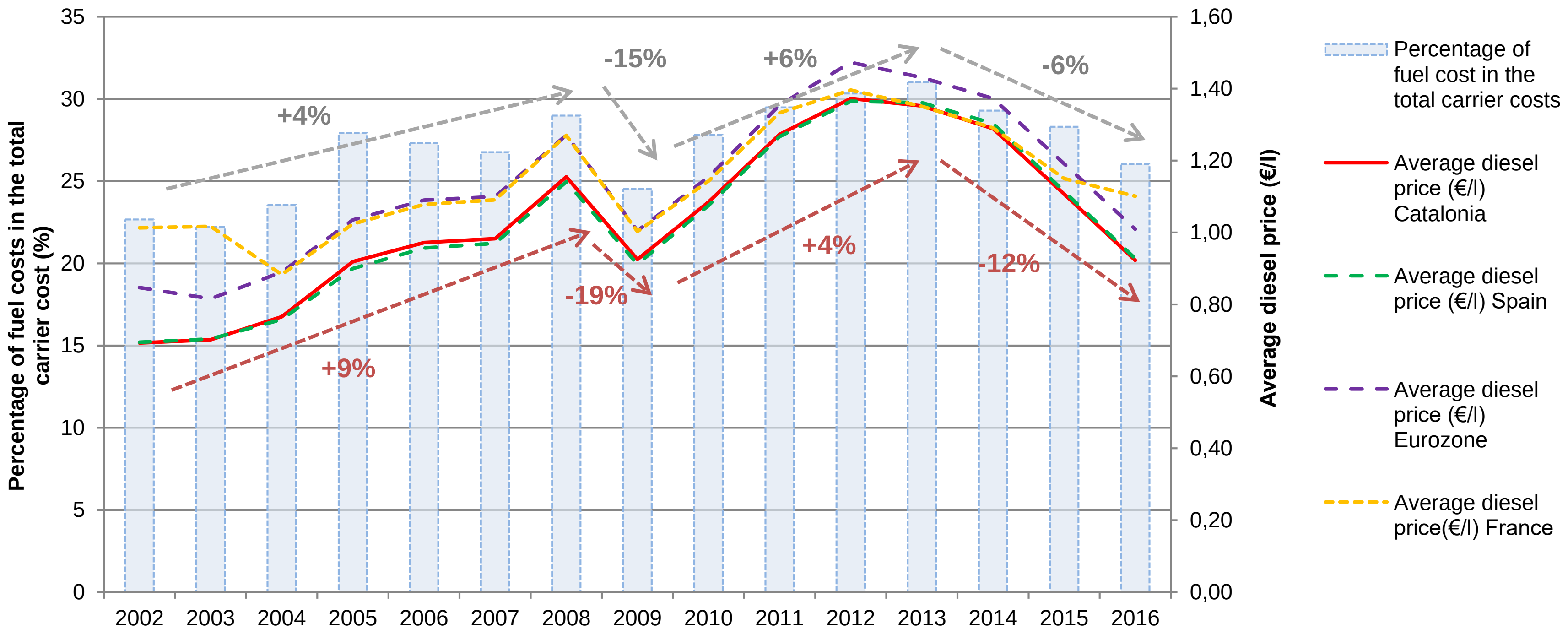
- Clear dominance of **diesel (diesel A)** throughout the studied period in Catalonia, in spite an annual decline of a **-1% (2007-2016).** Its **current market share** (2016) is a **79%.**
- **Gasoline** is the second most consumed fuel despite of its **annual decline by 6%** (2007-2016)**.**
- **Annual positive increase of the biofuel** and growth in the last biennium (2014-2016) with the exception Gasoline bio (-0,4%).



Source: Elaborated from data of CORES, Institut Cerdà and Ministerio de Fomento

Costs evolution based on diesel

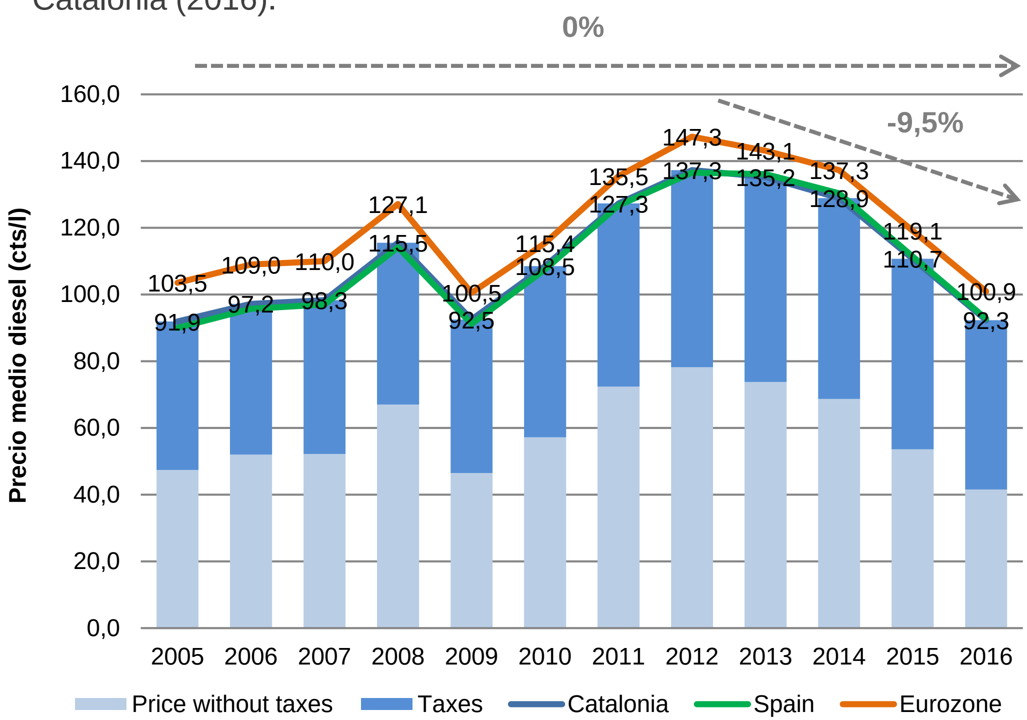
- The **evolution** of the percentage of fuel costs and the diesel price **shows a convergence between both series.**
- The **average price per litre of diesel in the Eurozone is 9 euro cents higher** that in Catalonia (2016).



Source: Elaborated from data of Generalitat de Catalunya and Ministerio de Industria, Energía and Turismo

Diesel average price in the Catalan fuel stations

- In the period of **2012-2016** exists a declination in the diesel price of a **-32,8% in Catalonia**. However, its **annual growth** throughout the studied series is around **0**% (2005-2016).
- The evolution in **Spain and in the Eurozone converges**: **0,5 cents and 8,7 cents** respectively **higher** than in Catalonia (2016).



Source: Elaborated from data of Ministerio de Industria, Energía and Turismo

Advanced data for 2017

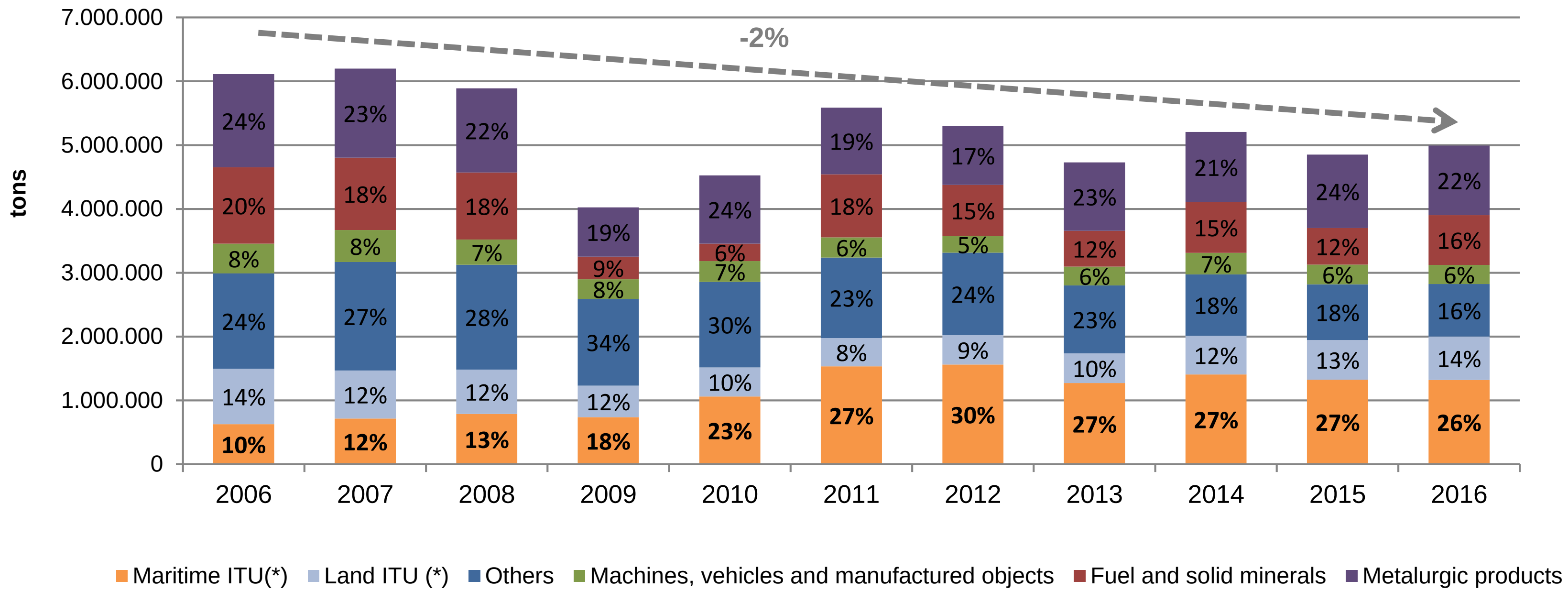
Catalonia (May): 108,4 cts/litre

Spain (May): +0,2 cents higher (108,6)

Eurozona (maig): +1,5 cents higher (119,9)

Intermodal rail transport

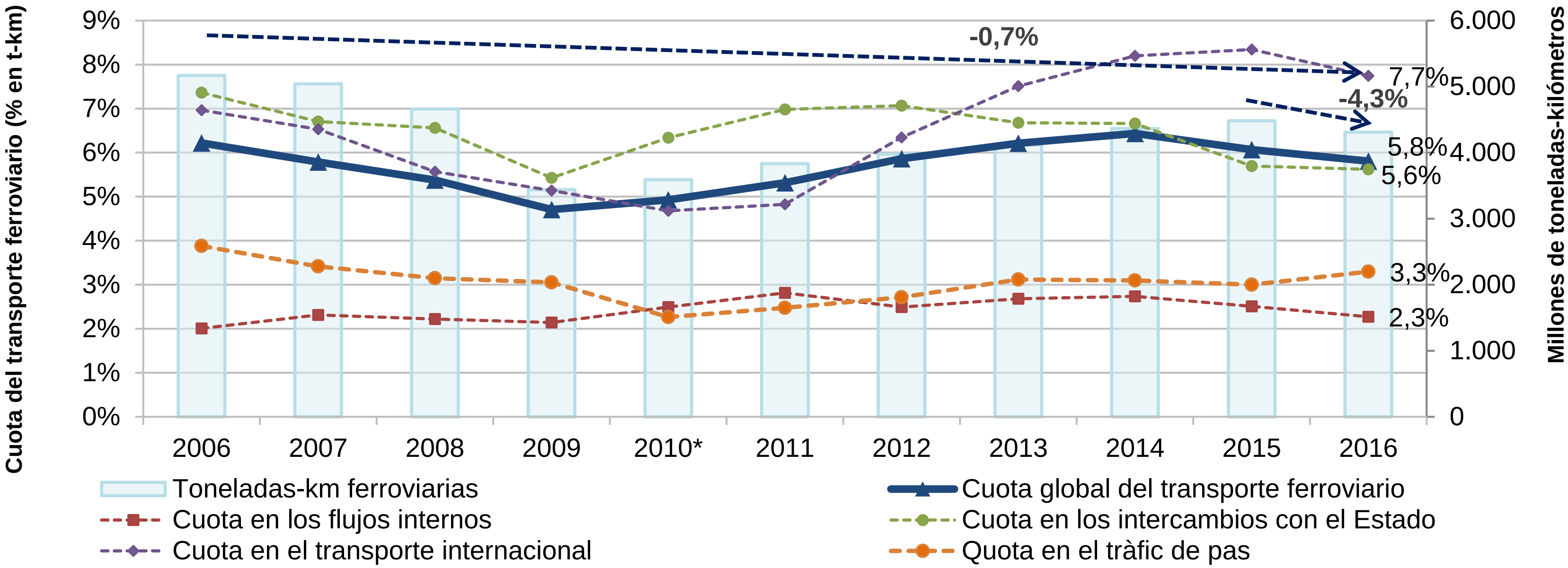
- **Oscillating trend in the total volume of managed tons by rail modes** in Catalonia. 2009 recorded the minimum transported tons of the series, followed by an accelerated growth until 2011.
- **Leadership of the transport linked to maritime mode** with an annual growth of a 8% (2006-2016), **representing the 26% of the total.**



