

## The Logistics Observatory

Indicators of competitiveness for the Catalan  
Logistics system (11st edition)

+ Advanced data for 2016

July 2016





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## 1. Introduction

## 2. Socioeconomic context

## 3. Infrastructure supply

## 4. Supply and Demand

## 5. Logistics real estate market

## 6. Efficiency

## 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.**

## Introduction

### DOCUMENT STRUCTURE

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

- ☒ Document body : 41 indicators.
- ☒ Statistical annex: more than 60 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.- Summary table of indicators



## NOVETAT

### INDICADOR 1: PES ECONÒMIC DE LA LOGÍSTICA A L'ECONOMIA CATALANA

#### DEFINICIÓ

Percentatge que representa el valor afegit brut (VAB) del sector de la logística respecte el PIB de Catalunya.

#### MOTIVACIÓ

Es considera rellevant disposar d'una sèrie històrica del pes específic del sector de la logística a l'economia catalana amb l'objectiu de posar de manifest l'evolució de la importància del sector dins de l'activitat econòmica catalana.

#### METODOLOGIA

Per al càlcul del pes de la logística a l'economia, es parteix d'una metodologia emprada a diversos països europeus basada en l'establiment de tres escenaris (bàsic, mig i extens) caracteritzats segons l'abast dels codis d'activitat CCAE-2009 que es consideren compresos dins del sector.

**Escenari bàsic:** comprèn les divisions corresponents a Transport de mercaderies<sup>1</sup> (grups 494, 495 i divisions 50 i 51), Emmagatzematge i activitats afins al transport (grups 521, 522) i Activitats postals i de correus (divisió 53). Veure amb més detall a l'annex I.1.

**Escenari mig:** comprèn les activitats de l'escenari bàsic més les de la divisió de Comerç engròs i Intermediaris (exc. vehicles motor) (divisió 46). Veure detall a l'annex I.1.

**Escenari extens:** comprèn les activitats de l'escenari mig més les de la divisió de Comerç al detall (exc. vehicles motor i motocicletes) (divisió 47). Veure detall a l'annex I.1.

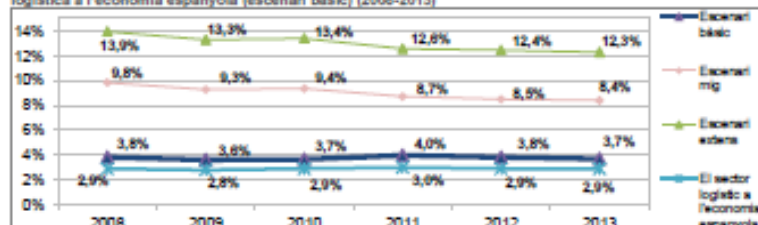
En base a les dades que es proporcionen a l'Enquesta Anual de Serveis (Idescat, 2016a), amb dades disponibles fins 2013, s'obté la desagregació dels VAB dels codis d'activitat CCAE 2009 compresos en els tres escenaris establerts anteriorment pel sector de la logística.

#### EVOLUCIÓ

Taula I.1.1. Pes econòmic del sector logístic a l'economia catalana segons escenaris en percentatge (2008-2013)

	2008	2009	2010	2011	2012	2013	Δ 12-13	Δ Interanual
Escenari bàsic	3,8%	3,6%	3,7%	4,0%	3,8%	3,7%	-3,5%	-0,7%
Escenari mig	9,8%	9,3%	9,4%	8,7%	8,5%	8,4%	-1,1%	-3,1%
Escenari extens	13,9%	13,3%	13,4%	12,8%	12,4%	12,3%	-1,3%	-2,5%

Figura I.1.1. Pes econòmic del sector logístic a l'economia catalana segons els tres escenaris i pes de la logística a l'economia espanyola (escenari bàsic) (2008-2013)



<sup>1</sup> En referència al transport ferroviari, no es troba incorporat a l'indicador donat que no existeix el grau de precisió que pugui diferenciar l'activitat de mercaderies i de passatgers.

## ANÀLISI DE TENDÈNCIA

A l'any 2013 (veure taula I.1.1) la forquilla de valors del pes econòmic de la logística a Catalunya se situa entre el 3,7%-12,3%. Per l'escenari bàsic en el que es considera rigorosament les activitats de transport i afins i activitats postals i de correu, aquest valor del 3,7% representa un 3,5% menys que l'any anterior (2012). Pel que fa a l'escenari extens, on es contemplen no només les activitats de transport sinó també les del comerç a l'engròs i al detall, presenta una quota del 12,3% representant una lleugera disminució del 1,3% respecte la quota de l'any 2012.

Pel període d'estudi (2008-2013) (veure figura I.1.1) es constata una tendència de decreixement sostinguda i palpable als tres escenaris presentats amb una disminució interanual del 0,7% per l'escenari I del 2,5% per l'escenari extens.

En comparació amb les dades a nivell estatal (Ministerio de Fomento, 2015a) (veure taula I.1.2), al llarg de tota la sèrie d'estudi el pes de la logística al conjunt de l'economia catalana (dades de l'escenari bàsic) se situa un punt per sobre de la mitjana estatal.

Taula I.1.2. Dades del sector logístic a Catalunya (per escenari bàsic) (2008-2013)

Dades complementàries	2008	2009	2010	2011	2012	2013	Δ 12-13	Δ Interanual
VAB sector logístic (M€)	7.679	7.100	7.096	7.741	7.244	6.926	-4,4%	-2,0%
PIB sector serveis (M€)	135.472	136.470	137.600	140.170	139.775	139.562	-0,2%	0,6%
Pes econòmic del sector logístic a l'economia espanyola	2,9%	2,8%	2,9%	3,0%	2,9%	2,9%	0,0%	0,0%

## FONTS D'INFORMACIÓ

Idescat (Institut d'Estadística de Catalunya) (2016a): *Enquesta anual de serveis. Selecció d'agrupació, branca o subbranca*. Disponible a: <http://www.idescat.cat/eas/> <consultat el gener de 2016>.

Idescat (Institut d'Estadística de Catalunya) (2016b): *Índex d'activitat del sector serveis -IASS-*. Disponible a: <http://www.idescat.cat/economia/inec7/c-3&id=0304&dt=201504&x=9&y=4> <consultat a l'abril de 2016>.

Ministerio de Fomento (2016a): *Observatorio del Transporte y la Logística en España. Informe anual 2015*. Disponible a: [http://observatoriodeltransporte.fomento.es/NR/rdonlyres/0AE639CF-9E0D-46F3-A27C-88B14AC37715/136237/INFORME\\_OTLE\\_2015.pdf](http://observatoriodeltransporte.fomento.es/NR/rdonlyres/0AE639CF-9E0D-46F3-A27C-88B14AC37715/136237/INFORME_OTLE_2015.pdf) <consultat l'abril de 2016>.

## ANNEXES RELACIONATS AMB L'INDICADOR

### Informació estadística de referència

- I.1.- Definició d'escenaris del pes econòmic de la logística.
- I.2.- Evolució del PIB de Catalunya a preus corrents per sectors.
- I.3.- Evolució del PIB de Catalunya a preus constants (Base 2008).
- I.5.- Estimació de l'evolució del sector logístic i del transport.

### Informació estadística complementària

- I.4.- Evolució del PIB d'Espanya a preus constants (base 2000).

## 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 from the Ports, statistical data provided by Aena, Census data from sectorial magazines and logistics platforms (Alimarket)).
- **Contrasting the primary results with experts from the various specialized areas within the sector.**



## Introduction: OBSERVATORY NEWS FOR THE 2016 EDITION

- ✓ Inclusion of PIMEC in the contrast table.
- ✓ Going forward in the **study, evaluation and definition** of new indicators, reorientating the necessary ones in order to offer a **global vision of the Catalan logistics system**.

### NEW LINES OF STUDY



Weight of the autonomous employees (transport and storage)



Taxes related to the high-capacity road network (tolls)



Supply points for vehicular natural gas (VNG)



Evolution in the number of enrolments by fuel type and maximum load



Automotive fuel consumption



Study of intermodality in the maritime transport

- ✓ + Disaggregated data by **provinces**.
- ✓ + Advanced data for **2016**.





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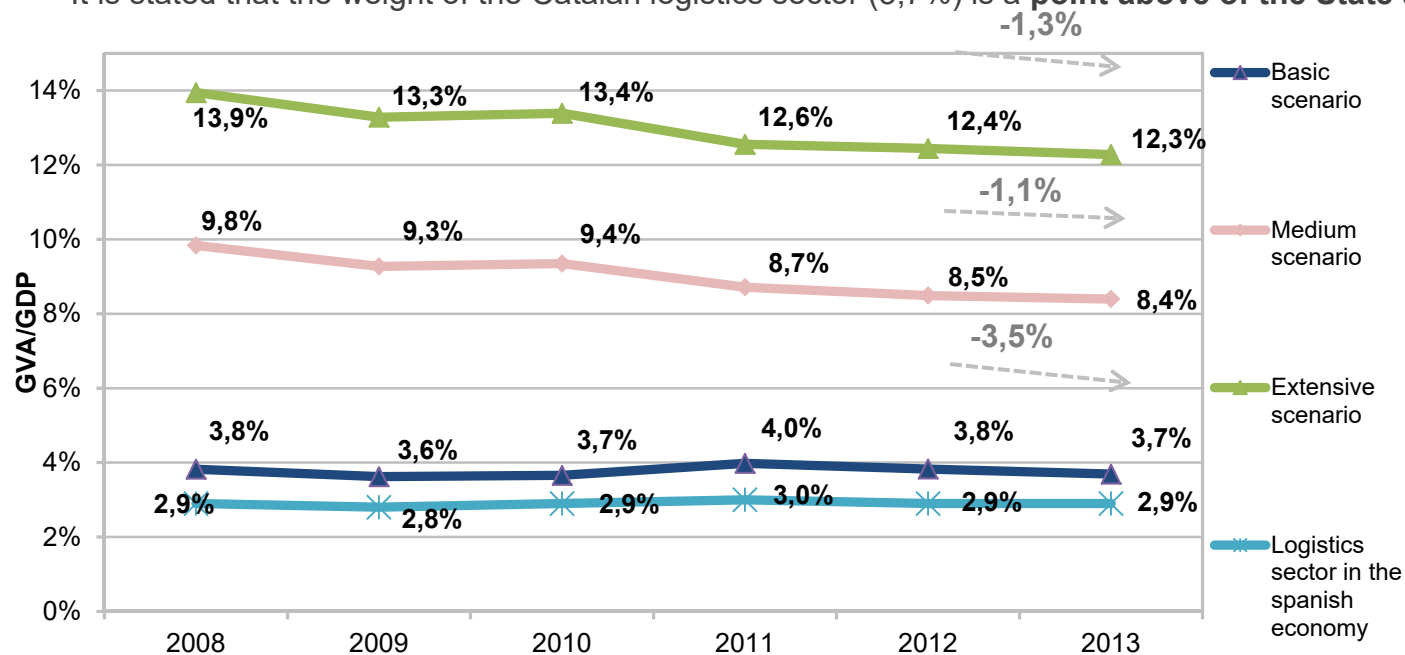


## Socioeconomic context

- Regarding the scope of the logistics sector definition and according to the activity codes CCAE-2009, **three scenarios are distinguished for the first time in this edition** 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%, 8,4% and 12,3% respectively registered for 2013.
- In 2015 a **decrease of 16% compared to 2014 in the number of unemployed in the logistics sector was registered**, foreseeing a consequent reactivation in the importance of the sector for the Catalan economy.
- **The total number of affiliates in autonomous regime assumed in 2015 a percentage of 26%** over the total affiliates, value which means 4 points below the percentage of autonomous in all sectors in Catalonia.
- **The Catalan trade balance** in the last biennium (2014-2015) tends to increase its difference between the economic value of exportations and importations, being **negative in 2015** (-12.990 millions of euros).
- **Between 2013 and 2015 the GDP value in constant prices is reactivated as well as the total volume of freights**, increasing in **2,7%** and **7,4%** respectively compared to 2013.

## New Economic weight of the logistics sector in the Catalan economy

- The **economic weight** of the Catalan logistic sector is quantified in 2013 between **3,7% and 12,3%** depending on the studied scenario.
- A **slightly decreasing tendency** has been registered for the three scenarios if the values are compared to the ones registered in 2012.
- It is stated that the weight of the Catalan logistics sector (3,7%) is a **point above of the State average** (2,9%).



Source: Elaborated from data of Idescat and Ministerio de Fomento

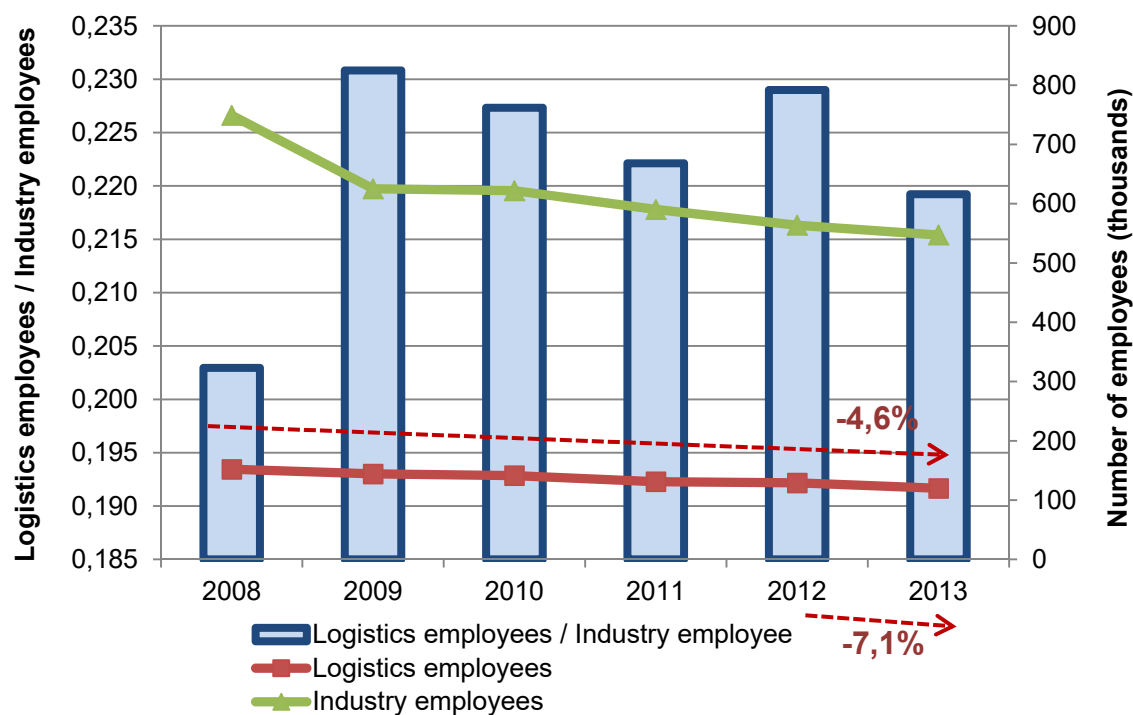
### Contribution of the logistics activities in the Catalan economy (2013)

GVA logistics activities	5%
Intermediate consumption	7,4%
<b>Total</b>	<b>12,43%</b>

Source: PIMEC Logistics (2016): 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 2008-2013, with a **global growth of a 1,6%**, despite the recession of a **-4,3%** between **2012 and 2013**.