Source: Elaborated from data of Renfe

Rail transport share

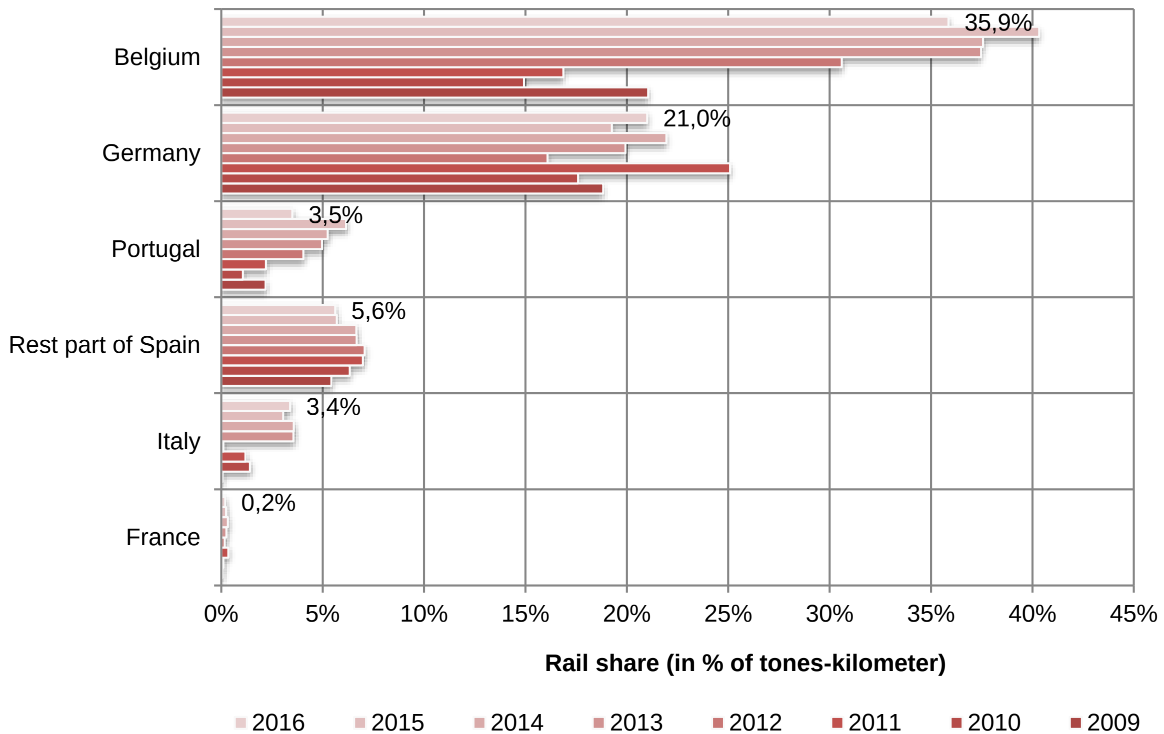
- **Rail share of intern traffics:** Decline of a 9,3% in the last biennium (2015-2016).
- **Rail share of exchanges with the rest part of the State:** Declining tendency throughout the studied series (-2,7% annual (2006-2016)).
- **Rail share of international traffic:** They currently represent a rail share of a 7,7% (2016).
- **Rail share of through traffic:** Declining tendency throughout the series (-1,6% annual (2006-2016)).



Source: Elaborated from data of DGTIM, Ministerio de Fomento and Renfe

Rail share of international terrestrial flows

- Significant differences between the region, so the evidence that **rail transport becomes more competitive in the long runs** is confirmed.

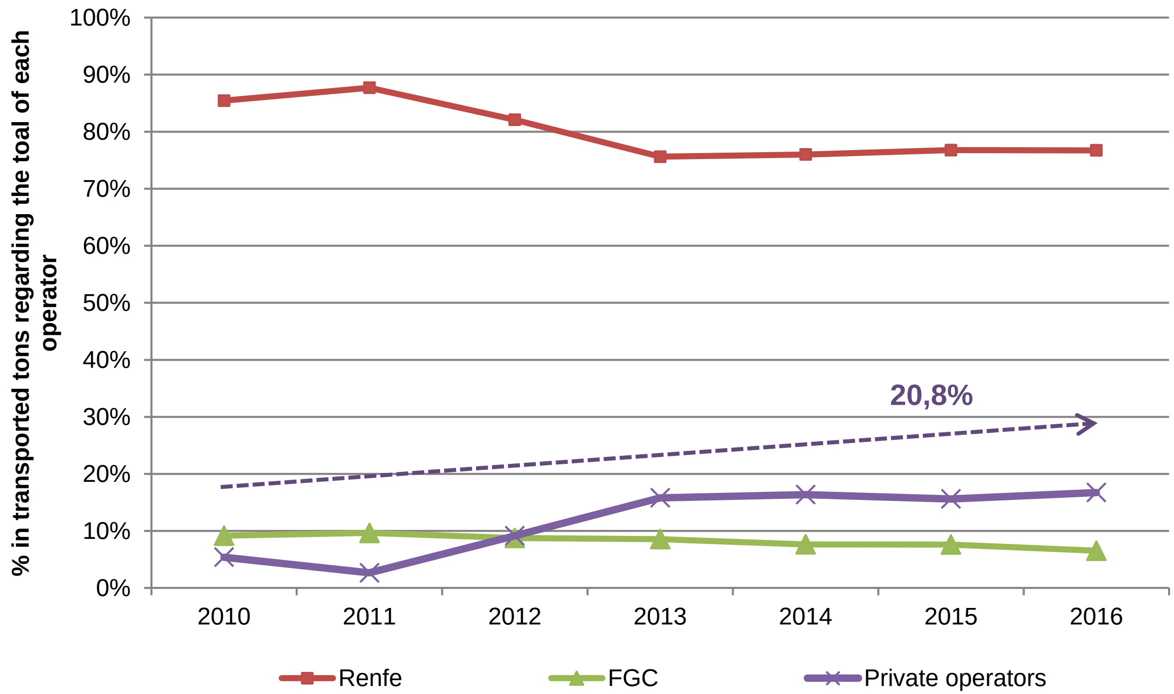


Millions of rxchanged tones-km with Catalonia	2016
France	10.543
Italy	2.919
Spain	31.467
Germany	5.553

Source: Elaborated from data of Ministerio de Fomento and Renfe

Activity of private rail operators

- In 2010 the weight of the private rail operators share regarding the freight transport in Catalonia start its presence coming to represent **a share close to the 17% in 2016** about the total transported tones by rail mode.
- **Renfe keeps its leadership with the significant share of a 77% (2016)**.

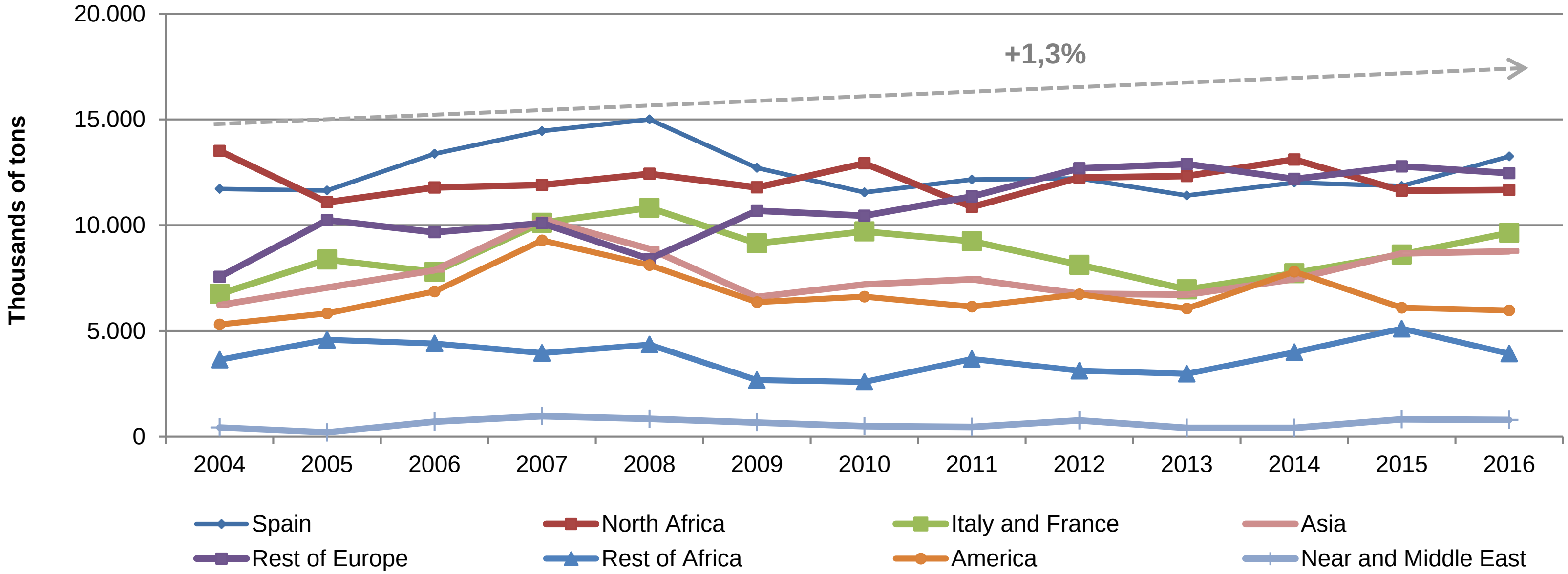


Millions onf transportes tons (2016)	2016
Renfe	7.055
FGC	700
Private operators	1.435

Source: Elaborated from data of FGC and Renfe

Freight traffic in the Catalan harbours by its origin and destinations

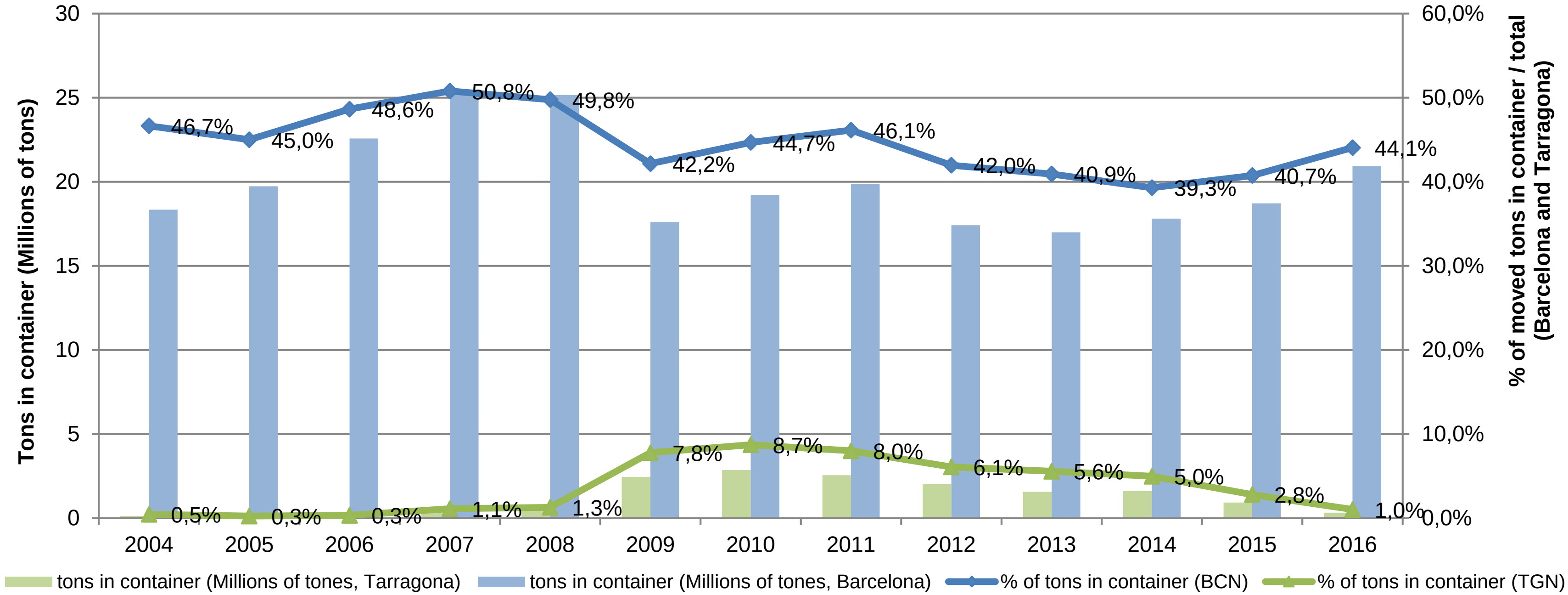
- The total freight volume moved in the harbours of Barcelona and Tarragona keeps constant (+0%) about 2015. **Increase of the international traffic in short distance in the last biennium** (2015-2016) **with Italy and France (+12%), the large distance traffic with Asia (+16,3%) and North America (+9%) and the exchanges with Spain. Decline** of the exchanges with **the rest of Africa (-23%) and Near and Middle East (-16%).**



Source: Elaborated from data of Autoridad Portuaria of Tarragona and Port of Barcelona

Percentage tons in containers regarding the total moved tons

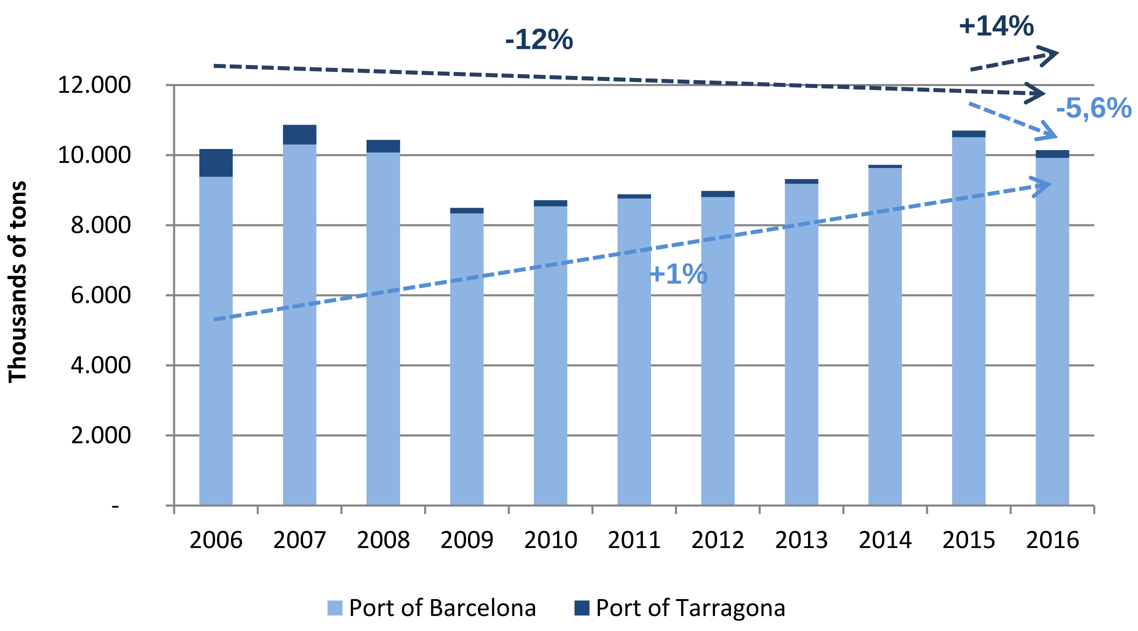
- **Port of Barcelona:** Growing rend until 2008. The **share for container traffic in 2016** has achieved the value of a **44,1%**, being lower than the maximum share of a 50,8% in 2007.
- **Port of Tarragona:** Declining trend from 2010 to the present. The **share for container traffic** in **2016** is about a **1%**. The maximum value of the 8,7% achieved in 2010.



Source: Elaborated from data of Autoritats Portuàries de Barcelona and Tarragona and Ports of Barcelona and Tarragona

Intermodality study in the maritime mode

- Clear dominance of the Ro-Ro traffic in the Port of Barcelona regarding the Port of Barcelona throughout the series (2006-2016).
- **Barcelona:** Generalized growth from 2009 to the present, increasing a 5,6% in 2016 about 2015.
- **Tarragona:** Annual decline of a -12% (2006-2016). However, the growth about 2015 has been positive, 14%.



Advanced data from 2017

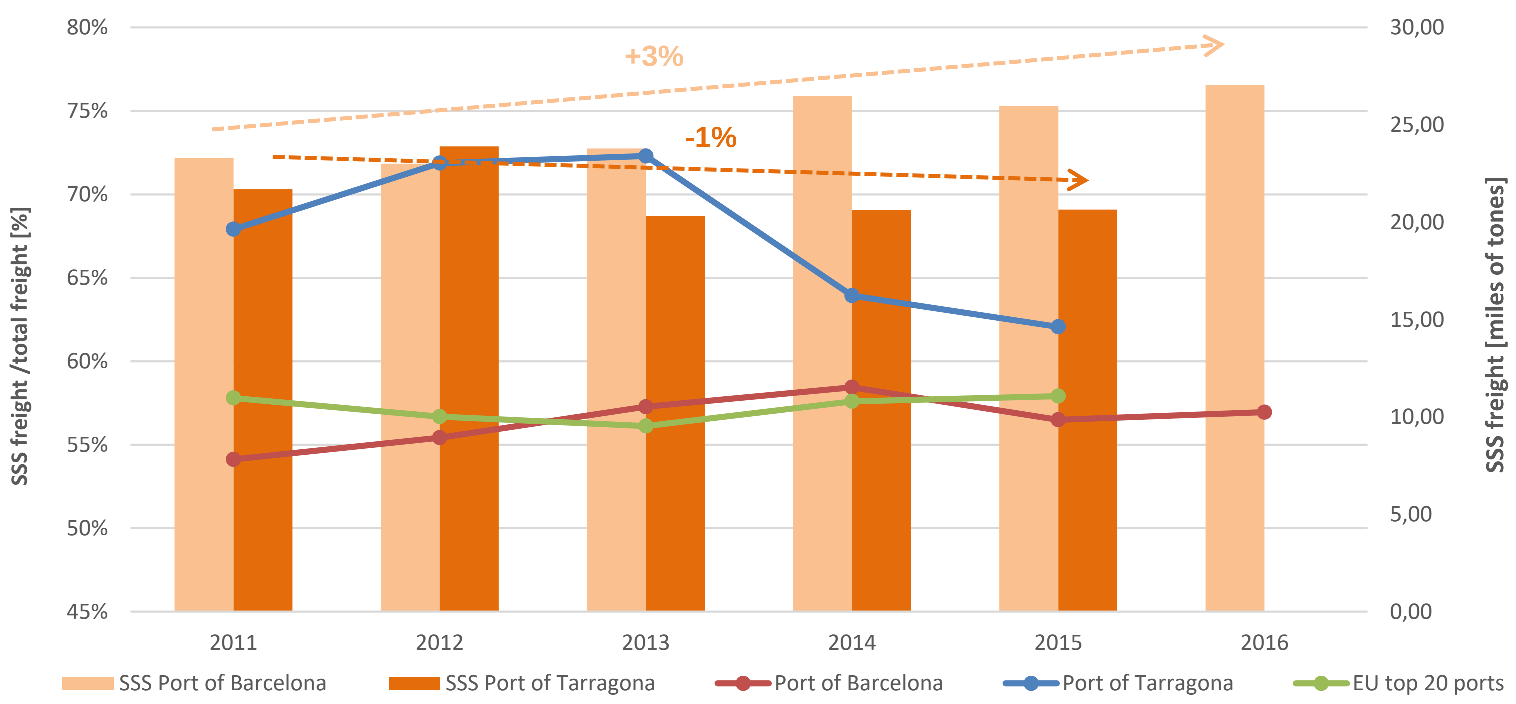
Barcelona (May): 4.329 thousand of accumulated tones since January **(+5,09% about May 2016)**

Tarragona (May): 129 thousands of accumulated tons since January **(+25,88% about May 2016)**

Font: Elaboració pròpia amb dades de Puertos del Estado

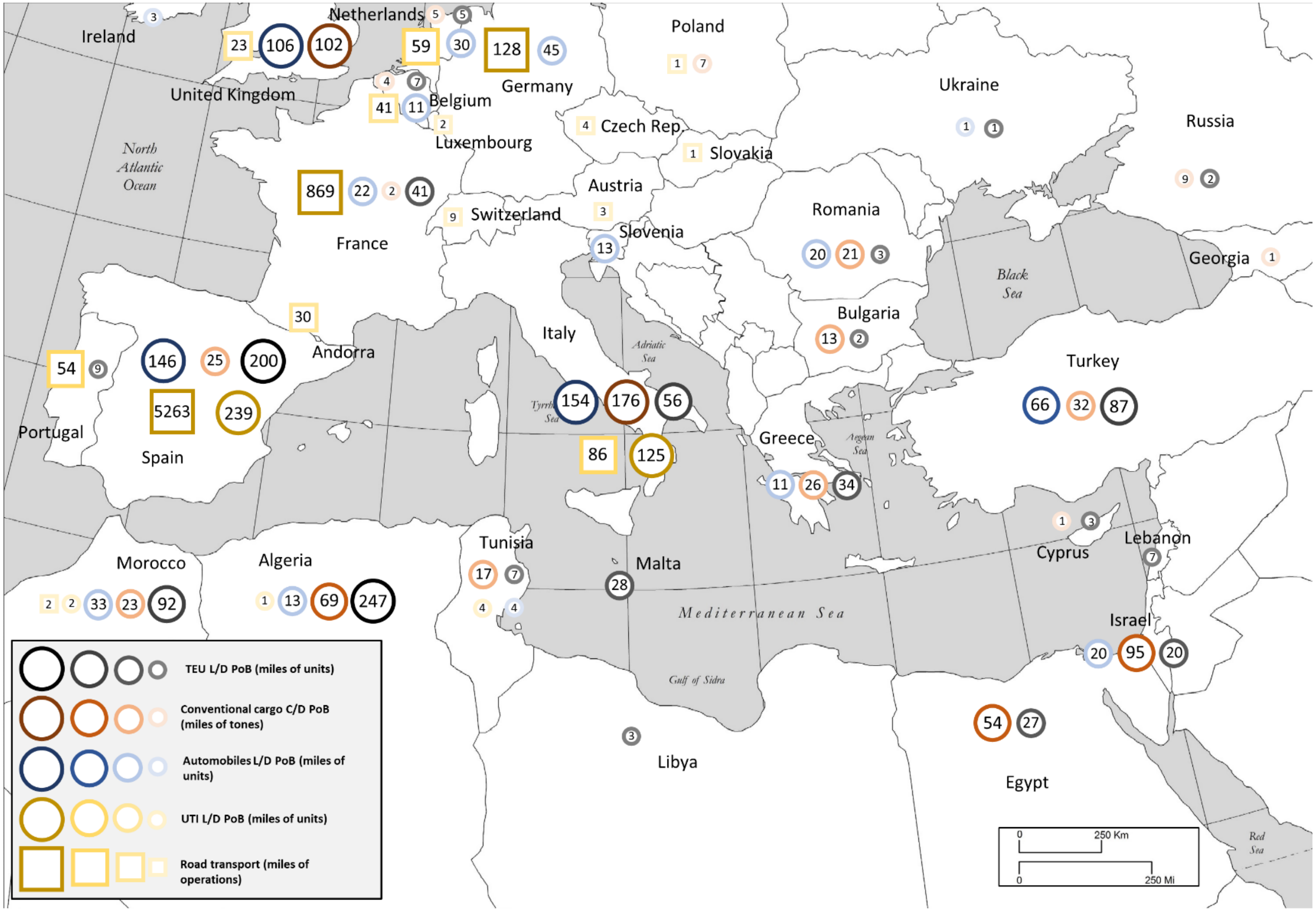
New Short Sea Shipping freight volume share regarding total traffic

- **Barcelona:** The SSS represents the 57% of the total volume, similar to the EU top 20 de ports.
- **Tarragona:** The SSS represents the 62% of the total volume.



Source: Elaborated from data of Autoritat Portuària de Barcelona and *Eurostat*

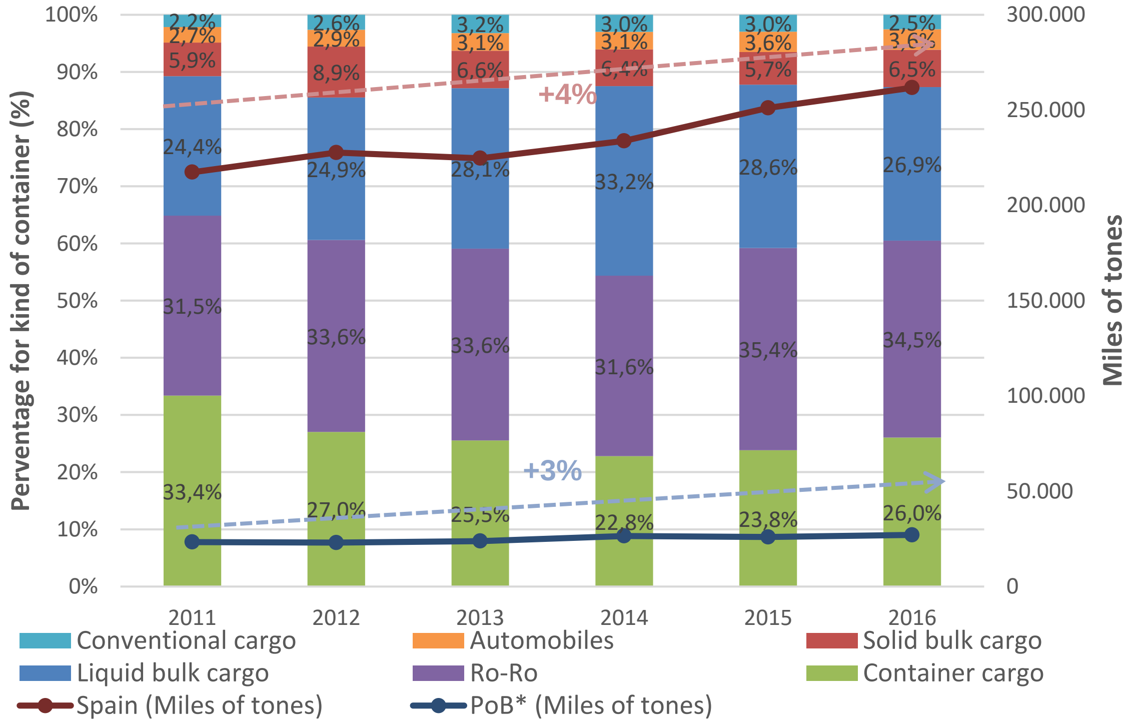
- Distribution by countries and mode. Freight volume managed with O/D Catalonia. Data from 2016.



Source: Elaborated from data of Autoritat Portuària de Barcelona and Ministerio de Fomento

New — Short Sea Shipping freight by type of container

- **Ro-Ro transport is placed in first position (34,5%)**, followed by liquid bulk cargo (26,9%) and container cargo (26%).
- The **volume transported grows a 4,2%** in the biennium 2015-16 at the Port de Barcelona and in the ports of the State.