### Advanced data for 2014 and 2015

Ratio employees of the logistics sector regarding the industry sector about **0,22 (2014)** and **0,21 (2015)**.

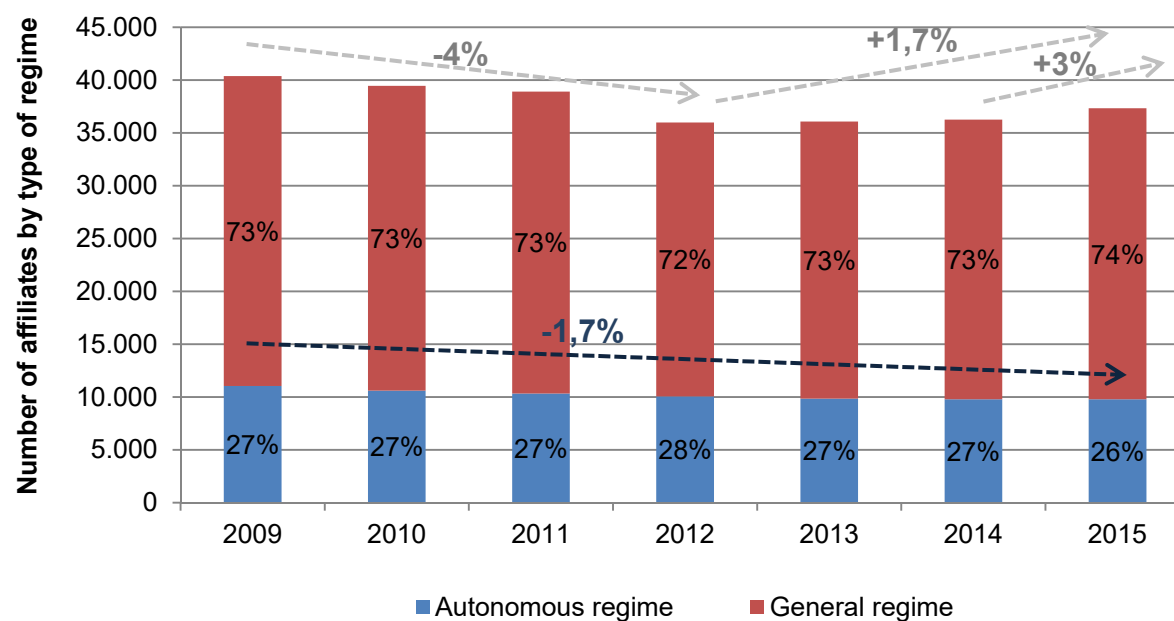
**120.472 employees** in the logistics sector in 2014 and **120.973** in 2015



New

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

- The affiliated amount of employees in autonomous regime represents 26% (2015) of the total number of affiliates.
- The autonomous share in the transport and storage sector is above the average represented by all the activity sectors (22,4%).



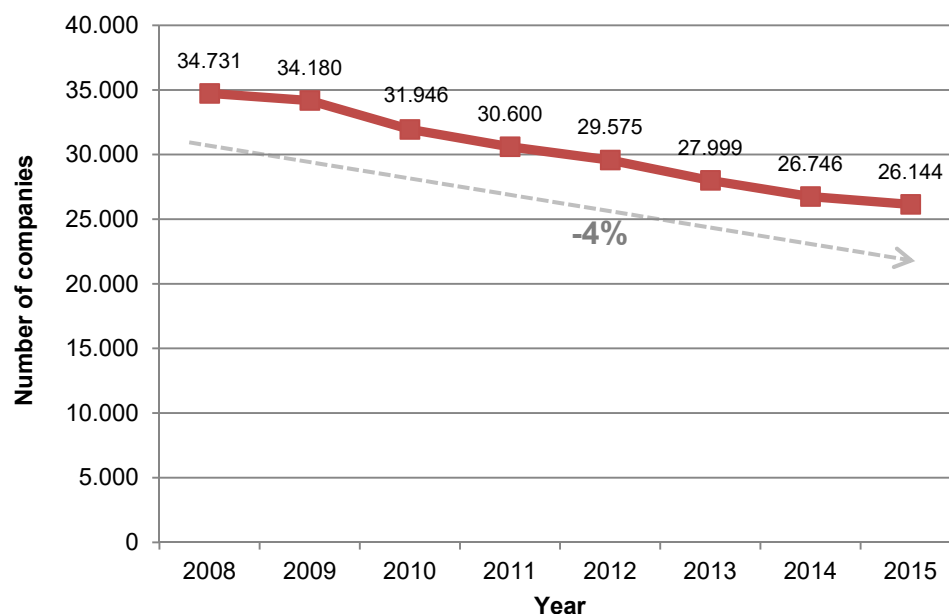
Source: Elaborated from data of Ministerio de Empleo and Seguridad Social (2016)

### Percentage of autonomous in all sectors

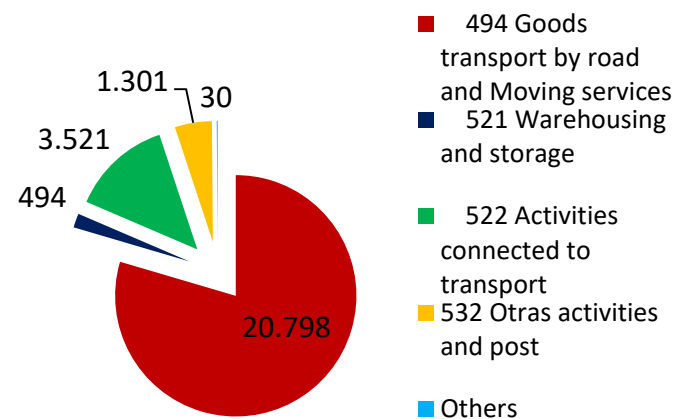
2014	22,8%
2015	22,4%

## Evolution of the number of active logistic companies

- A reduction of a 4% is observed in the number of logistics active companies in the period **2008-2015**.
- There are a total of **26.144 active logistic companies** in Catalonia (2015), highlighting the group **Goods transport and moving services (80% about the total Catalan logistics active companies)**.



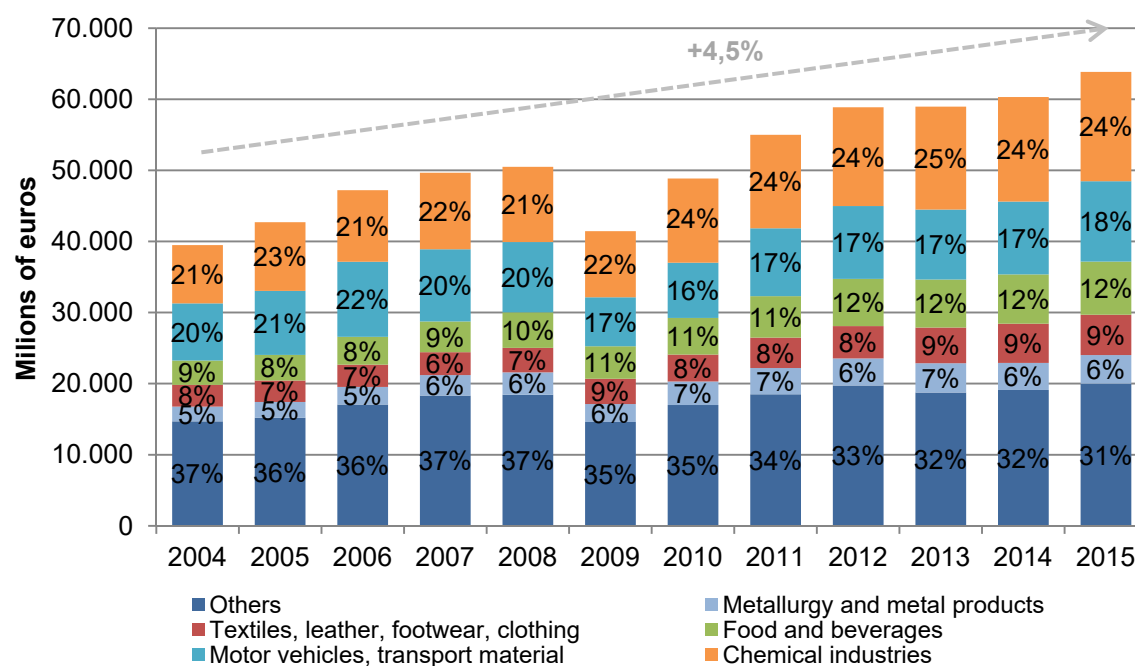
**Distribution of logistics companies in Catalonia (2015)**



Source: Elaborated from data of INE

## Economic value of the exportations

- **Increasing tendency** on the economic value of the Catalan exportations started in 2004 and presenting an accumulative positive variation of **4,5%**, in spite of the **decrease** between **2008-2009** (-18%).
- **By sectors**, it is worth highlighting the category corresponding to **chemical industry as well as motor vehicles and transport equipment**.



Source: Elaborated from data of Idescat

### Advanced data for 2016

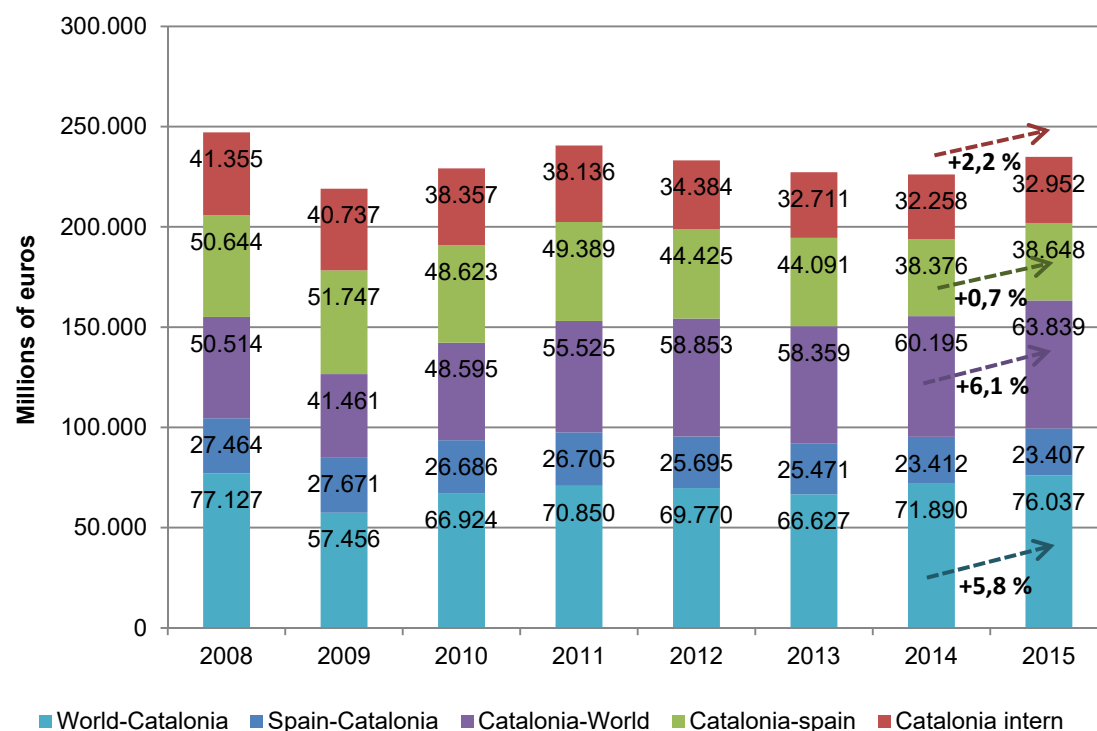
Total amount of the exportations in Catalonia registered in March 2016: **5.695,7M€.**

Total registered in Spain in March 2016: **22.443,1M€**



## Economic value of the exchanges with the State

- In the period 2008-2015 the **Catalan exports** to the **rest of the world** have increase about 3,4%, reaching a share of a **47%** regarding the economic value of the effective production.



Source: Elaborated from data of CEPREDE

### Economic value of the effective production (58%)

Typology	2015	Δ annual
Intern	24%	-3,2%
Catalonia-Spain	29%	-3,8%
Catalonia-World	47%	+3,4%

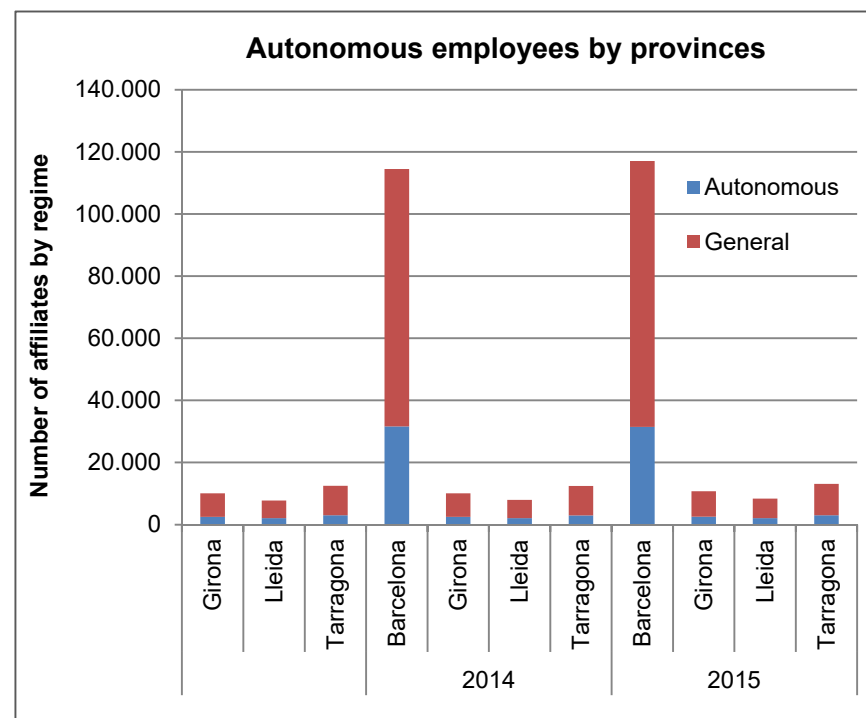
### Economic value of the importations (42%)

Typology	2015	Δ annual
Spain-Catalonia	24%	-2,3%
World-Catalonia	76%	-0,2%

## Socioeconomic context: Statistical annex

### I. SOCIOECONOMIC CONTEXT

- I.1. – Scenario definitions of the economic weight of logistics sector
- 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)
- I.4. – Evolution of the Spanish GDP in fixed prices (2000 basis)
- I.5. – Estimation of logistics and transport sector growth
- I.6. – Number of employees by sectors in Catalonia
- I.7. – Autonomous employees in Catalonia by provinces
- I.8. – Number of employees per company in European countries
- I.9. – Consumer price index of Catalonia and Spain over time
- I.10. - Importations and exportations of Catalonia by areas and countries
- I.11. – Importations and exportations of Spain by areas and countries
- I.12. – Importations and exportations of Catalonia by sectors
- I.13. – Trade balance of Catalonia
- I.14. – Trade balance of Spain
- I.15. – Population growth of Catalonia