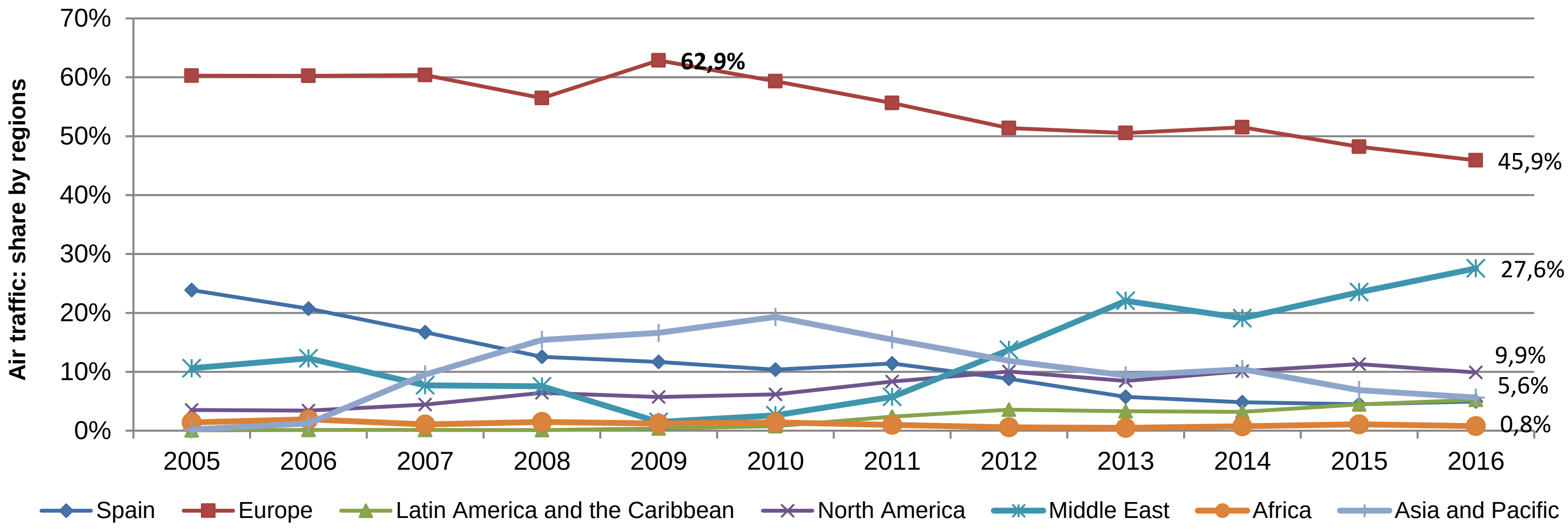


Source: Elaborated from data of *Autoritat Portuària de Barcelona* and *Asociación de promoción del TMCD*

Millions of transported tones (PoB)	
Kind of container	**2016**
Liquid bulk cargo	7.268.047
Solid bulk cargo	1.759.484
Container cargo	7.048.000
Ro-Ro	9.323.189
Conventional cargo	686.871
Automobiles	973.005
Total	**27.058.596**

Air traffic by geographic regions

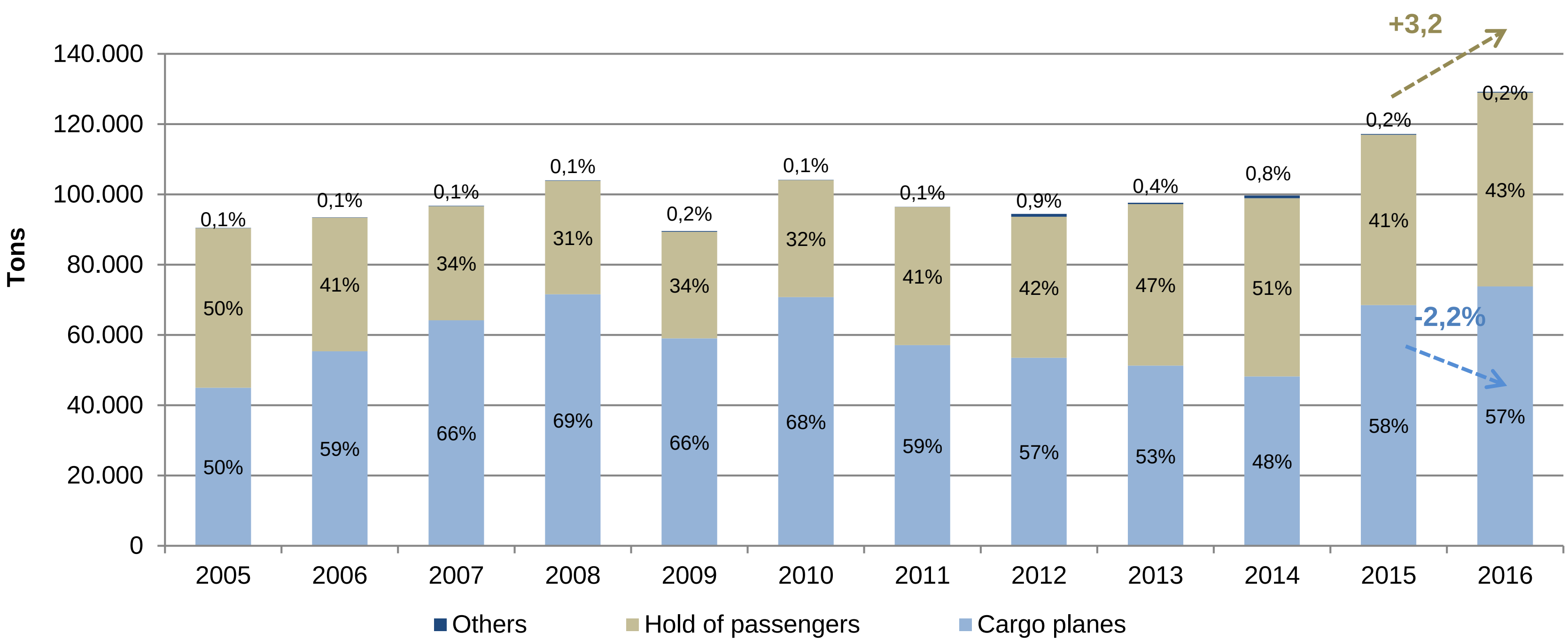
- **Exchanges with Barcelona-El Prat:**
  - **Europe: Predominant region** in terms of air traffic volume. The maximum value corresponds to 2009 with a total region share of 62,9% in moved tons. Currently, they represent the **45,9%** of the total volume.
  - **Middle East: Accelerated growth** of this market since 2011. they currently represent a **27,6%.**
  - **Spain: Progressive decline** since 2005. They currently represent the **5%** of the total volume.



Source: Elaborated from data of Aena

Goods volume by type of operation

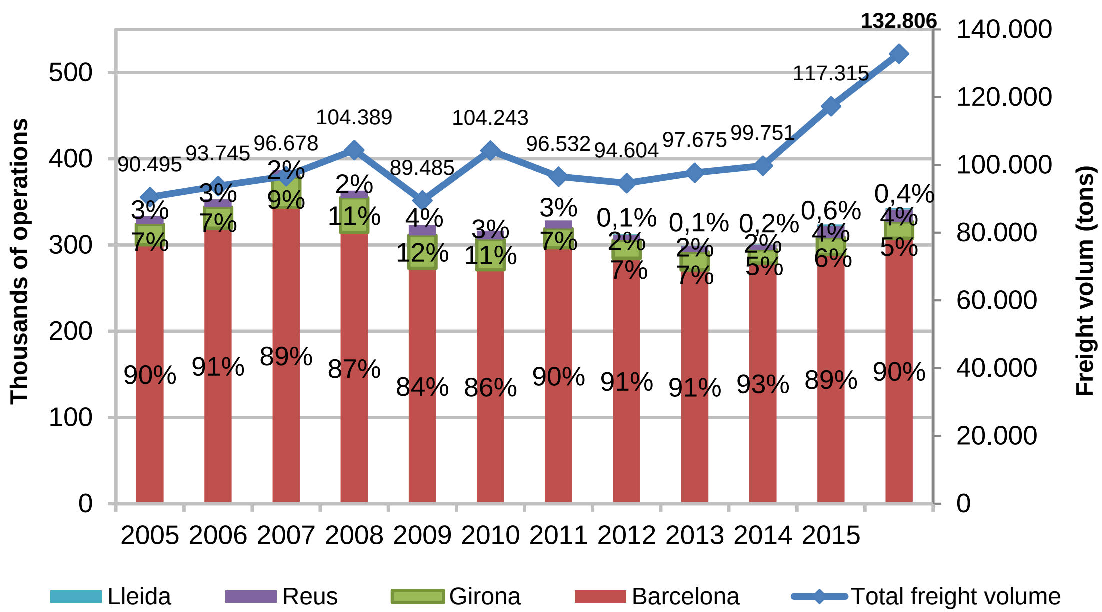
- **Cargo planes:** 2016 presents a **decline of -2,2%** about 2015. They now represent a 57% of the freight transported by air mode. However, the absolute value has increased a 7,8% about last year.
- **Transported freight in the hold of passengers: Increase of a 3,2%** about 2015, and a 13,7% of the absolute value.



Source: Elaborated from data of Aena

Catalan air traffic

- **Barcelona:** Principal airport of Catalonia, it currently accumulates the 90% of the operations in Catalonia.
- **Girona:** Represents the 5% of the total air operations in Catalonia.
- **Reus:** Third position regarding the number of operations, with a share of a 4%.
- **Lleida:** It represents the 0,6% of the total operations. They present a decline of the 25% in the number of operations about 2015.



Source: Elaborated from data of Aena

Advanced data from 2017

Between **January-April 2017** the airport of Barcelona presents an increase of its activities.

Madrid: +2,7%

Barcelona: +4,9%

Zaragoza: +4,1%

State total:+6,2%

Supply and Demand: Statistical annex

III. SUPPLY AND DEMAND

GENERAL DATTA

- III.1. – Volume of goods distributed by transport mode and flow type
- III.2. – Importations and exportations of Catalonia by areas and countries
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ROAD TRANSPORT

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- III.6. – ADT of heavy vehicles in the territorial limits
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- III.13. – Mobility of goods vehicles in Catalonia
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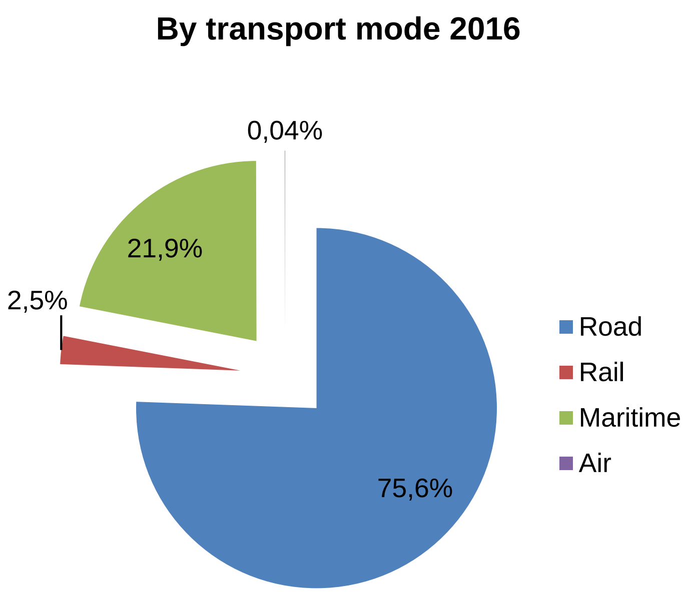

Supply and Demand: Statistical annex

III. SUPPLY AND DEMAND

RAIL TRANSPORT

- **III.16. – General transport for rail freight in Spain**
- **III.17. – Flow of goods per rail mode in Catalonia**
- **III.18. – Rail terminals in Catalonia : Evolution of the number of TEUs**
- **III.19. – International rail border crossing**
- **III.20. – Transported tons by rail mode by countries**
- **III.21. – Transported tons-kilometre by rail mode by countries**

MARITIME TRANSPORT

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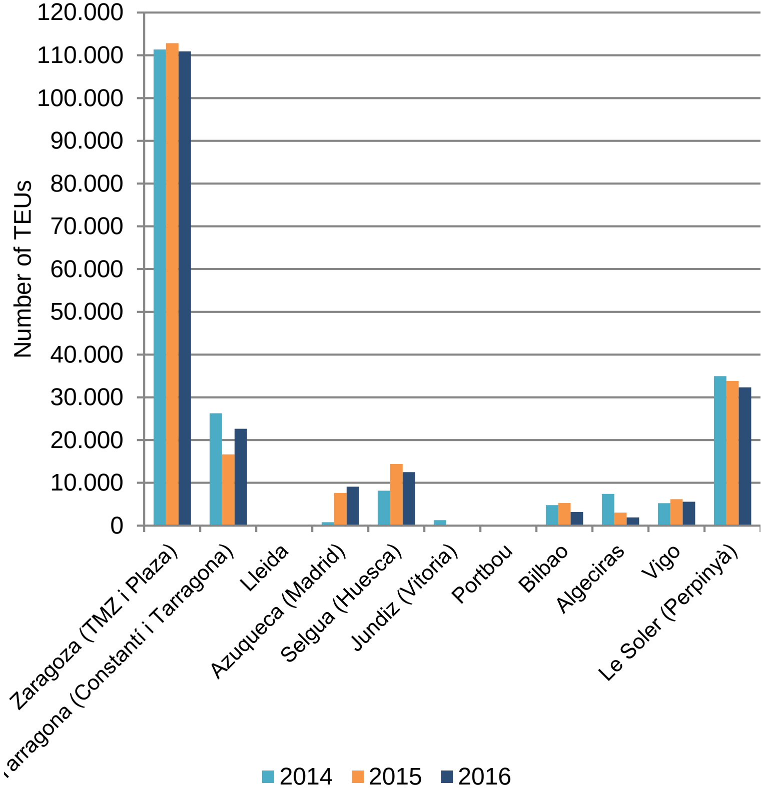
- **III.23. – Tons distribution by main origins and destinations**
- **III.24. – Modal access distribution at the Catalan harbours.**
- **III.25. – Road access to the Port of Barcelona**
- **III.26. – Rail traffic at the Port of Barcelona. Evolution of container and vehicle traffics by rail transport**
- **III.27. – The rail traffic at the Port of Barcelona. General traffic evolution**
- **III.28. – Principal destinations from the Port of Barcelona**
- **III.29. – Evolution in the inspection numbers on the FIP of the Port of Barcelona**

Number of containers received/expeded by the Port of Barcelona (RENFE)



Supply and Demand: Statistical annex

III. SUPPLY AND DEMAND

- III.30. – SSS traffic load/download at the Port of Barcelona by typology and country
- III.31. – Volume of merchandise of SSS by type of packaging at the Port of Barcelona
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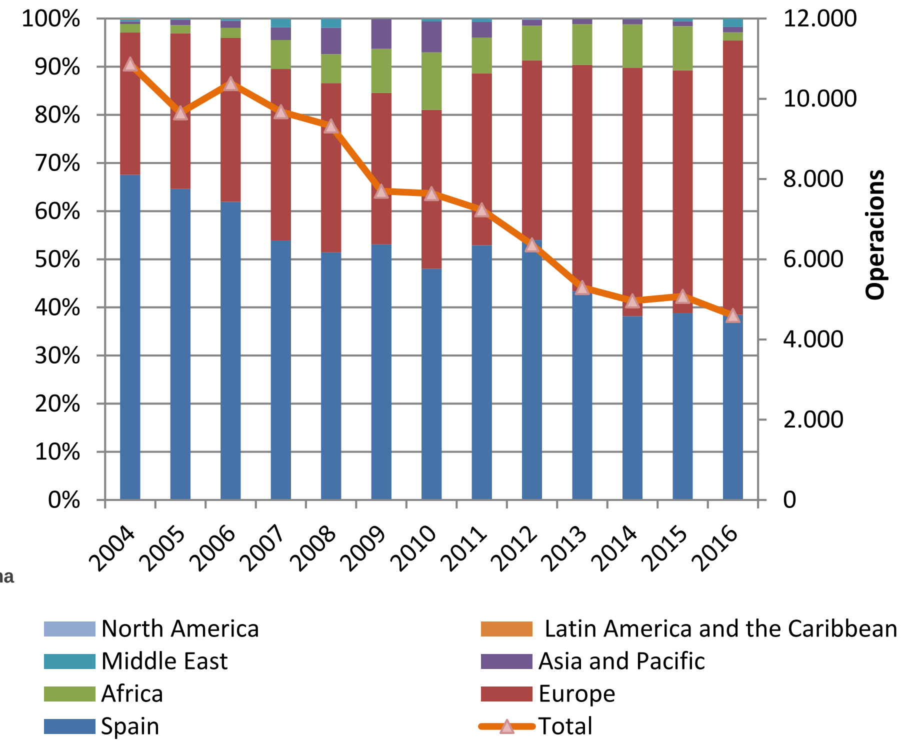
AIR TRANSPORT

- III.33. – Air freight traffic evolution (Spanish airports)
- III.34. – Number of intercontinental passenger flights at the airport of Barcelona
- III.35. – Number of weekly flights of pure cargo at the airport of Barcelona
- III.36. – Freight air transport by geographical regions
- III.37. – Freight air transport by type of airplane
- III.38. – Transported freight by aerial truck from El Prat to other airports
- III.39. – Evolution in the number of passengers at the Catalan airports
- III.40. – Evolution in the number of operations at the Catalan airports
- III.41. – Evolution of the freight volume at the Catalan airports
- III.42. – Evolution of the number of inspections on the FIP at the airport of Barcelona
- III.43. – Volume of goods by type of operations. Aerial truck weight.

Number of weekly flights of pure cargo at the airport of Barcelona



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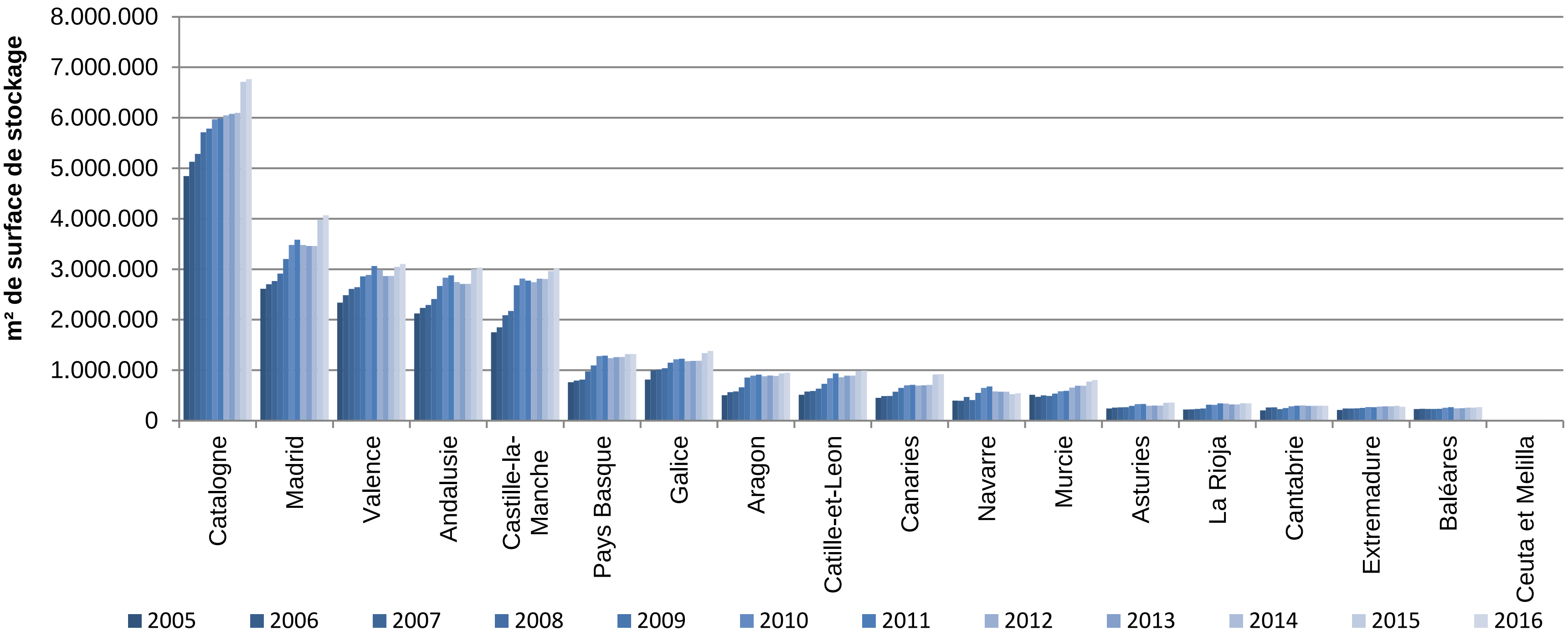
Logistics real state market

- **Catalonia reinforces its leadership within the Spanish State in terms of available surface area for warehouse and logistics platforms. It currently (2016) owns a total amount of 6,7 millions of square meters.** On the other hand, Spain increases its available area for warehouse about 2015 in a 10%, whereas in Catalonia the increase has been lighter: about a 1%.

- **Due to the consumerism environment as well as the privileged industrial and logistics development situation, the logistics platform in the province of Barcelonés leaders the ranking at provincial level in terms of available square meters for logistics warehouse (4.974.243 m^2 in 2016) and its rental price (4,6 €/m^2 per month).** Therefore, it is positioned near the average rental price for logistics warehouse in Europe of 5,4 €/m^2 per month.

Logistics area in the State range

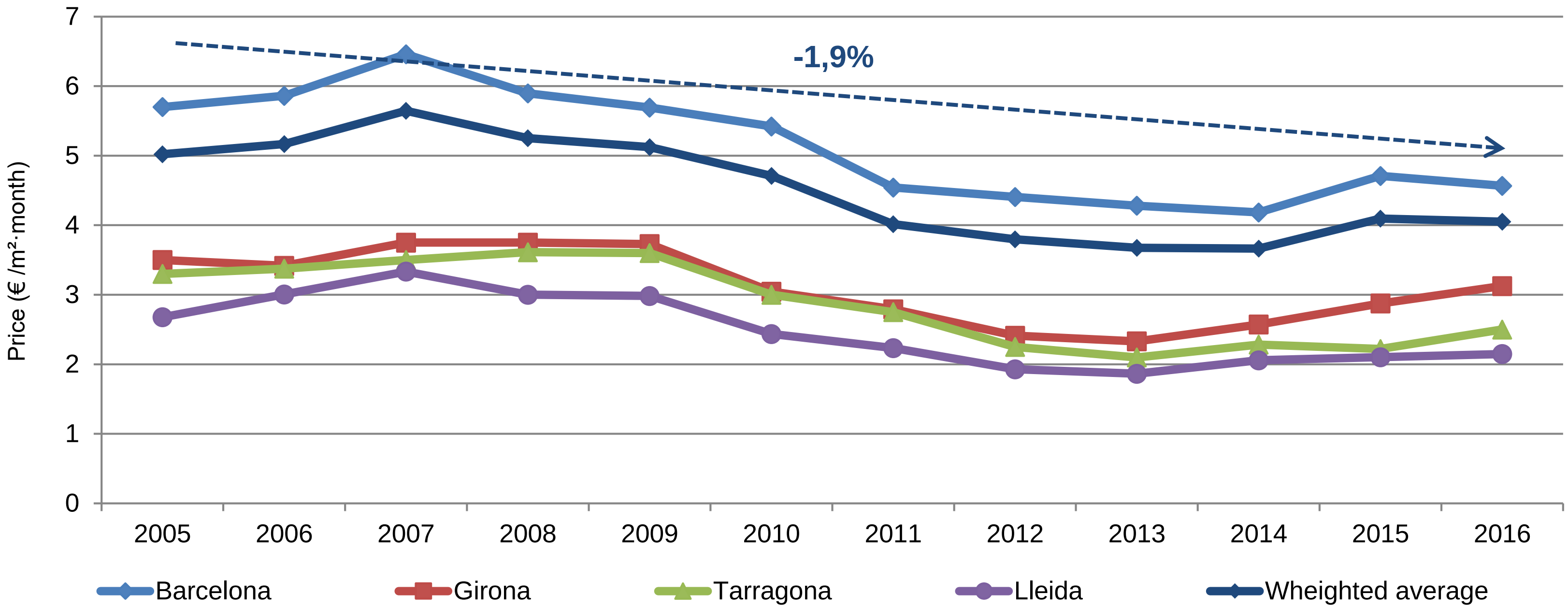
- **Catalonia**, with more than 6,7 millions of m² keeps **leading the state ranking** for logistics available surface land (**23,8%**).
- The **1% growth of supply** in Catalonia on the last biennium (2015-2016) contrasts with the growth of the 10% of the last biennium (2014-2015).



Source: Elaborated from data of Alimarket

Average rental price of logistics warehouse by provinces

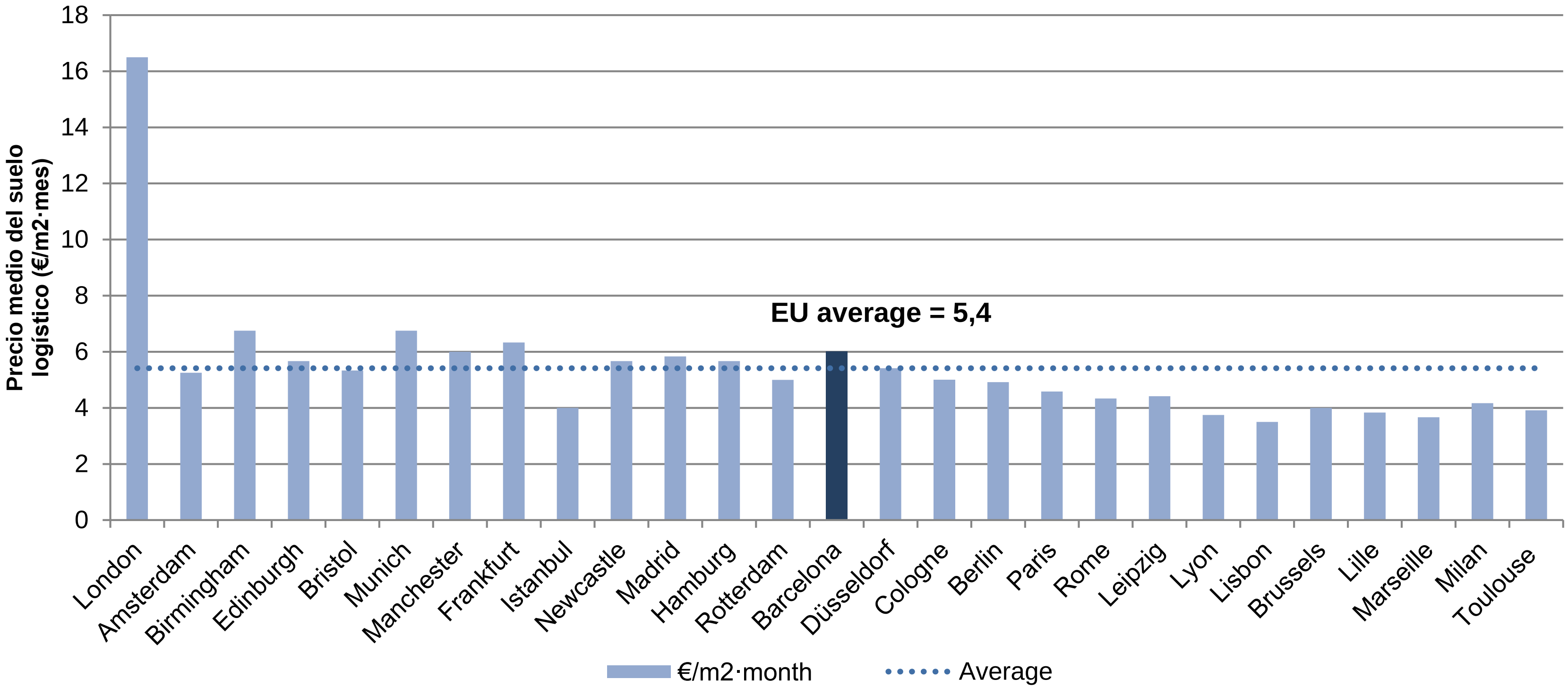
- **Regarding the weighted average in Catalonia, a huge increment is confirmed** in the rental price of logistics warehouse between **2005-2007**, followed by a **fall which lasts until 2013**, due to the economic crisis and the housing bubble explosion. 2016 presents an average price of 4,6 €/m^2 per month, a decline of -3% about 2015.
- **Increase in the prices in the other provinces, with** a notorious price increment in the **province of Tarragona around a 12,6% in regard to 2015 is confirmed.**



Source: Elaborated from data of Aguirre Newman, BNP, CBRE, Cushman & Wakefield, Forcadell, Jones Lang LaSalle and Triangle Real Estate Management

Average rental price of logistics warehouse in Europe

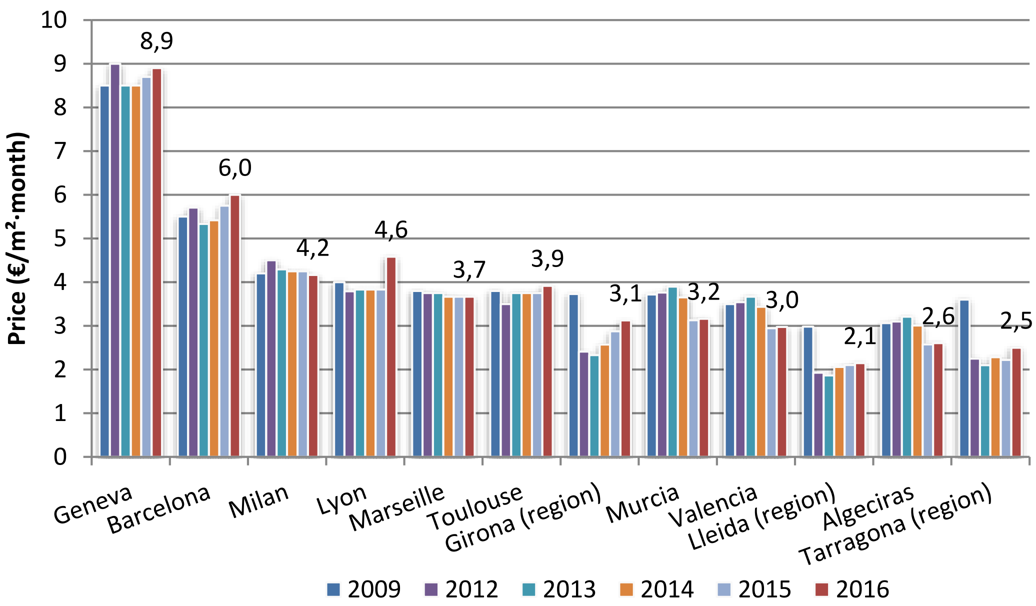
- **The average rental price of logistics warehouse in Barcelona city (6 €/m² per month) is above the European average** of 5,4€/m² per month.