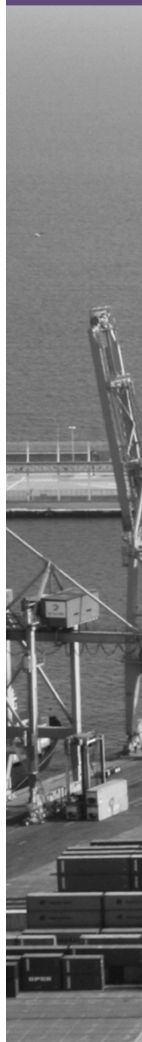
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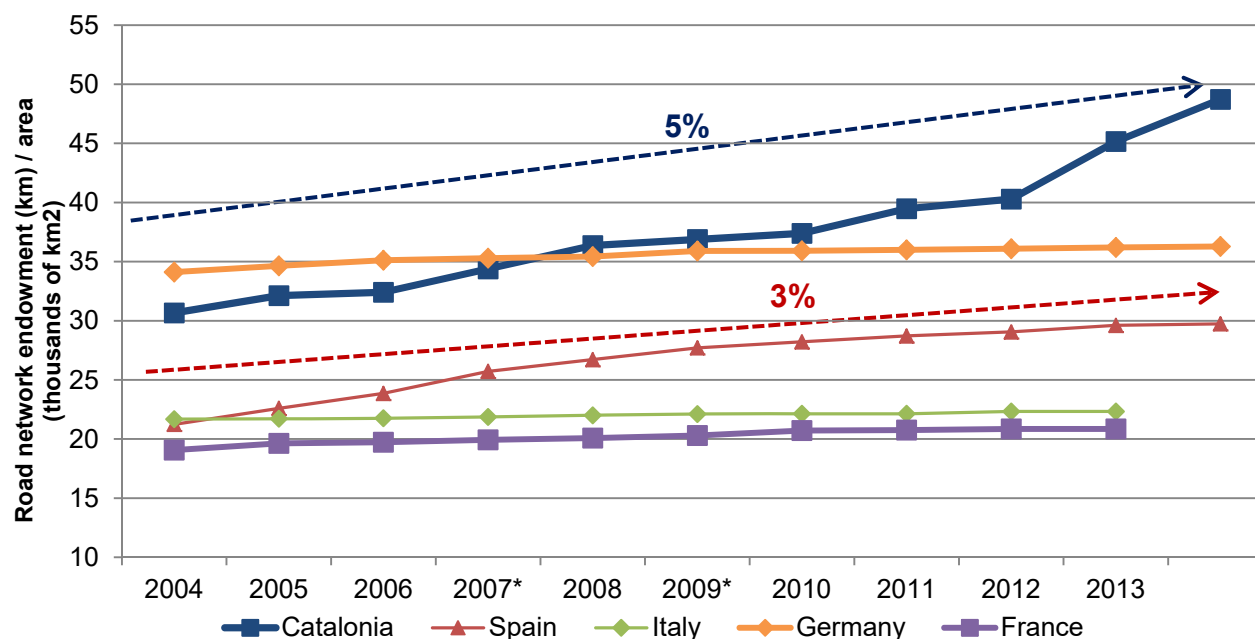
## Infrastructural supply

- **Catalonia is still the most meshed territory in terms of road and rail infrastructure.** In terms of road infrastructure the supply of 4 or more lanes presented a ratio of **48,7 km of road network per thousand square kilometre in 2014**. For its part, the provision of the Catalan rail infrastructure per area unit was **54,4 km/thousand-km<sup>2</sup>**. By contrast, in relation to the population, Spain leads the ranking of rail and road infrastructure provision per million inhabitant.
- 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 **41% in 2014**. 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 5% in the period 2008-2014.**
- In 2015, regarding maritime infrastructure transport, **the road remained as the principal access modus in the Port of Barcelona, with a share of 86%**. Whereas the pipeline transport is the modus most used in the Port of Tarragona, with a share of the **71%**. In the last year (2015) the rail access share in the Barcelona Harbour has slightly increased, in a value close to a 1% compared to 2014.



## Road infrastructure provision

- Catalonia presents a positive development of an 8% compared to 2014, reinforcing 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 (2004-2014) is **crescent**, with a clear **Catalan dominance** growth in regard to the Spain growth, specially from 2013. The **annual growths** are about **5%** and **3%** respectively.
- Spain** leads the ratio of road infrastructure endowment per million of inhabitants (**321,7 km/million-inhabitant**).

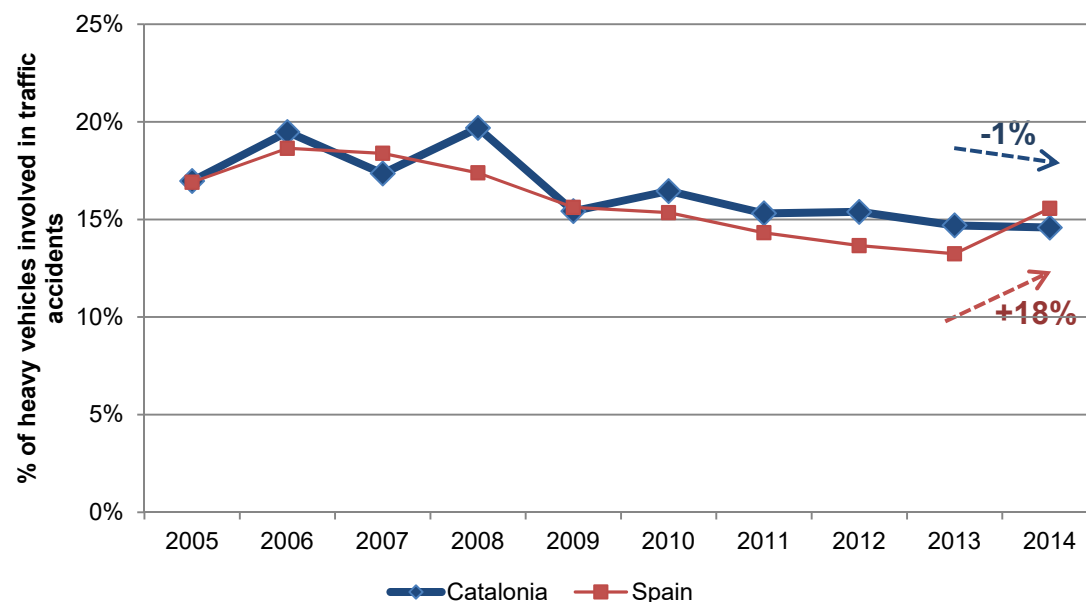


Source: Elaborated from data of Idescat, INE and Statistisches Bundesamt (Alemania)

Km/population	2014
Catalonia	207,9
Spain	321,7
Germany	160,32

## Evolution of the traffic accidents rate involving heavy vehicles

- The involvement of freight vehicles in traffic accidents in **Catalonia** has **slightly declined** in the biennium 2013-2014 (**-0,8%**), stabilizing the series. **In Spain** the tendency has been the opposite, with a **growth of a 17,6%**.
- In both cases it is found a **downward tendency throughout the study series (2005-2014)**.



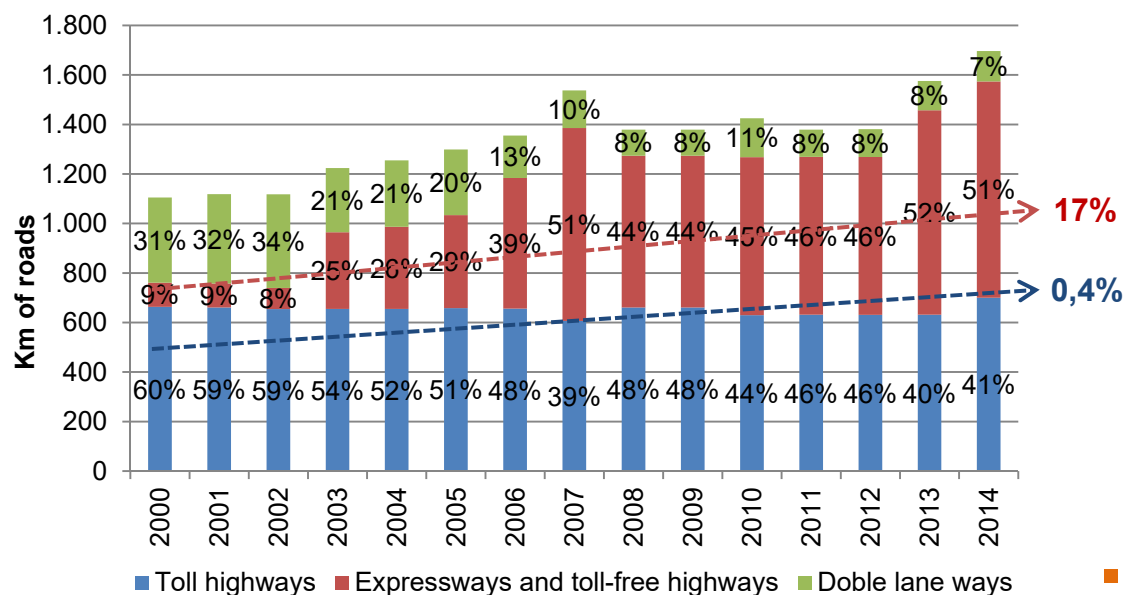
		2014	Δ 13-14
Traffic accidents with victims	Catalonia	23.828	0,0%
	Spain	91.570	2,3%
Total freight vehicles involved	Catalonia	3.475	-0,8%
	Spain	14.257	20,3%

Source: Elaborated from data of DGT and Generalitat de Catalunya



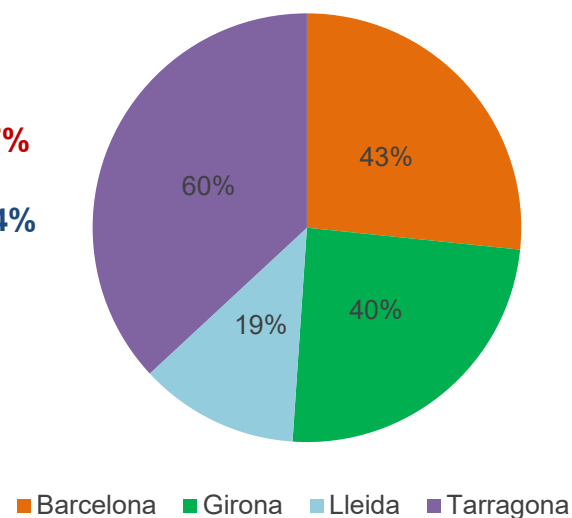
## New Proportion of toll roads in the high capacity road network

- Clear **dominance of the toll highways in Catalonia** until 2005. However, between 2003-2014 an increase regarding the number of **expressways and toll-free highways** is registered. Their **annual growth between 2000 and 2014 was of 17%**, while for toll highways was 0,4%.
- **Tarragona** stands out as the province with the highest percentage of toll roads.



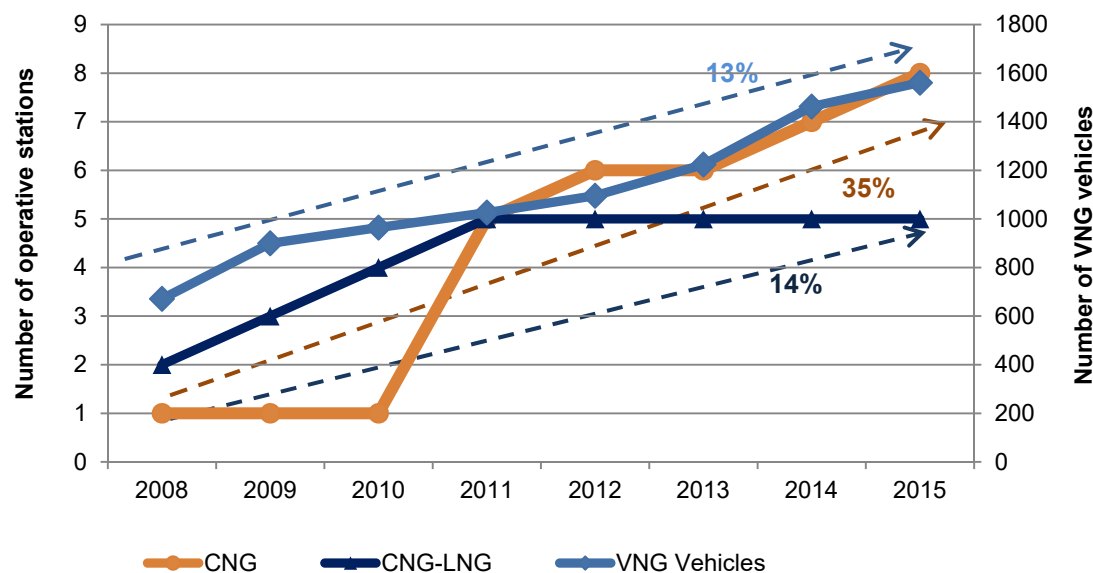
Source: Elaborated from data of Idescat and Ministerio de Fomento

% Toll highways by provinces



## New Network of points of vehicular natural gas supply

- **Stations of CNG: Continuous increase** which is emphasized between 2010 and 2015. An inter-annual growth share of **35%**.
- **Mixed stations (CNG-LNG): Stalemate** between 2011 and 2015. An inter-annual growth (2008-2015) of a 14%.
- **Park of natural gas vehicles: Growth mostly parallel to the evolution of the CNG stations** starting from 2011 until now (2015). An inter-annual growth of **13%**.



Source: Elaborated from data of GASNAM and ICAEN

### Advanced data for 2016

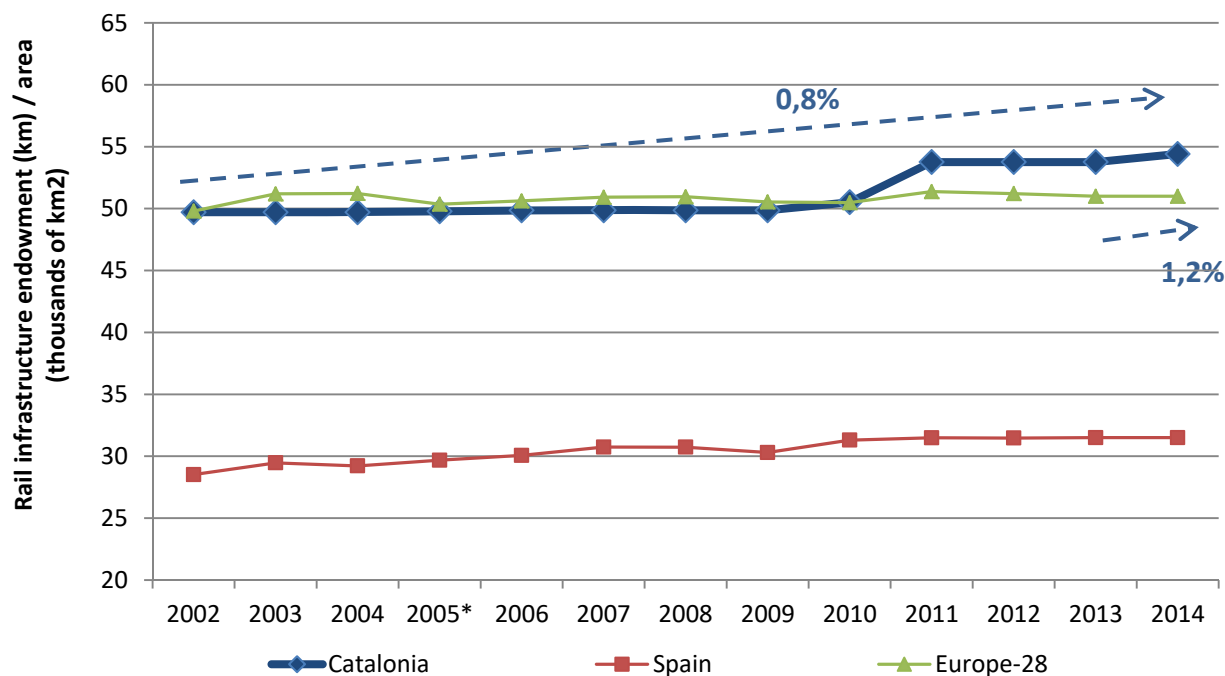
**+4** station projects provided in Catalonia.