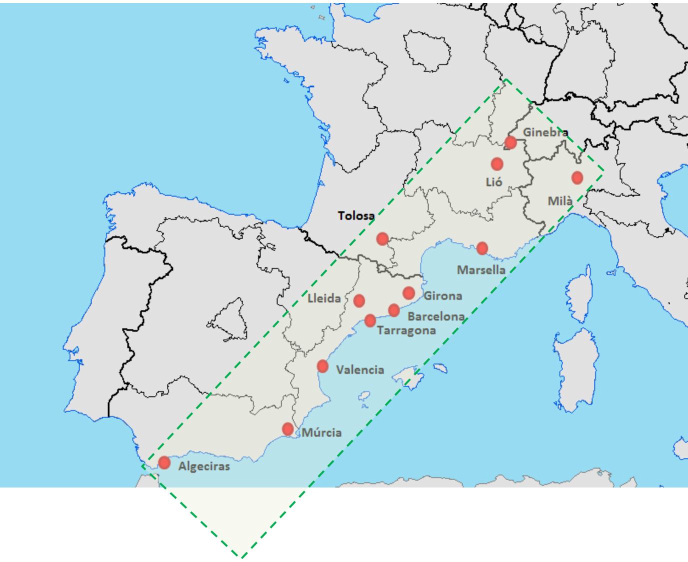


Source: Elaborated from data of Alimarket

Analysis of the logistics real state range in the Mediterranean corridor

- In a foreground **first position Geneva leaders the ranking** with an average value of 8,9 €/m² per month by the end of 2016.
- **Barcelona city occupies a second position in the ranking** with a price of 6 €/m² per month.





Source: Elaborated from data of Colliers International, BNP Paribas Estate and CB Richard Ellis

Logistics real state market: Statistical annex

IV. LOGISTICS REAL STATE MARKET

- IV.1. – Ranking of rental warehouse prices for the main logistics zones in Spain
- IV.2. – Ranking of rental warehouse prices for the main logistics zones in Europe
- IV.3. – Ranking of rental warehouse prices for the main logistics zones in the main areas in the Mediterranean corridor

Average rental price of logistics warehouse

	2006	2014	2015	2016	Δ15-16	interanual
San Agustín	5,1	3,1	3,1	3,1	0,0%	-4,8%
Vallecas	0,0	4,3	-	-	0,0%	0,0%
Cabanillas del Campo	3,8	3,3	2,9	2,9	0,0%	-2,8%
Getafe	5,5	4,1	4,1	4,1	0,0%	-2,8%
Seseña	4,3	2,9	2,9	2,9	0,0%	-3,8%
Azuqueca	4,3	2,8	2,9	2,9	0,0%	-3,9%
Ontigola	0,0	2,7	2,7	2,7	0,0%	0,0%
Valdemoro	3,3	3,1	3,1	3,1	0,0%	-0,6%
Alcalá de Henares	4,8	4,0	3,5	3,5	0,0%	-3,0%
Coslada	6,3	4,5	4,5	4,0	-11,1%	-4,4%
Madrid 1a Corona regional	7,0	4,3	4,3	4,3	0,0%	-4,8%
Madrid 2a Corona regional	4,8	2,8	2,8	2,8	0,0%	-5,2%
Madrid 3a corona regional	3,2	1,7	1,7	1,7	0,0%	-6,0%
Sevilla	0,0	-	0,0	0,0	0,0%	0,0%
Zaragoza	3,0	1,8	2,2	2,6	16,5%	-1,6%
València	4,0	3,3	2,9	3,0	1,1%	-2,9%
Girona	3,4	2,6	2,9	3,1	8,7%	-0,9%
Tarragona	3,4	2,3	2,2	2,5	12,6%	-3,0%
Lleida	3,0	2,1	2,1	2,1	2,1%	-3,3%
Barcelonès	7,0	5,5	5,5	5,9	6,4%	-1,8%
BaixLlobregat	6,4	4,3	4,5	5,3	16,7%	-1,9%
Vallès Oriental	5,3	3,3	3,8	3,8	1,3%	-3,2%
Vallès Occidental	4,9	3,3	3,8	4,2	10,7%	-1,5%
Alt Penedès	4,2	2,4	3,3	3,3	0,0%	-2,4%
BCN 1a Corona 0-10 Km	7,3	5,7	6,1	4,9	-20,4%	-3,9%
BCN 2a Corona 10-40 Km	5,3	4,3	4,4	3,6	-17,1%	-3,6%
BCN 3a corona 40-100Km	3,8	2,8	3,0	2,8	-8,3%	-3,1%

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Efficiency

- The intermodal shares presented a global increasing tendency during the economic crisis. **However, it is confirmed that the mentioned increase in the shares responded to a fall in the demand of transport, which has in fact affected the unimodal chains in the recent years and does not correspond to a flow gain for the intermodal chains.**

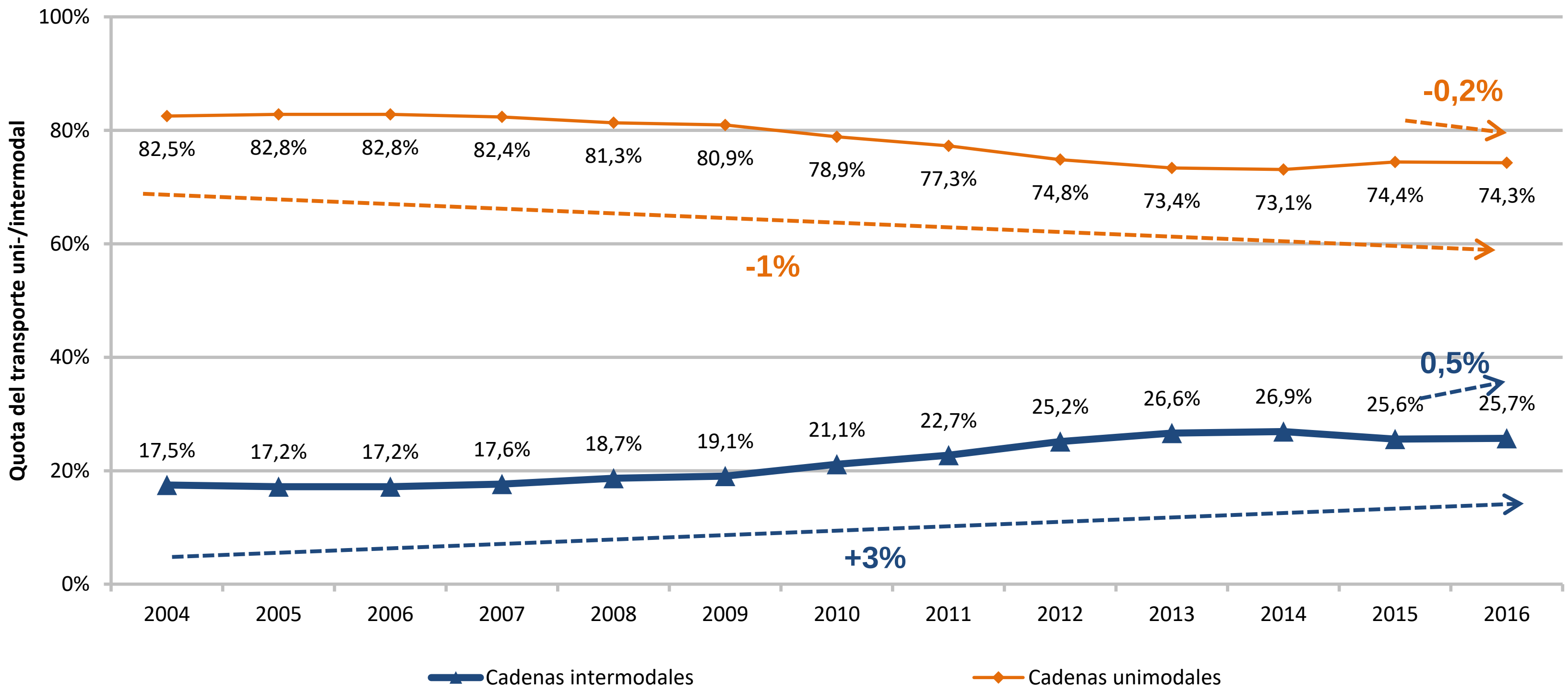
- **The percentage of empty displacements remains stable around a share of a 40% along the series of study (2004-2016) and with a decline of a -0,4% in the last biennium (2014-2016).** Despite the opportunity that the economic recession entails in terms of increasing the operative efficiency in the goods transport sector, the high atomization level of the sector makes difficult to reduce this share.

- **In the interval of 2006-2015 the consumption of fuel and the amount of gas and particle emissions regarding the freight transport have experienced an important decline.** For the first time, in this edition, the total consumption and the unitary (toe/km) have been analysed. In 2015, even though the total kilometres have increased, there has been a decline of a 0,2% of the emissions about 2014.

- **The PLG importance as an automotive fuel has increase significantly since 2006, being multiplied by 8 between 2007 and 2016.** Its annual variation is above 27% for this period and its current consumption is 8 ktoe.

Intermodal transport share

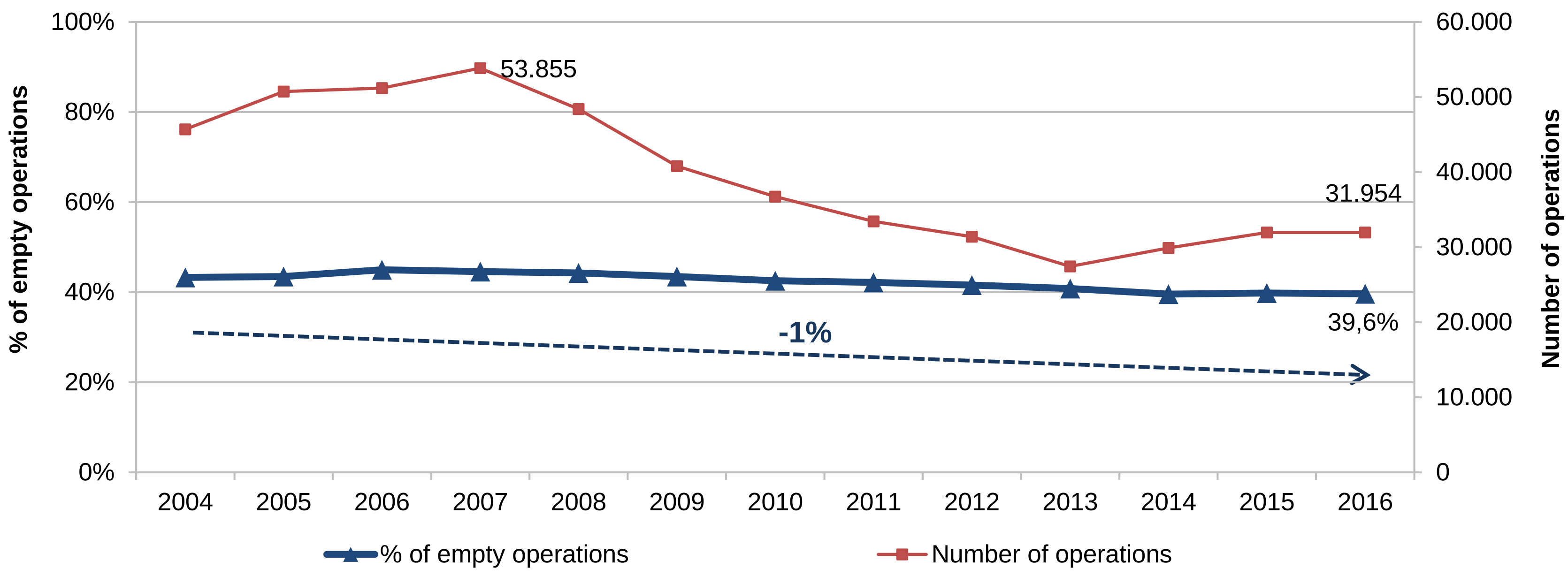
- **The increase of the intermodal share** in the recent years **corresponds to a drop in the transport demand**, which has in fact affected more to the unimodal road chains than to flow gains of the intermodal chains.



Source: Elaborated from data of FGC and Renfe

Percentage of empty trips

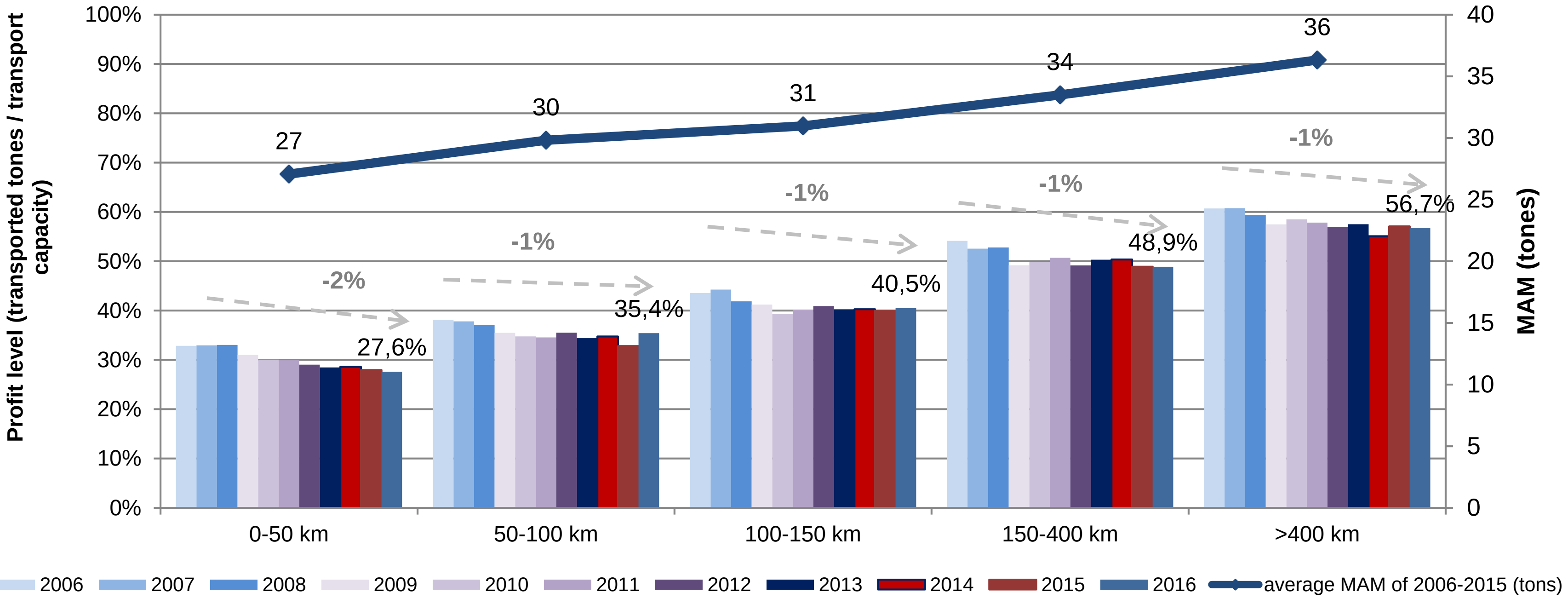
- **A negative evolution of the total operation numbers,** with an **annual variation of a -0,7%** (2004-2016). From 2013 to the present days the tendency has been inverted.
- Tendency of a **reduction in the percentage of empty displacements.** Rates bellow 40% in the recent years (2014-2016). There is a light decline (-0,4%) in the last biennium 2015-16.



Source: Elaborated from data of Eurostat and Ministerio de Fomento

Capacity level of use in road transport

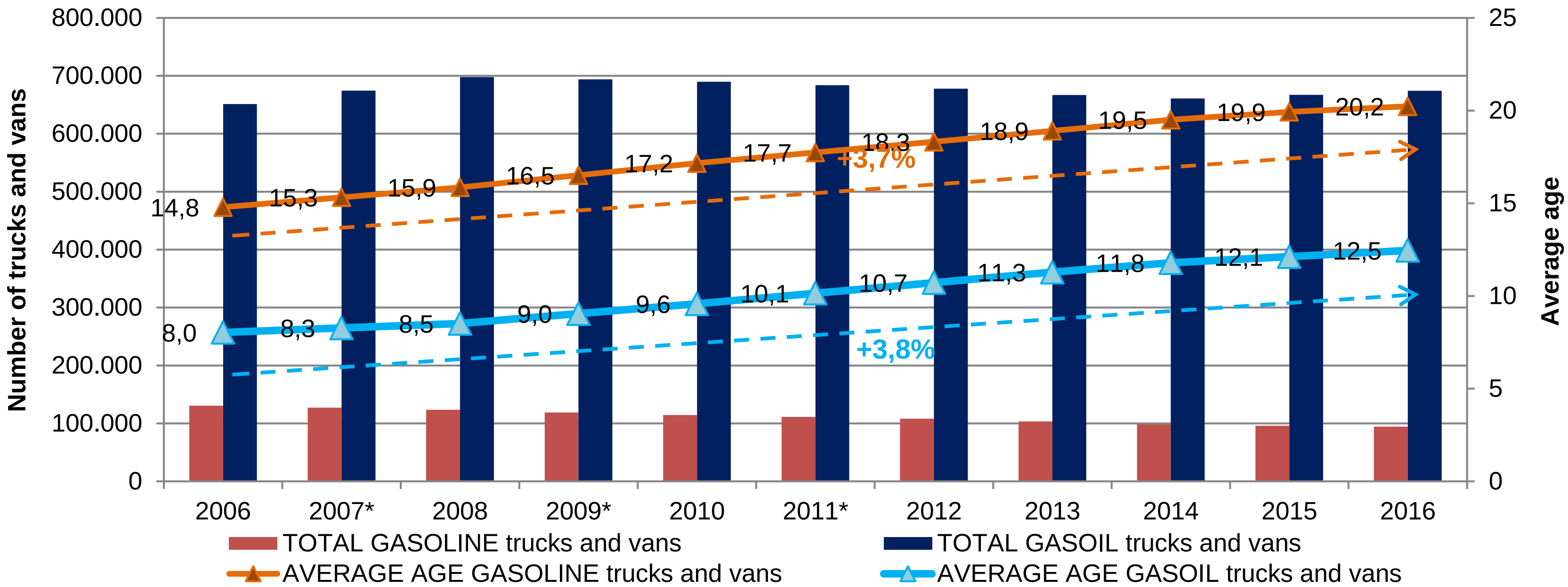
- **Global decline of the profit level along the entire series (2006-2016),** regarding the heavy vehicles in Catalonia. Currently (2016), the profit level is located between 28% and 57% depending on the travelled distance.
- The following relation is confirmed: **the longer the travelled distance, the higher the profit level.** In 2016 the maximum achieved level is a **57% corresponding to distances >400km**.



Source: Elaborated from data of Ministerio de Fomento

Average age of the park of trucks and vans in Catalonia

- **General aging tendency.** Annual growth (2006-2016) in terms of the average age of a 3,7% in gasoline users for trucks and vans and about a 3,8% in diesel users for trucks and vans.
- **Dominance of diesel motor vehicles regarding the ones with gasoline.** They currently represent an amount of a 88% in 2016.

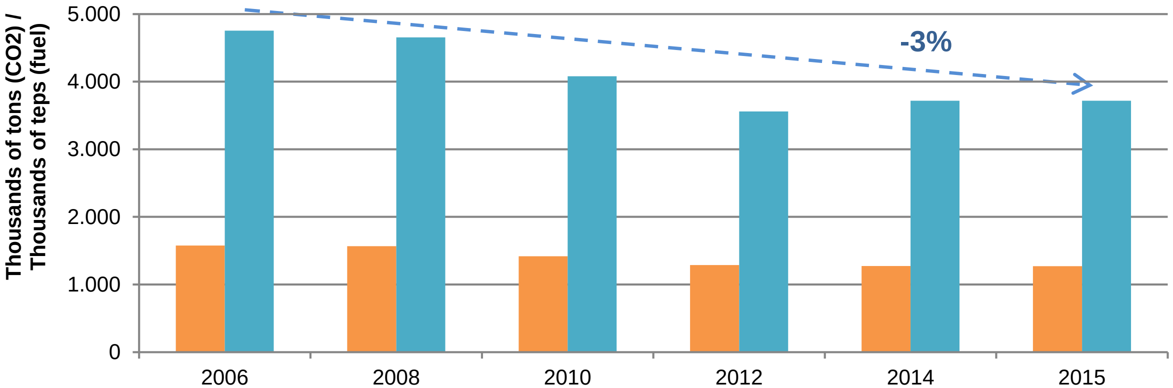


*Observation: Linear interpolation between the preceding and the later year

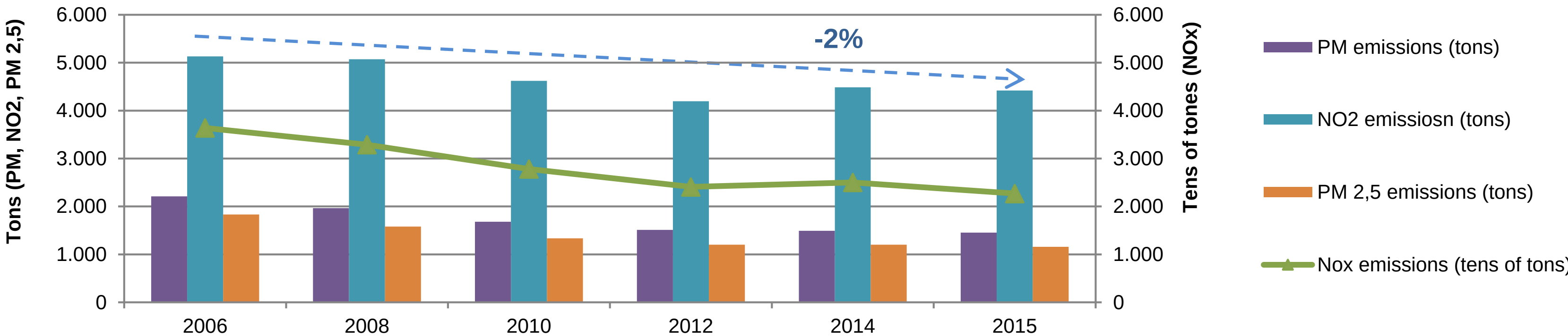
Source: Elaborated from data of DGT

Goods road transport emissions in Catalonia

- **Generalized decline** in the consumption and the emissions (2006-2015).



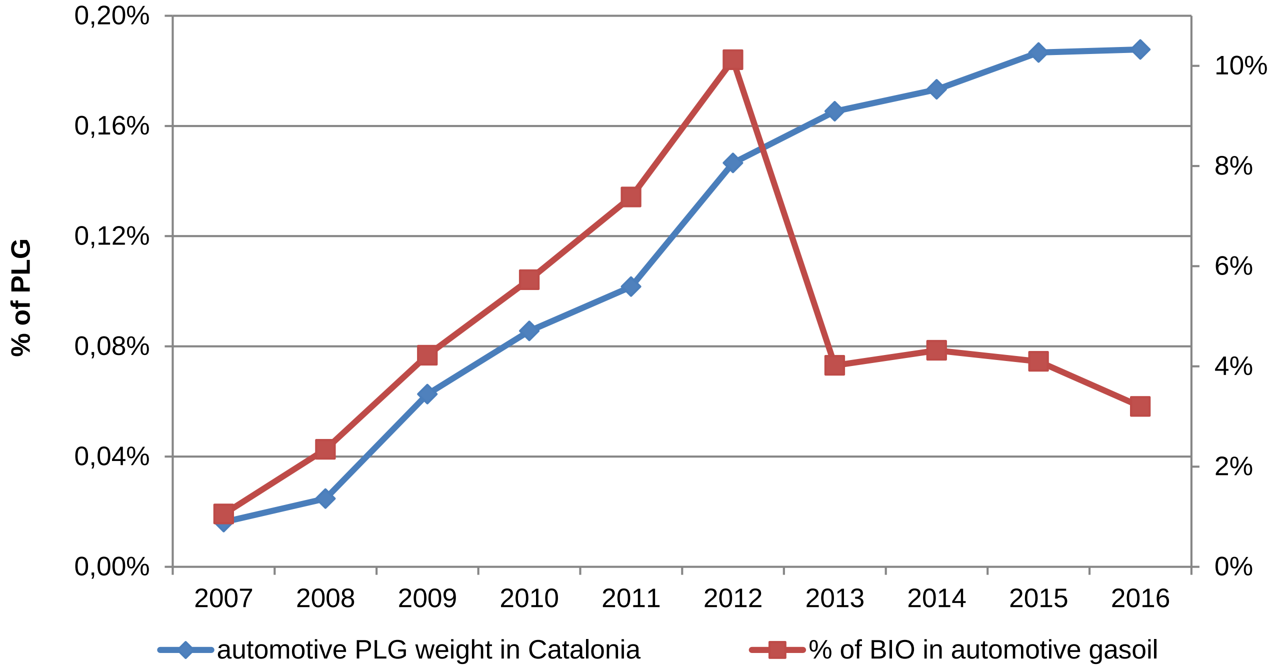
Emissions	Annual evolution (2006-2015)	Evolution (2012-2015)
CO_2	-3%	+1%
PM	-5%	-1%
NO_2	-1%	+2%
PM 2,5	-4%	-1%
NO_x	-5%	-2%



Source: Elaborated from data of DGT, Institut Cerdà, EEA and Ministerio de Fomento

Weight of alternative fuels

- **PLG:** Increase in the consumption of PLG with an annual variation of a 31% (2007-2016).
- **BIO in diesel:** Fall started in 2013 in the BIO in diesel consumption. In the last biennium (2015-2016) its consumption has declined in a 22% regarding the previous annuity.