**+2** open stations before the end of 2016 of CNG and mixed (CNG-LNG) in Barcelona:

- GNF-GROWSMARTER (GNF)
- GNF-PETRONIEVES (GNF)

## Rail infrastructure endowment

- Catalonia and Spain present an annual growth (2002-2014) of 0,8%, being the **endowment (km/km<sup>2</sup>)** in 2014 for **Catalonia 54,4** and constant for Spain since 2011 with a value of 31,5.
- The **Catalan rail infrastructure density** is located near the **European ratio of 51 km/km<sup>2</sup>**.

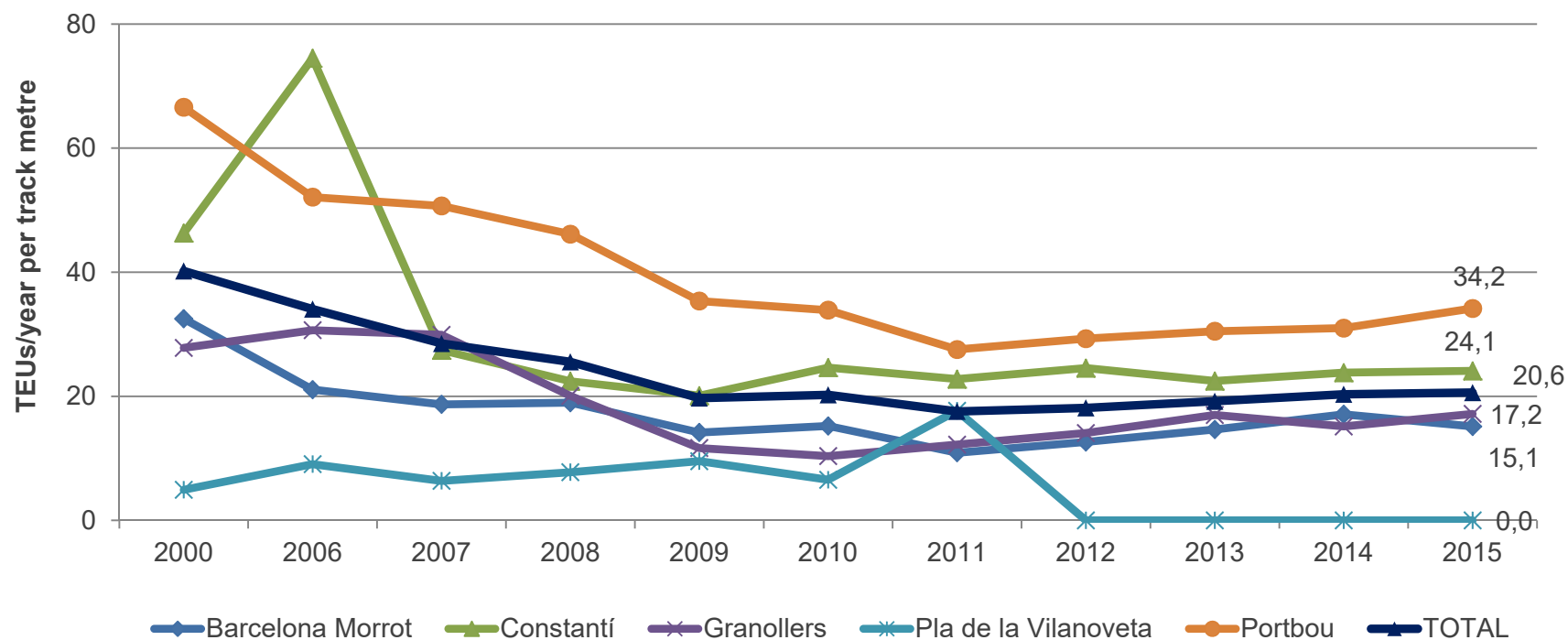


Km/population	2014
Catalonia	232,2
Spain	340,7
Germany	435,5

Source: Elaborated from data of Idescat, INE and Eurostat

## Performance in the intermodal terminals

- The performance in the intermodal terminals has increased its value since 2014, reaching the amount of **20,6 TEUs/any moved** per lineal metre of track during the exercise 2015 (+1,3% compared to 2014). However, the quantity is still far from the European average, close to 50 TEUs/year.

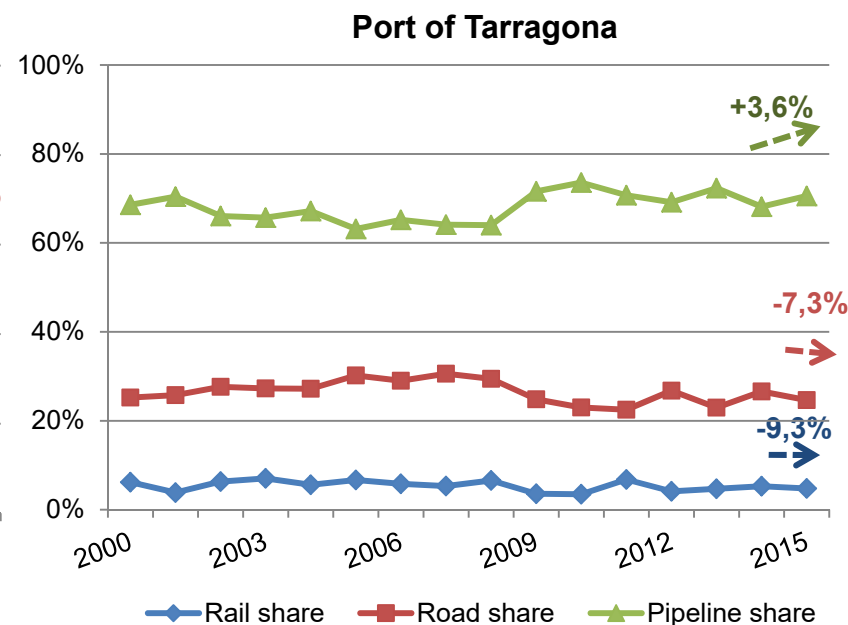
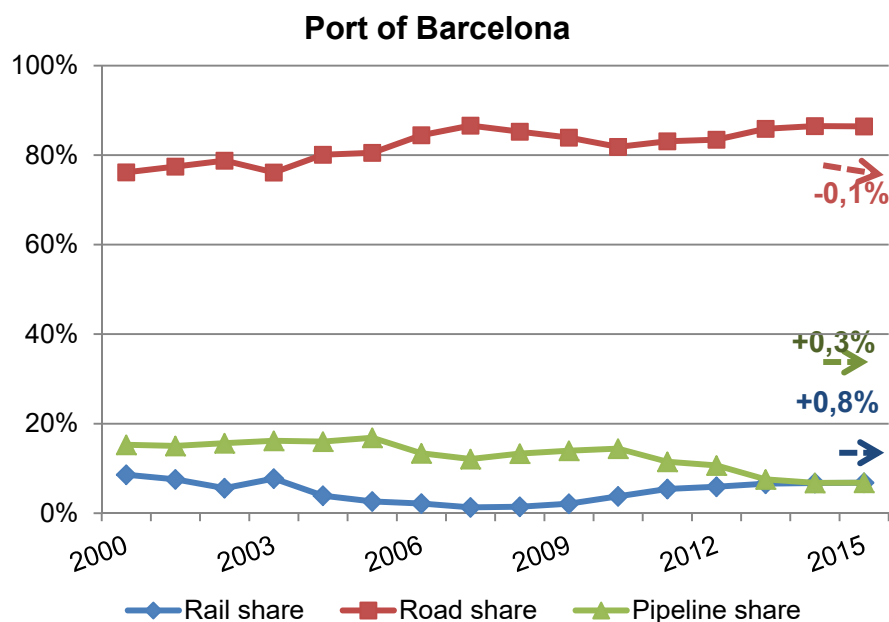


Source: Elaborated from data of Renfe



## Modal access and exit share in the Catalan harbours

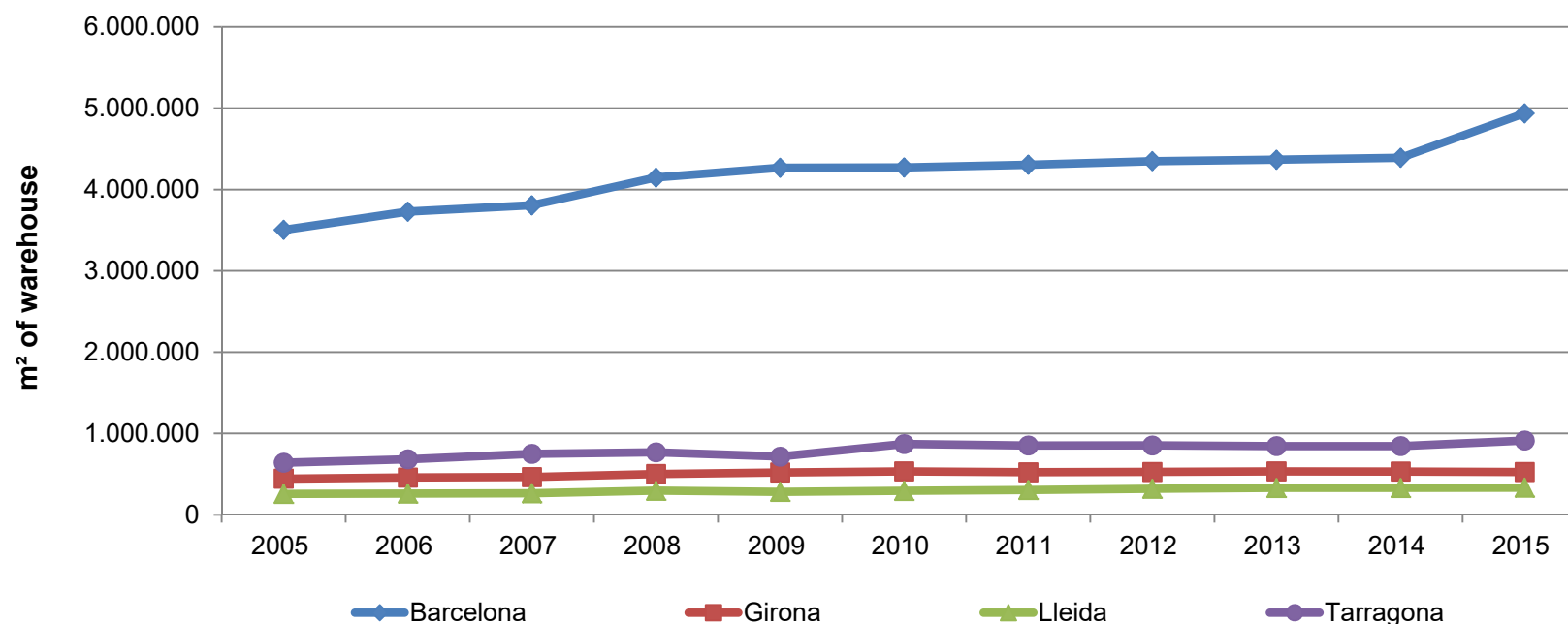
- The **distribution** of modal shares **remains stable** throughout the series.
- Port of Barcelona:** Dominance of the **road transport (86%)**. Growth of the rail share in a percentage of 0,8% (2014-2015).
- Port of Tarragona:** Dominance of the **pipeline transport (71%)**. Decrease in the rail share (-9,3%) and in the road share (-7,3%).



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

## Usable area of warehouse by provinces

- **Barcelona** leaders the m<sup>2</sup> of available area for logistics warehouse, whereas **Lleida** keeps the last position in the provincial ranking.
- The **accelerated growth in Barcelona** this last year (2015) is remarkable compared to 2014 (+12,4%).

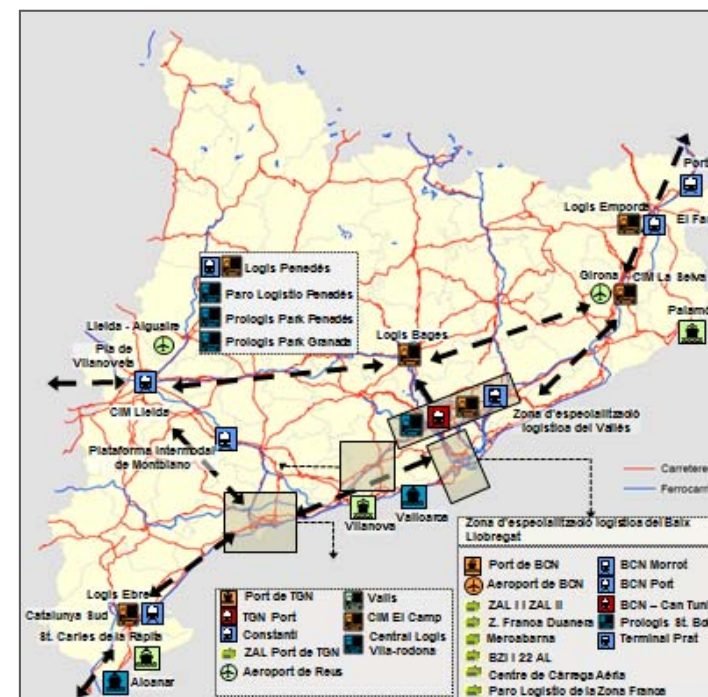


Source: Elaborated from data of Alimarket

## Infrastructural Supply: Statistical annex

### 2. INFRASTRUCTURAL SUPPLY

- II.1. – Traffic accidents rate in Catalonia and Spain
- II.2. – Map of the logistics platforms
- II.3 – Surface area for storage in Spain
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- II.6.- Proportion of toll roads in the high capacity road network in Catalonia by province





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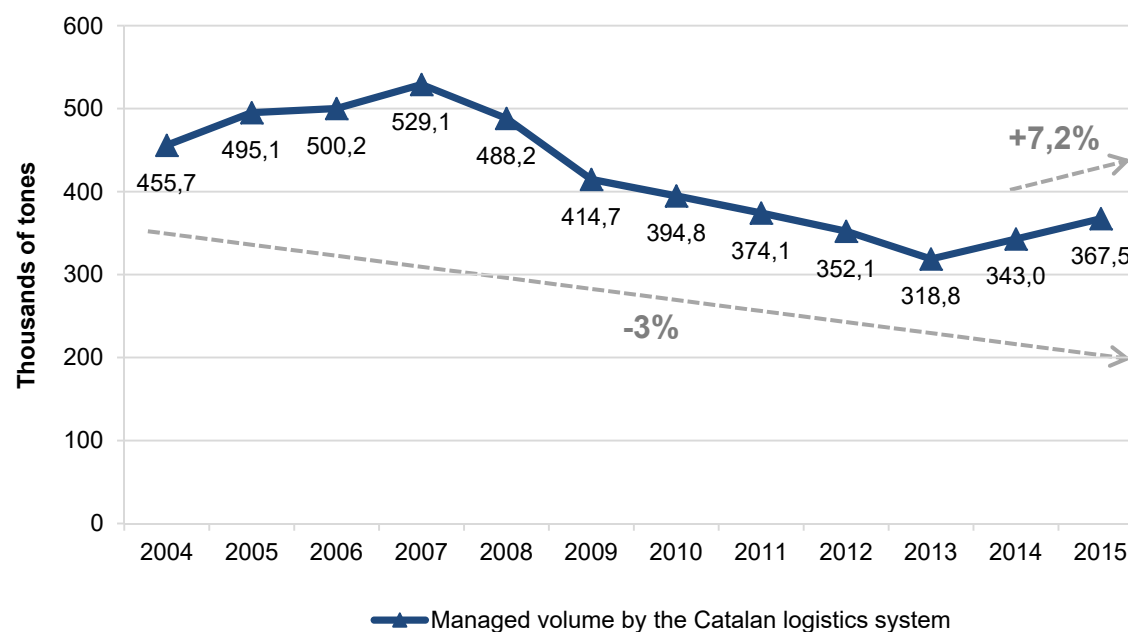