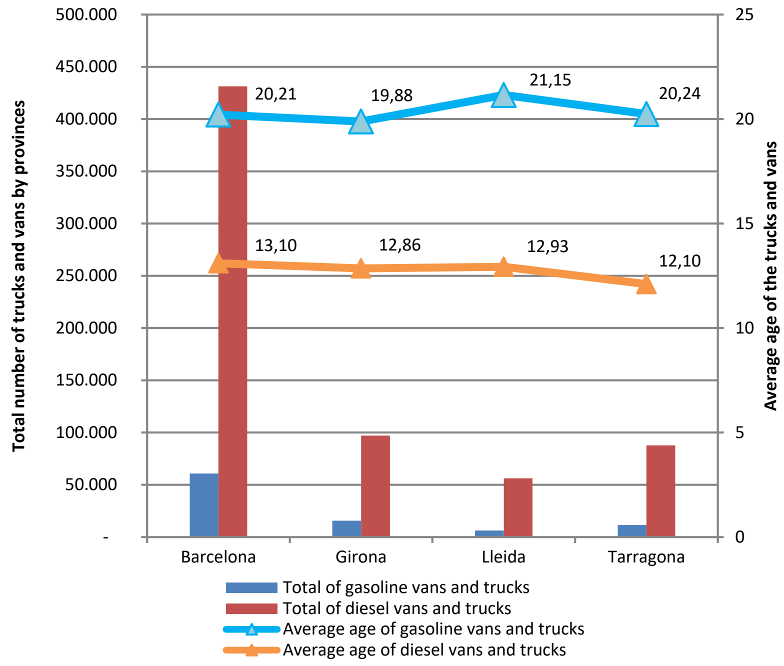
Annual evolution in the percentatge of the alternative fuel consumption (2007-2016)	
GLP	31%
Biocombustibles	13%

Source: Elaborated from data of ICAEN and CORES

Efficiency: Statistical annex

V. EFFICIENCY

- V.1. – Estimation of the intermodal and unimodal transport development
- V.2. – Transport operation and its empty journeys percentage, by type of operation
- V.3. – Average antiquity of the park of trucks and vans in Catalonia
- V.4. – Gasoline and diesel consumption in Catalonia and Spain
- V.5. – Average antiquity of the park of trucks and vans in Catalonia by provinces
- V.6. – Empty operations percentage by travelled distance
- V.7. – Territorial distribution of the saturation degree of the Catalan importations – importations by autonomous community
- V.8. – Emissions subjected to the freight transport in Catalonia by travelled distance
- V.9. – Bunkering operations at the State Ports
- V.10. – World fleet propelled by LNG by type and year of commissioning



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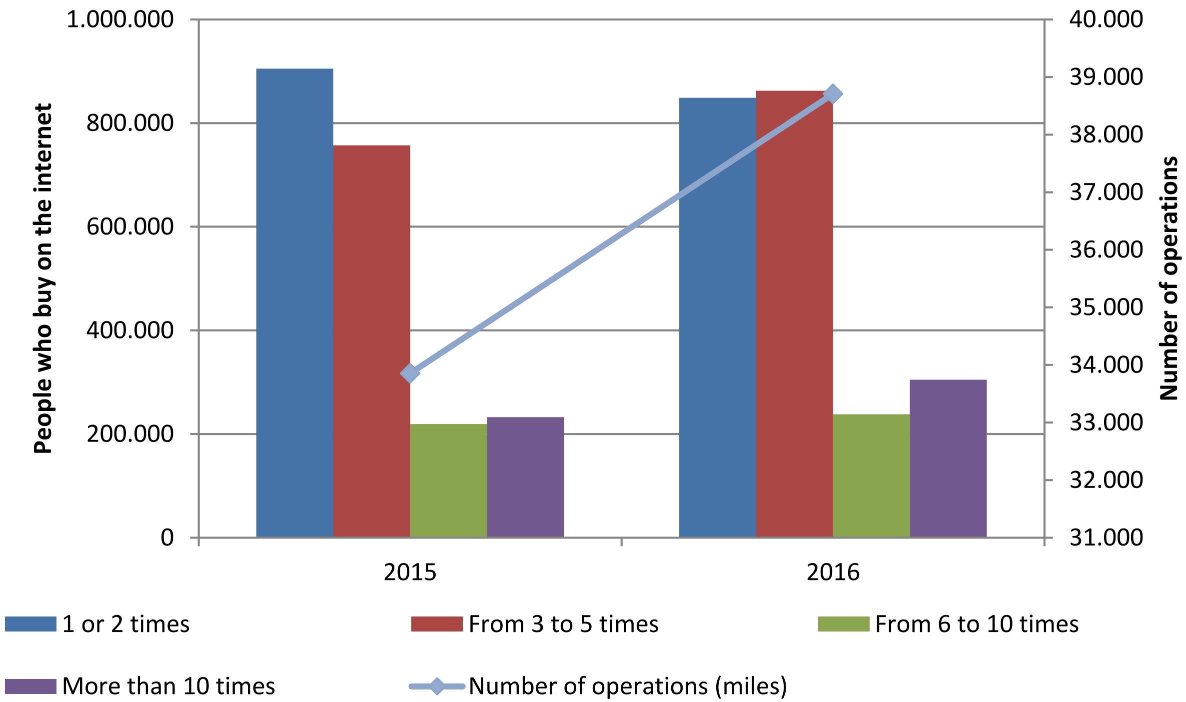
Urban logistics

- **Transport and mobility in the urban areas** has become one of the outstanding subjects of the cities, having to reconcile the reduction of the use of private transport with the distribution of last mile, analyzed for the first time in the Observatory.
- The increase of the **e-commerce** is directly related to the increase of commercial transport in urban areas. In 2016, more than 30% of the Catalan population made an online purchase, 14% more than the previous year. It is estimated that the total was at least of 38,7 million internet purchase operations.
- The urban freight transport represents about **the 21% of the total traffic of the city of Barcelona**., representing 435.000 daily displacements the year 2015.
- For the first time a **sectorial survey** is included to know the point of view of the distributors of the qualitative tendency of the sector.

New Number of e-commerce operations in Catalonia

- **There is a substantial growth on the number of times** each person buys on the internet the last 3 months, showing the users' fidelity to this kind of commerce.

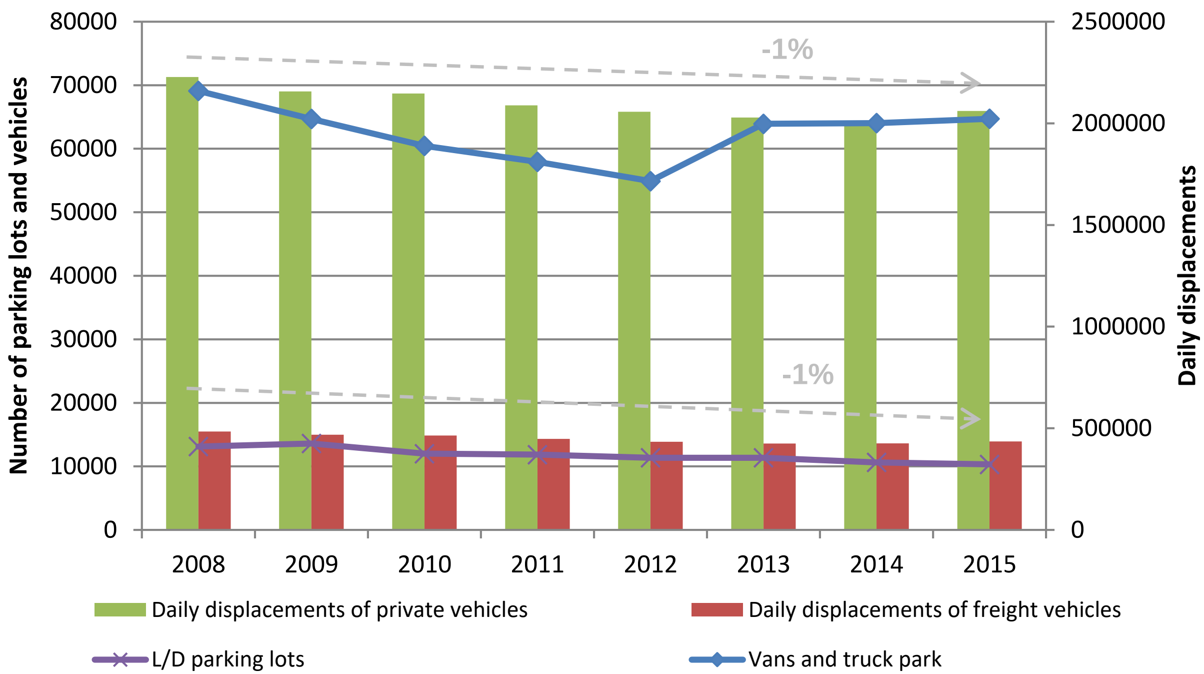


Number of buying operations on the internet	
2016	Δ 15-16
38.707	14%

Source: Elaborated from data of Idescat

New Trips share for freight vehicles in Barcelona

- **The urban freight displacements share** through the study series (2008-2015) presents a constant **value of 21%**.
- The number of daily displacements presents an annual decline of -1%.



Load/Download parking lots in Barcelona	
2016	**Δ 14-15**
10.319	+2,2%

Advanced data of AreaDUM demand (2015-2016)

Registered users **(+42%)**

Times used **(+290%)**

Source: Elaborated from data of Ajuntament de Barcelona

New Tendency sectorial survey: Urban Freight Distribution

Night delivery

- As a solution to **daytime congestion*** with the following barriers:
  - Ajuntament de Barcelona licenses
  - **Noise** problem
  - **Conciliation** with delivery/reception time

*except for the merchandise of the **food and pharmaceutical sector:** specific requirements of temperature control and traceability

Load and download parking lots

- The main identified problem is associated with the a **inappropriate use** of drivers (specially the non professional).
- Adaptation of the size of the spaces according to the type of package to be distributed
  - Small vehicle: **covered**.
  - Heavy vehicles: lack in number of parking lots and in relation to parking time.
- **AreaDUM APP:** Demand for improvements in its use and new features.
  - NFC tecnology, voice control, available parking lots...

New Tendency sectorial survey: Urban Freight Distribution

Sustainable fleet (electric and VNG)

- As points that slow down/are dissuasive for its implantation:
  - **Lack of grants for the renewal** of the mobile park for freight transport**.**
  - **Insufficient network of supply points for alternative fuels (both NGV and electric)**
- **Feeling of uncertainty** regarding the Administration commitment to the future**: demand for more defined legislative lines.**

Microplatforms

- As an effective last-mile distribution model with multiple benefits:
  - Make the most of **resources**, saving **costs** → more competitive market price
  - **Decongestion** of the volume of vehicles in the city.
  - Improvement on the time of provision (more deliveries gathered on the same area).

*except for the companies dedicated to **large consumption sector** and to the **food and pharmaceutical sector:** specific requirements for constant temperature control and traceability → opt for the efficiency in terms off planning routes, schedules and vehicles.

New

Tendency sectorial survey: Urban Freight Distribution

Sustainability of the corrent model

- Suppression of free shipments to reduce the volume of deliveries at home:
  - **The user does not agglutinate orders**
  - **High percentage of failed deliveries** (no notice in the event of absence in the agreed window)
- Divergence of the short-term tendency delivery model (at home/collection points)
  - Opt for coexistence between both models (50% surveyed).
  - Opt for home delivery: prioritization of comfort and importance in time (25% of respondents).
  - Opt for collection at points where the user has to move (25% remaining).

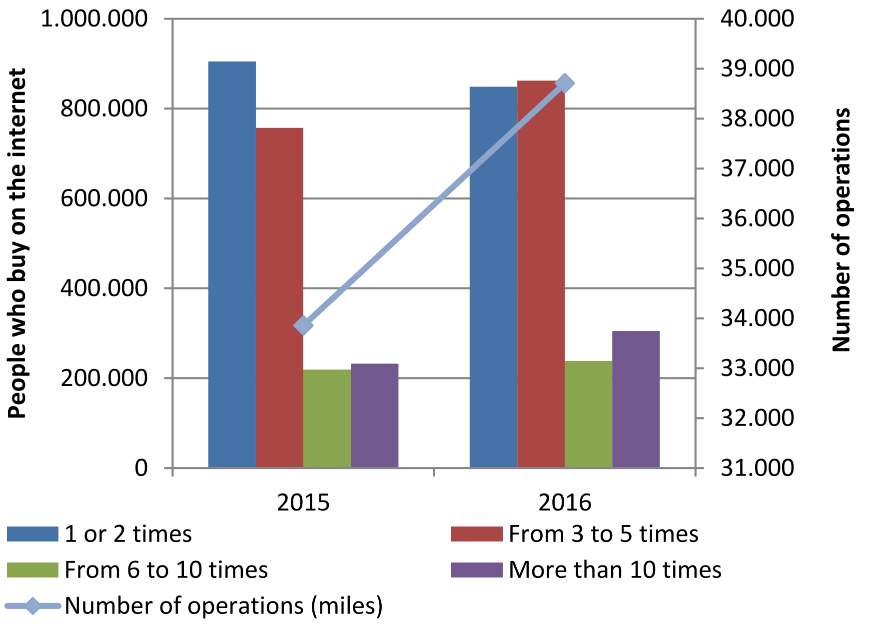
Alignment of the Administration with the logistics operators

- Generalized demand for **more fluid communication** and more **channels for dialogue** to find solutions and joint aligned responses (need for a model change).
- Concerning the problem from **partisan optics.**
- Demand for **normalization and harmonization in the territory**: planning regulations globally.

New Urban logistics: Statistical annex

VI. URBAN LOGISTICS

- **VI.1. – Number of people according to demographic characteristics and number of purchases made on-line**
- **VI.2. – Number of stages of movement of freight vehicles and private transport**
- **VI.3. – Sector trend survey: Distribution of goods**



CIMALSA
Centres logístics
de Catalunya

Generalitat de Catalunya
Departament de Territori i Sostenibilitat

Thank you!

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Observatori de la Logística

Institut Cerdà