## Supply and Demand

- **During 2015 the total freight volume managed by the Catalan logistics system reached the amount of 367 millions of tons, consolidating the 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 11% between 2014 and 2015. According to the type of modes, road transport remained as the most used 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 (78 and 17% respectively), a reduction is confirmed in both consumptions through the studied series (2007-2015) in favour of alternative fuels. PLG consumption increases a percentage around 36% in the last biennium (2014-2015).**
- **In 2015, the participation of the rail mode in the Catalan logistics chain breaks with the recovering tendency started in 2010, with a fall of a 10% regarding 2014. Currently, its share in 2015 is about a 5,3% expressed in tons-km.**
- **It is included for the first time in this edition the Ro-Ro traffic evolution as a part of the intermodal maritime transport.** In fact, it has reached a total volume of 10,7 millions of tons in 2015.
- **The Catalan airport system during 2015 recorded an increase in the managed volume in terms of transported tones of a 18% compared to 2014 (117.315 moved tons).**

## Managed volume by the Catalan logistics system

- Regarding the volume managed expressed in tons by the Catalan logistics sector, it is observed that from 2013 on, the decreasing tendency perceived since 2007, changes to a period of positive growth. **The managed volume in 2015 increases the value stated in 2014 in a percentage of a 7,2%.**

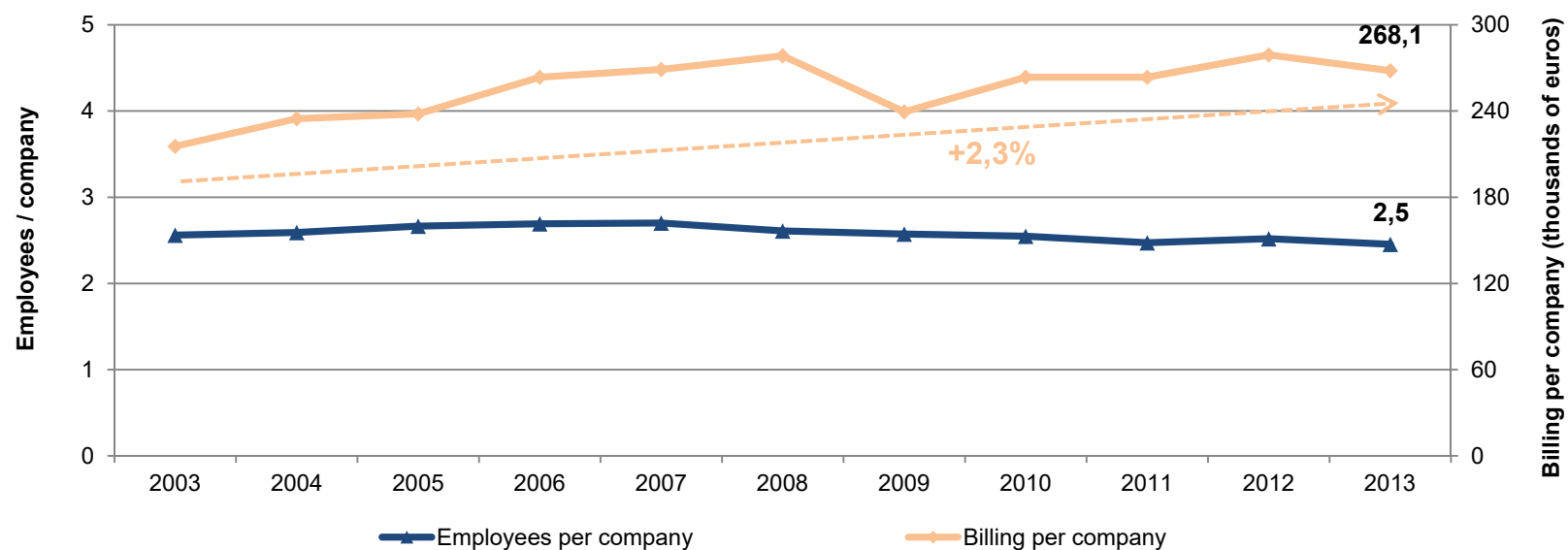


FLOW TYPE	2015	Δ 14-15
ROAD	75%	+9%
RAIL	2,5%	-3%
MARITIME	22%	+2%
AERIAL	0,5%	+14%
TOTAL	100%	+7%

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

## Business structure indicators

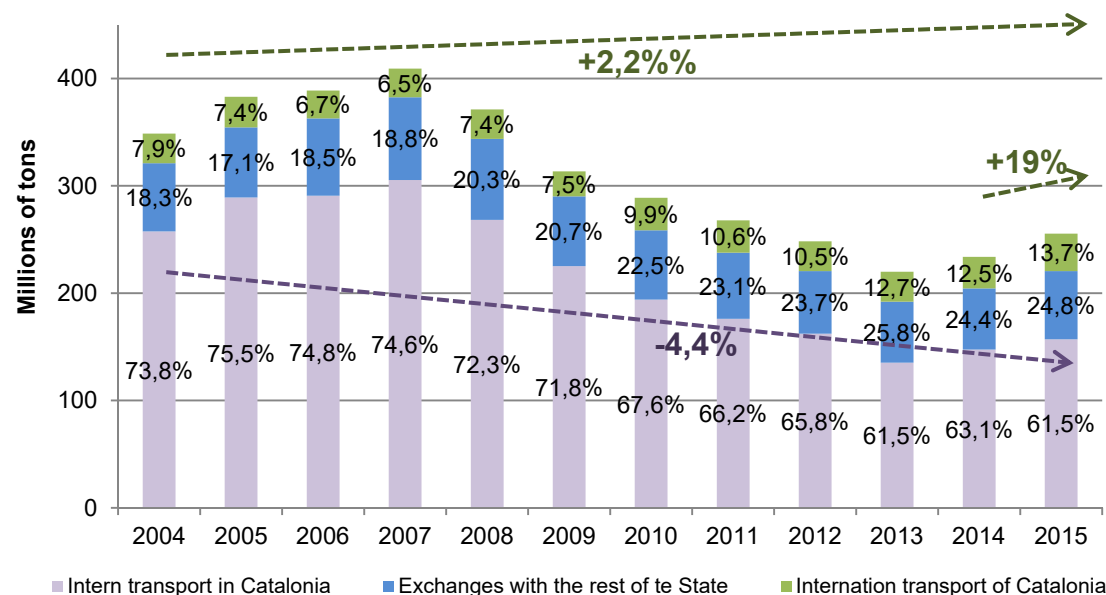
- From 2003 there is no record of significant changes regarding **the average number of employees per company in Catalonia, being this current share 2,5.**
- The Catalan average is located far away of the one of the principal European countries (**Germany 9,4 (2008), Belgium 7,6 (2008)**).
- **An annual increase of a 2,3% in the billing per company has been confirmed (2003-2013).** The last data billing in **Catalonia per company is 268,1 thousands of euros (2013).**



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 **255.479 millions of tons transported by road (2015) (+9,3% compared to 2014)**.
- Positive increment in all the studied types. The international road transport amount stands above the others (+19% about 2014).



Source: Elaborated from data of DGITM and Ministerio de Fomento

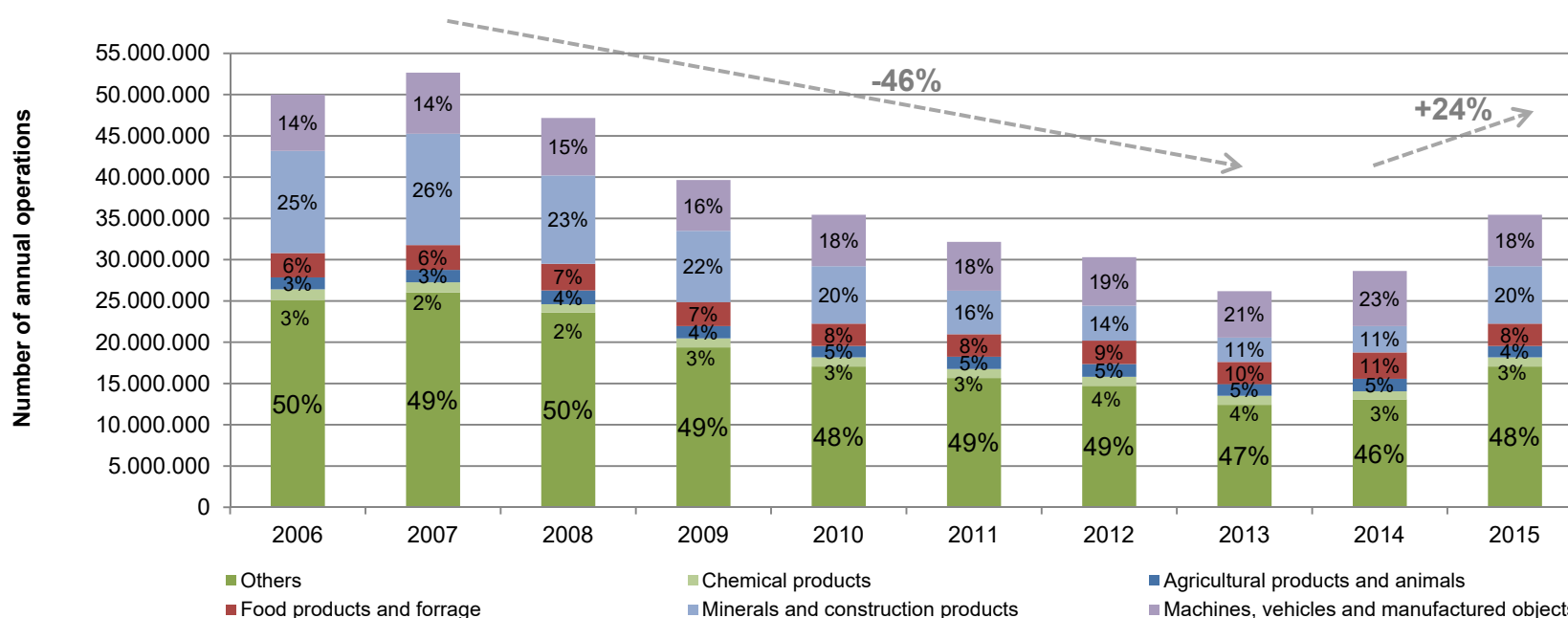
### Advanced data for 2016 (1T)

Decline in road flows 2,5%  
Interregional flows +12%

Intermodal transport	2015
Road-harbour transport (mT)	39.900
Rail-road transport (mT)	5.116
Road-air transport (mT)	117
TOTAL (mT)	45.133

## Operations by sectors

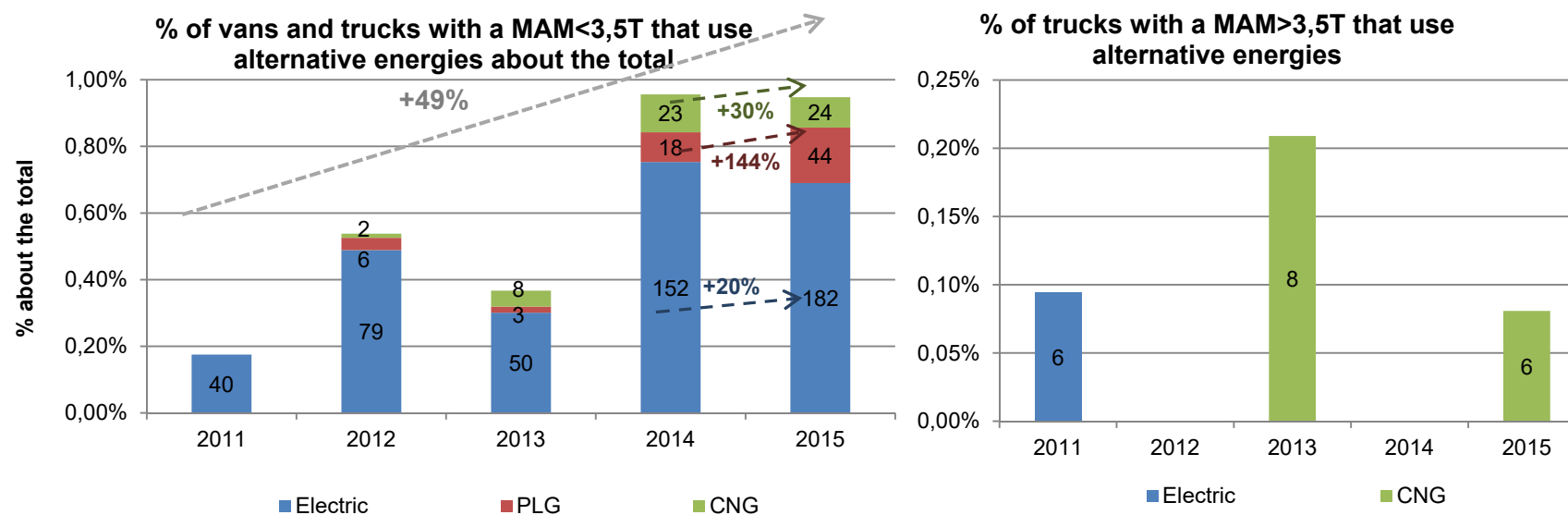
- **Decrease regarding the total number of operations since the economic crisis started by a share of 50%** (2008-2013). However, the current data (**2015**) shows a positive growth; an **increase of a 24%** compared to 2014.
- According to types of freight, **minerals and construction material** are strongly penalized by the economic crisis. They currently represent the **20%** of the total.





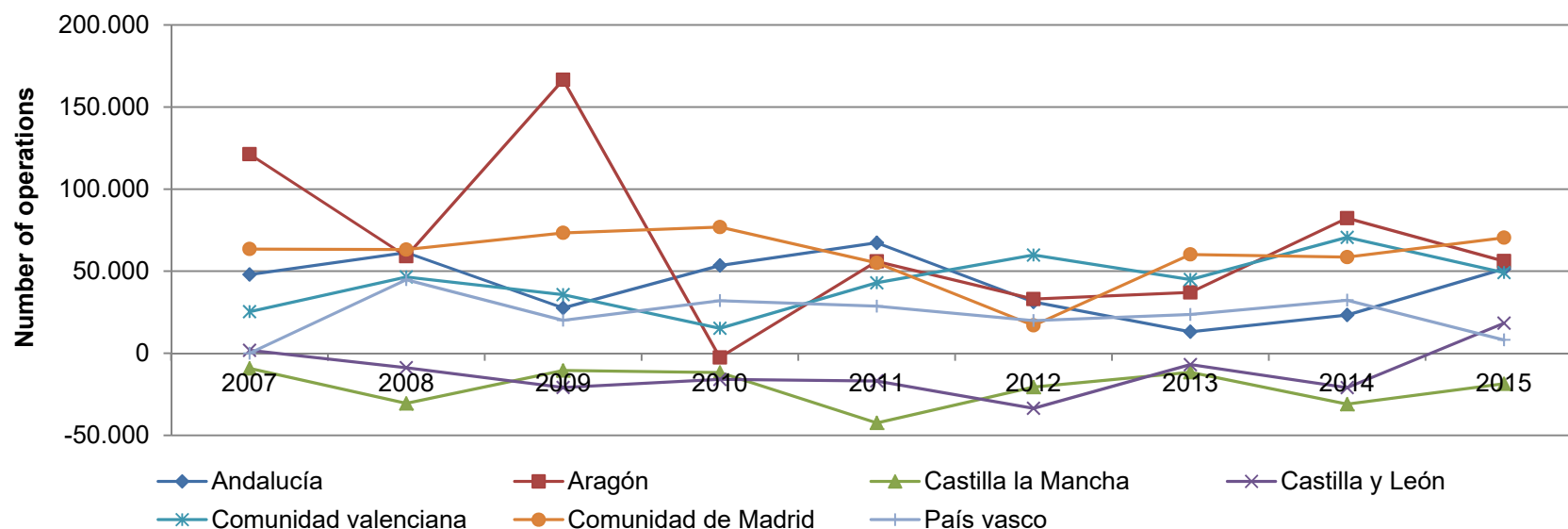
## New Evolution of enrolments according to type of fuel and maximum load

- **645 new enrolments** between 2011 and 2015 in the number of **vans and trucks with a MAM<3,5T** which use **alternative energies**.
- The **CNG** was used for the first time in **2012 in 2 vehicles**.
- The enrolments of vehicles using **PLG** increases by a **144,4%** compared to 2014 (from 18 to 44 vehicles).
- For trucks with a **MAM>3,5T** the inclusion of alternative energies is pretty much lower.



## Loads equilibrium/disequilibrium

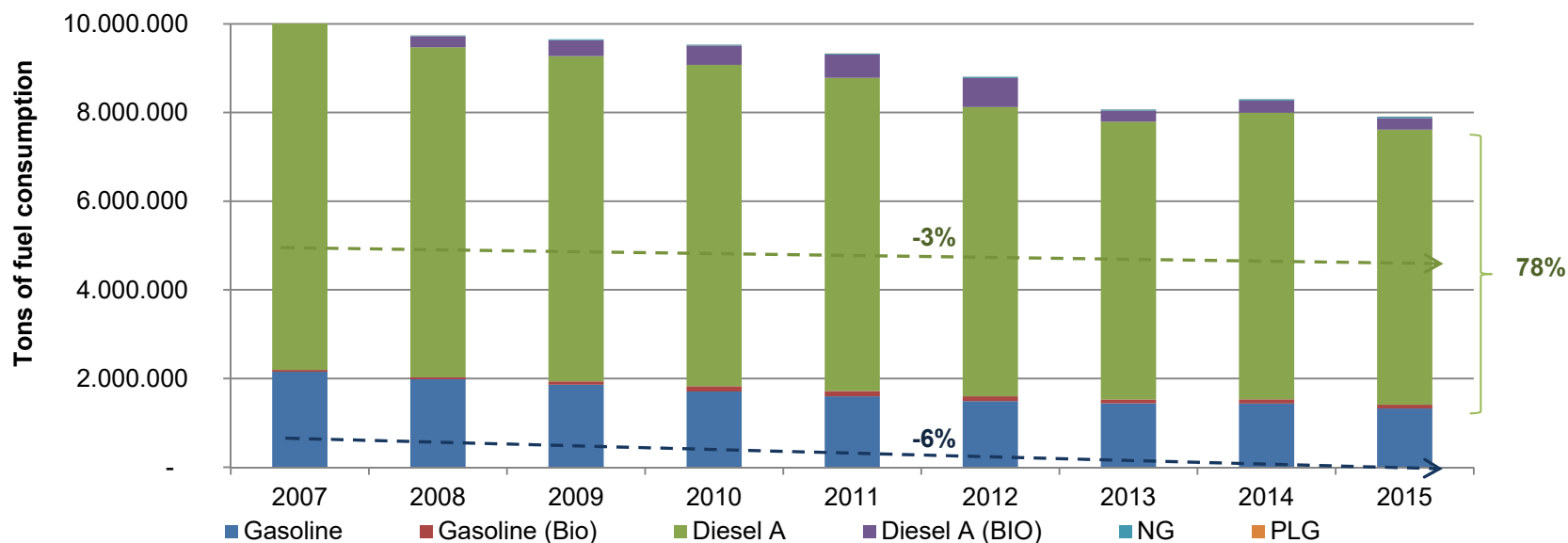
- Between **2008-2014** the only regions with a **negative balance (importations>exportations)** were **Castilla la Mancha and Castilla y León**. In the last biennium (2014-2015) both increased its equilibrium in a **40% and 188% respectively**.
- Currently, in 2015 it is confirmed an increasing **positive balance in the exchanges with Madrid and Andalucía** (20% and 121% compared to 2014). They are expected to be potential important destinations for the exportations from Catalonia.



Source: Elaborated from data of Ministerio de Fomento

## New Fuel consumption for automotive

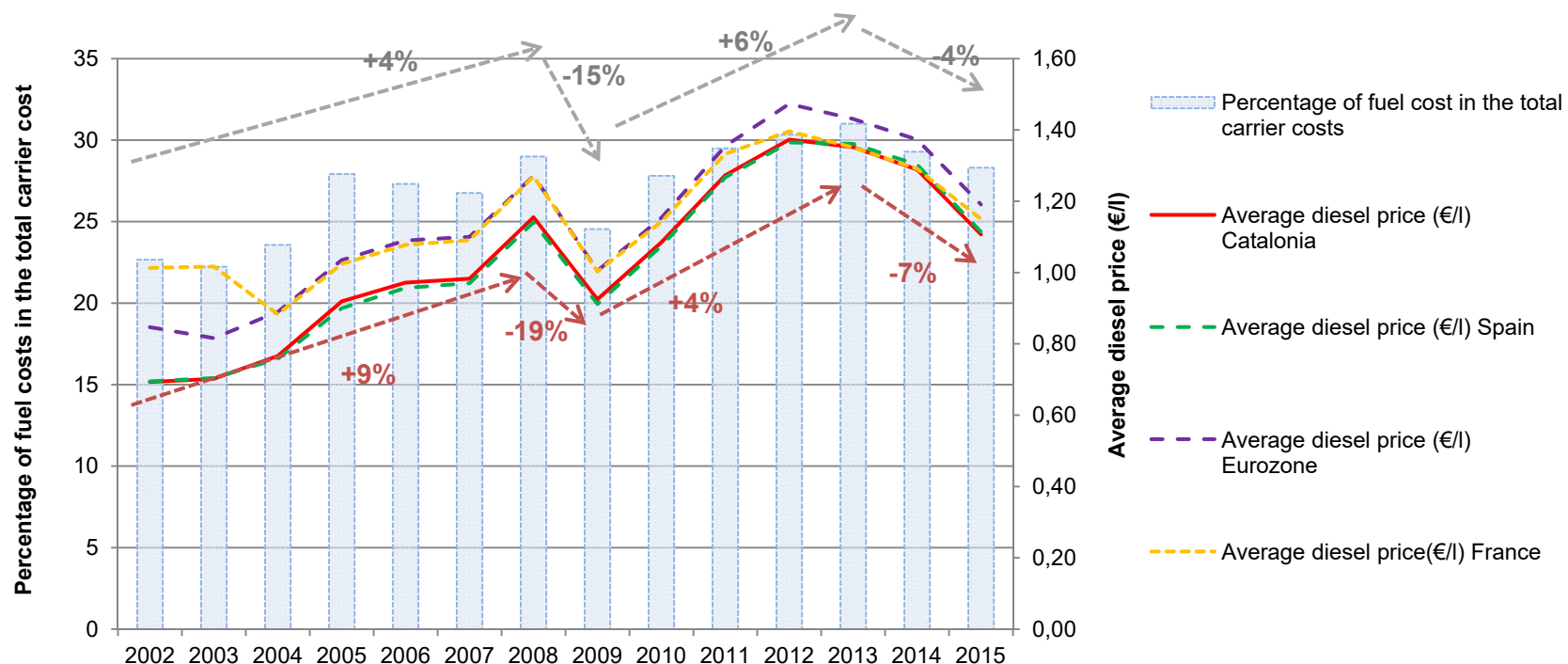
- Clear dominance of **diesel (diesel A)** throughout the studied period in Catalonia, in spite of an annual drop of a - **3% (2007-2015)**. Its **current market share (2015)** is of **78%**.
- **Gasoline** is the second most consumed fuel despite of its **annual decline by 6%** (2007-2015).
- **Annual positive increase of the biofuel** notwithstanding its reduction in the last biennium (2014-2015) with the exception of PLG (+36%).



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

## Costs evolution based on diesel

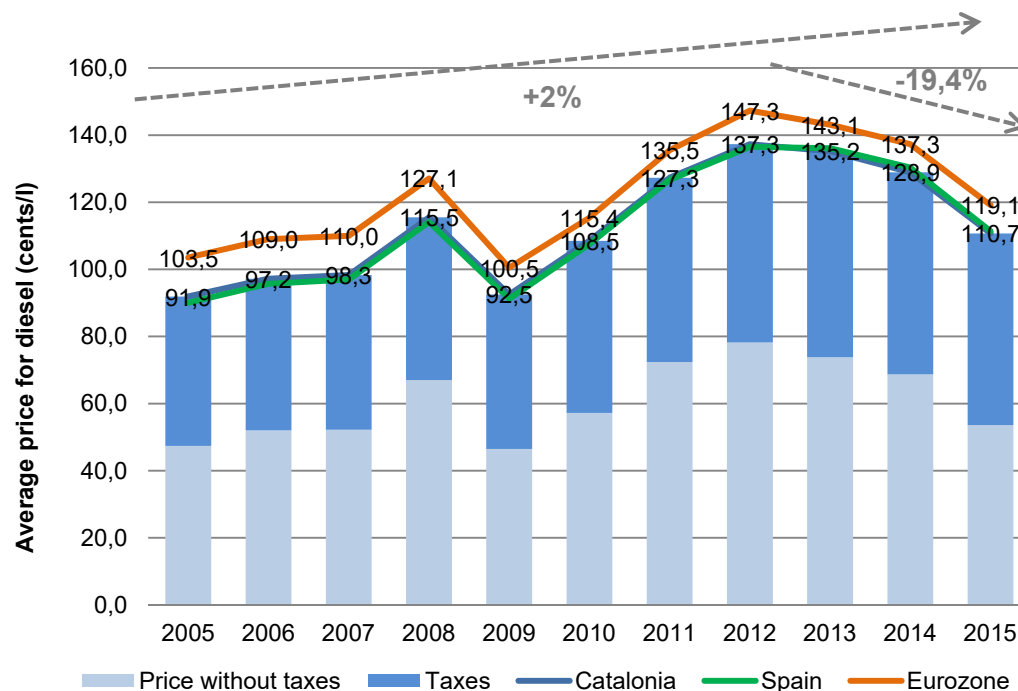
- The **evolution** of the percentage of fuel costs and the diesel price **shows a convergence between both series**.
- The **average price per litre of diesel in the Eurozone is 8 euro cents higher** compared to Catalonia (2015).



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 **2012-2015** there is a descent in the diesel price of a **-19,4%** in **Catalonia**. However, its **annual growth** throughout the studied series is around **2%** (2005-2015).
- The evolution in **Spain and in the Eurozone converges: 0,7 cents and 8,4 cents** respectively **higher** than in Catalonia (2015).



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

### Advanced data for 2016

**Catalonia (April): 97,1 cents/litre**

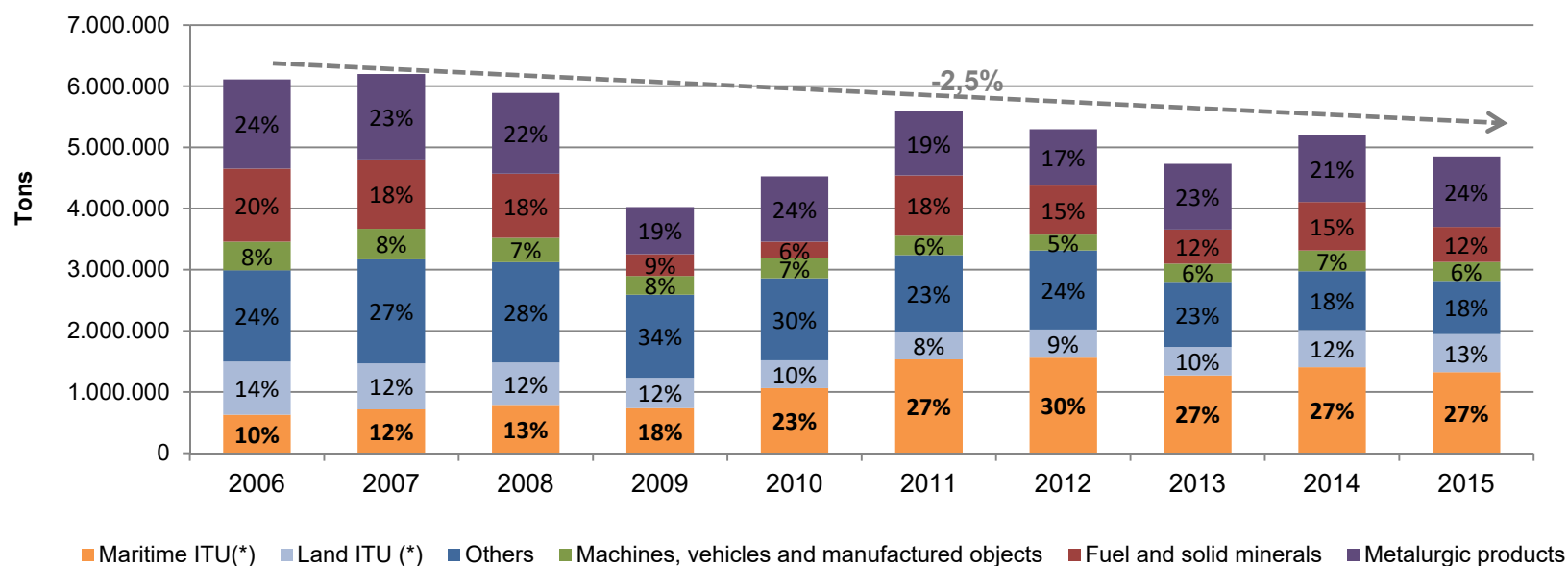
**Spain (April): +0,5 cents higher (97,6)**

**Eurozone (April): +9,3 cents higher (106,4)**



## Intermodal rail transport

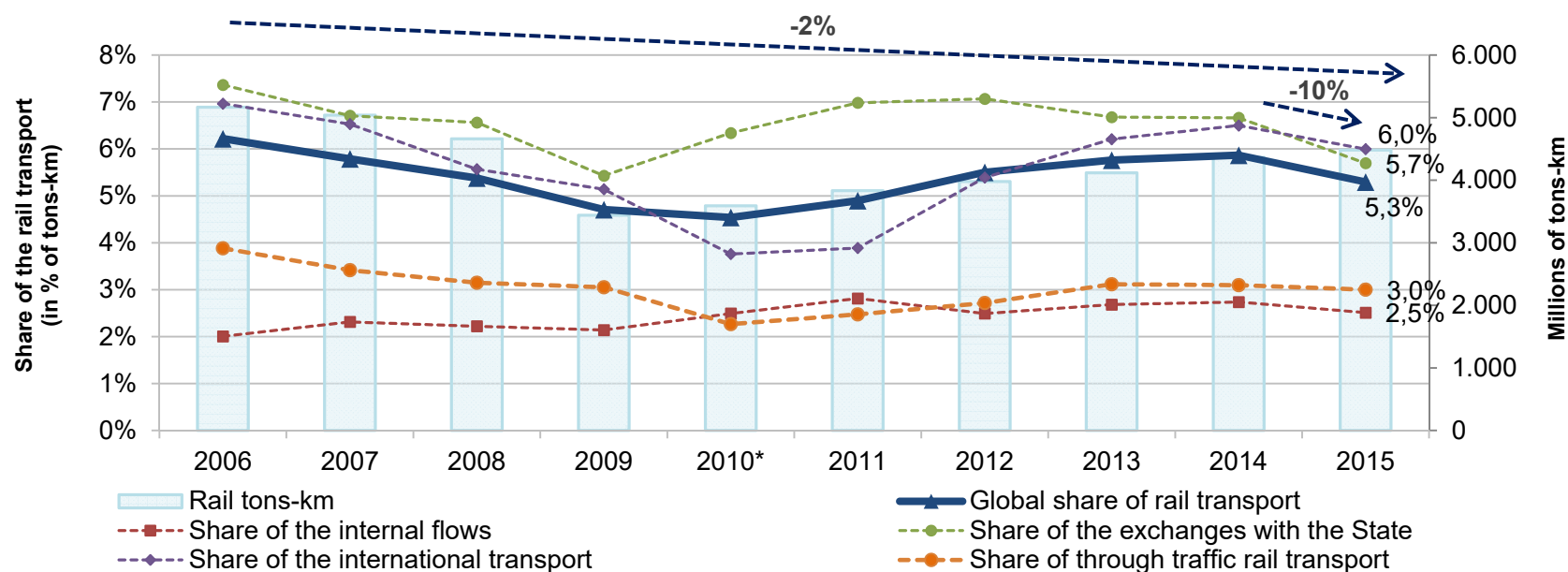
- **Oscillating trend in the total volume of managed tons by rail modes in Catalonia.** 2009 recorded the minimum transported tons of the series, followed by an accelerated growth until 2011.
- **Leadership of the transport linked to maritime mode** with an annual growth of a 9% (2006-2015), representing the 27% of the total.



Source: Elaborated from data of Renfe

## Rail transport share

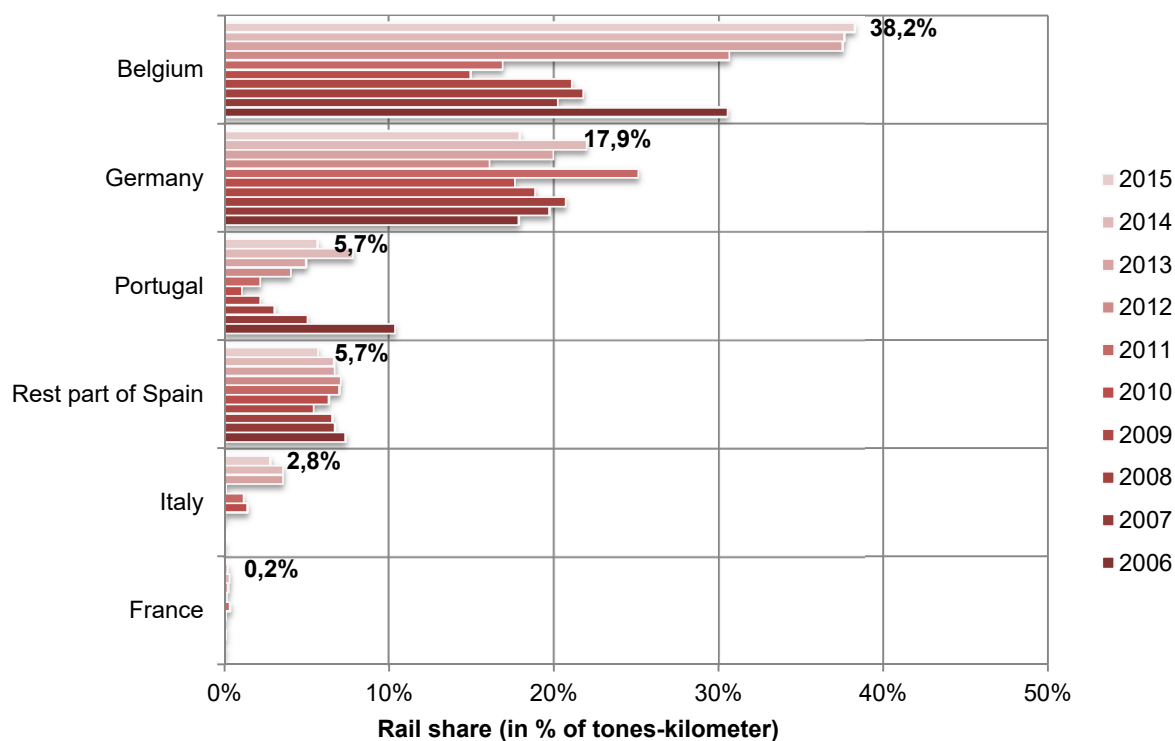
- **Rail share of intern traffics:** A decline of a 8,3% in the last biennium (2014-2015).
- **Rail share of exchanges with the rest of the State:** Declining tendency throughout the studied series (-2,8% annual (2006-2015)).
- **Rail share of international traffic:** They currently represent a rail share of a 6% (2015).
- **Rail share of through traffic:** Declining tendency throughout the series (-2,8% annual (2006-2015)).



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

## Rail share of international terrestrial flows

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

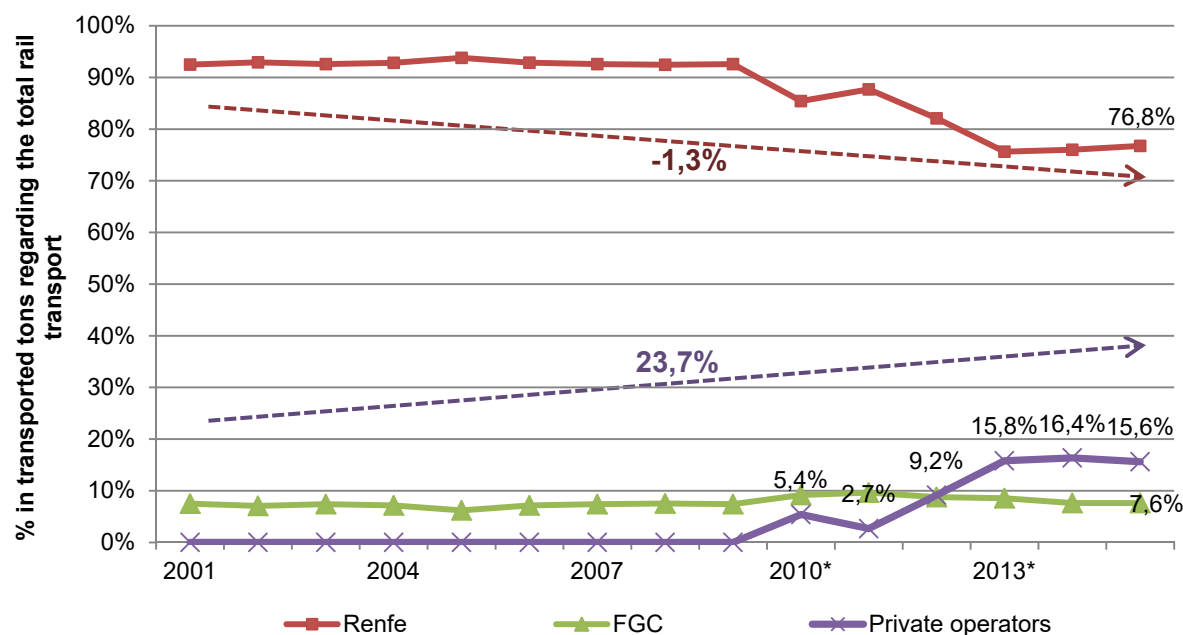


Source: Elaborated from data of Ministerio de Fomento and Renfe

Millions of exchanged tons-km with Catalonia	2015
France	12.149
Italy	3.265
Rest of Spain	30.737
Germany	7.186

## Activity of private rail operators

- In 2010 the weight of the private rail operators share regarding the freight transport in Catalonia starts its presence, representing **in 2015 a share close to the 16%** about the total transported tones by rail mode.
- Renfe keeps its leadership with the significant share of a **77% (2015)**.

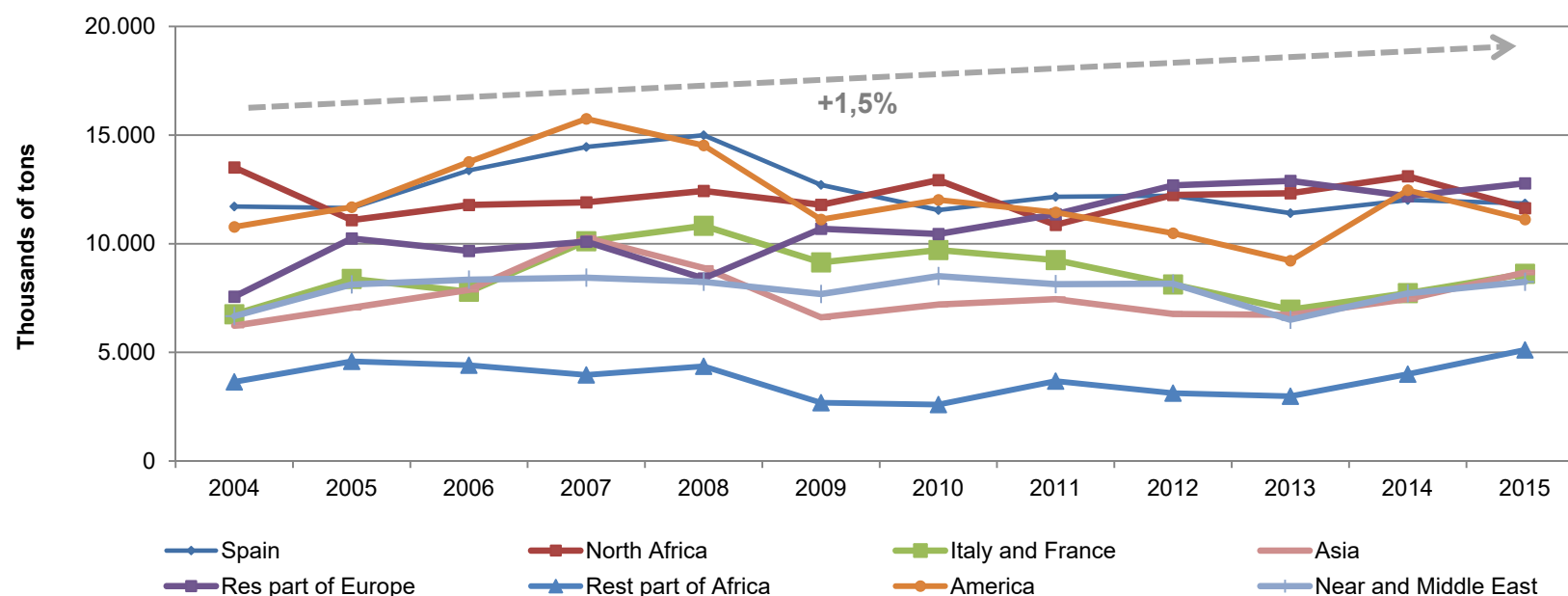


Source: Elaborated from data of FGC and Renfe

Millions of transported tons (2015)	
Renfe	7.055
FGC	700
Private operators	1.435

## Freight traffic in the Catalan harbours by its origin and destinations

- General growth in 2015 of a **2,3%** compared to 2014 on the total freight volume moved in the harbours of Barcelona and Tarragona. **Increase of the international traffic in short distance in the last biennium (2014-2015) with Italy and France (+11,5%) and the large distance traffic with Asia (+16,3%) and the rest part of Africa (+27,8%). Decline of the exchanges with Spain (-1,3%), Nord Africa (-11,3%) and South America (-21,9%).**

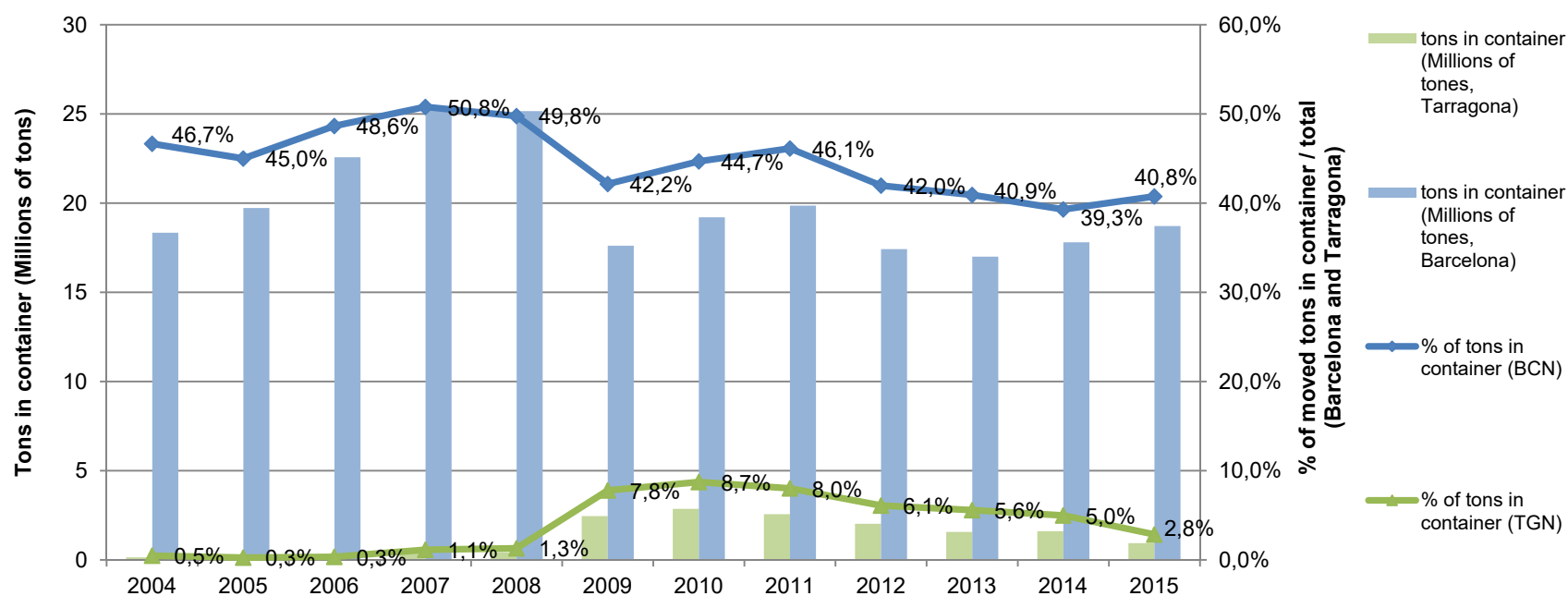


Source: Elaborated from data of Autoritat Portuària of Tarragona and Port of Barcelona



## Percentage tons in containers regarding the total moved tons

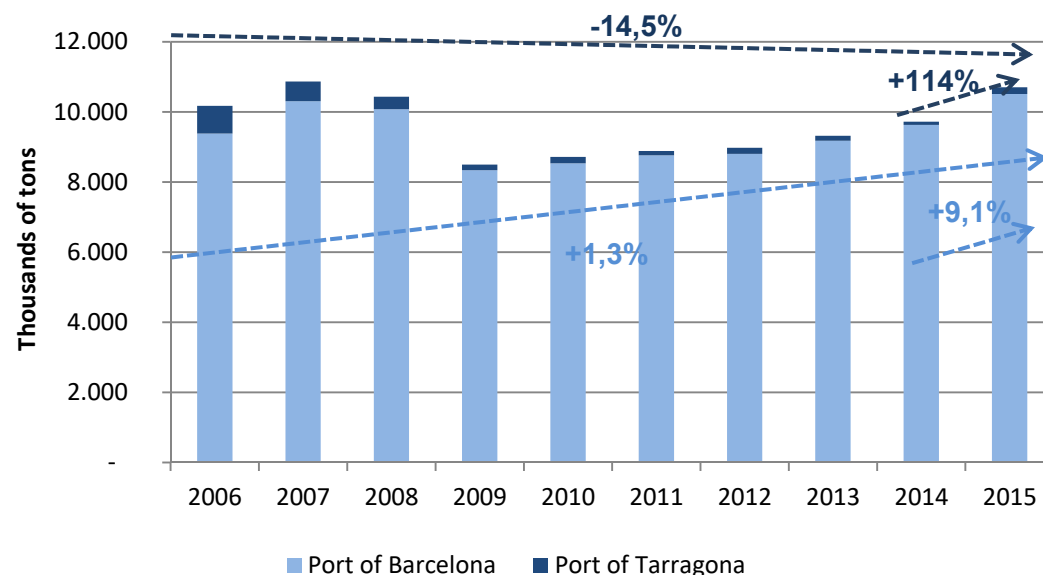
- **Port of Barcelona:** Growing tendency until 2008. The **share for container traffic in 2015** has achieved the value of **40,8%**, being notoriously lower than the maximum share of a 50,8% registered in 2007.
- **Port of Tarragona:** Declining trend from 2010 to the present. The **share for container traffic in 2015** is about **2,8%**. The maximum value of the series corresponding to 8,7% was achieved in 2010.



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

## New Intermodality study in the maritime mode

- Clear dominance of the Ro-Ro traffic in the Port of Barcelona throughout the series (2006-2015).
- **Barcelona:** Generalized growth from 2009 to the present, increasing a 9,1% in 2015 compared to 2014.
- **Tarragona:** inter-annual decline of a -14,5% (2006-2015). However, the growth for the last two years (2014-2015) has been positive, (+114%).



Source: Elaborated from data of Puertos del Estado

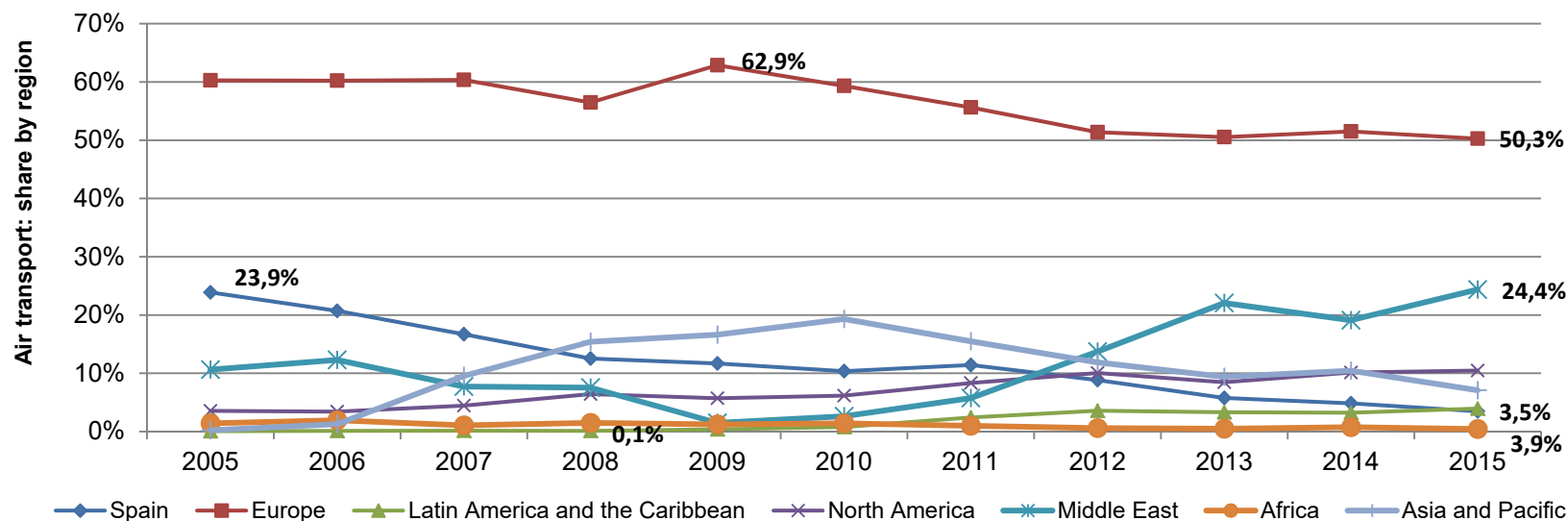
### Advanced data for 2016

**Barcelona (April):** 3.366 thousand of accumulated tones since January (+1,68% compared to April 2015).

**Tarragona (April):** 82 thousands of accumulated tons since January (+ 45,6% compared to April 2015).

## Air traffic by geographic regions

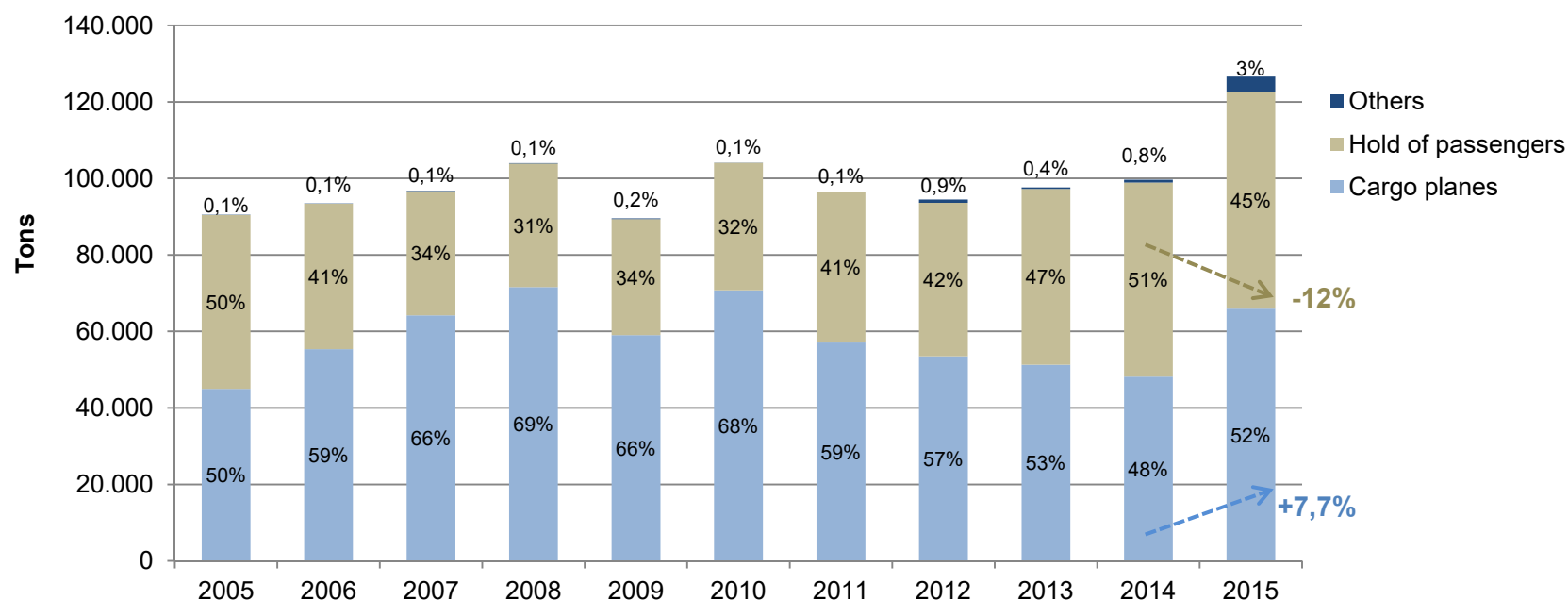
- **Exchanges with Barcelona-El Prat:**
  - **Europe: Predominant region** in terms of air traffic volume. The maximum value corresponds to 2009 with a total region share of 62,9% in moved tons. Currently, they represent the **50,3%** of the total volume.
  - **Middle East: Accelerated growth** of this market since 2011. They currently represent a **24,4%**.
  - **Spain: Progressive decline** since 2005. They currently represent the **3,5%** of the total volume.



Source: Elaborated from data of Aena

## Goods volume by type of operation

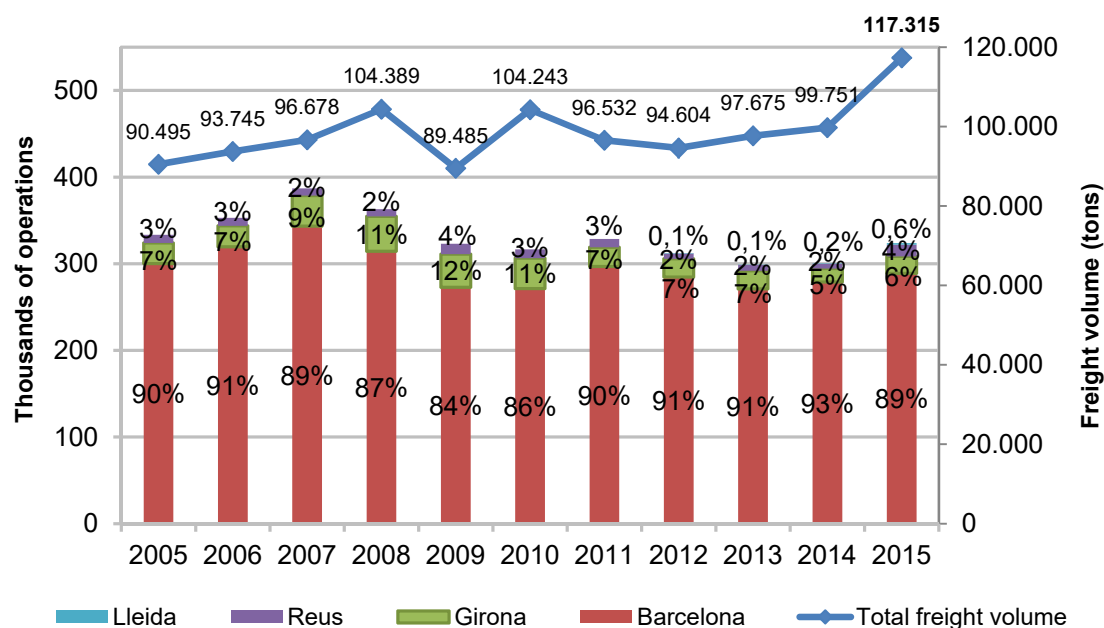
- **Cargo planes:** 2015 means a change in the tendency, with an **increase of a 7,7%** compared to 2014. This type of operation represents a 52,1% of the freight transported by air mode.
- **Transported freight in the hold of passengers:** **Decrease of a 12%** compared to 2014.



Source: Elaborated from data of Aena

## Catalan air traffic

- **Barcelona:** Principal airport of Catalonia, it currently accumulates the 89% of the air operations in Catalonia.
- **Girona:** Represents the 6% of the total air operations in Catalonia.
- **Reus:** Third position regarding the number of operations, with a share of a 4%.
- **Lleida:** In spite of representing a 0,6% of the total operations, it presents an increase of a 306% in the number of operations compared to 2014.



Source: Elaborated from data of Aena

### Advanced data for 2016

Between **January-April 2016** the airport of Barcelona presents an increase of its activities.

Madrid: - 22,65%

**Barcelona: +13,27%**

Zaragoza: +8,53%

State total: +10,70%



## Supply and Demand: Statistical annex

### 2. SUPPLY AND DEMAND

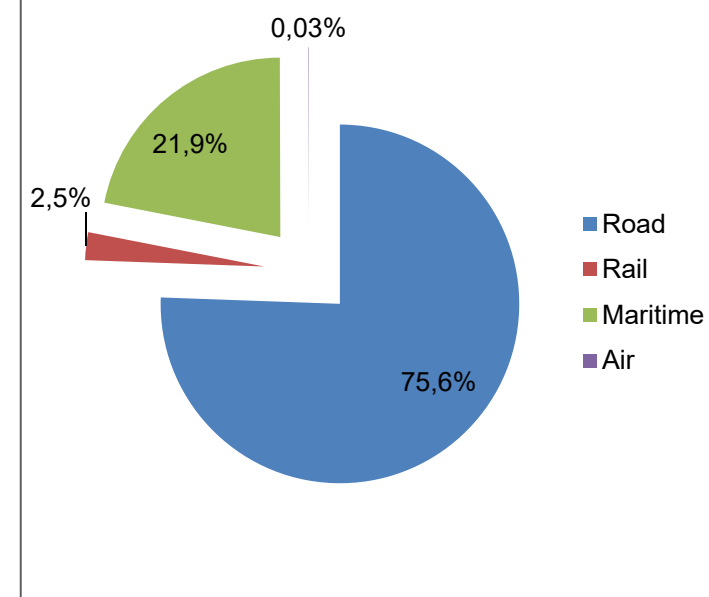
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By transport mode 2015



## Supply and Demand: Statistical annex

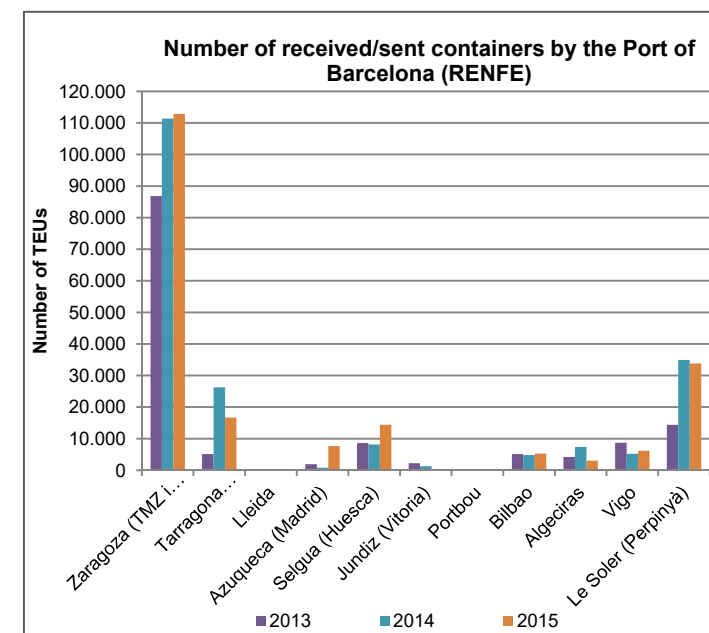
### 2. SUPPLY AND DEMAND

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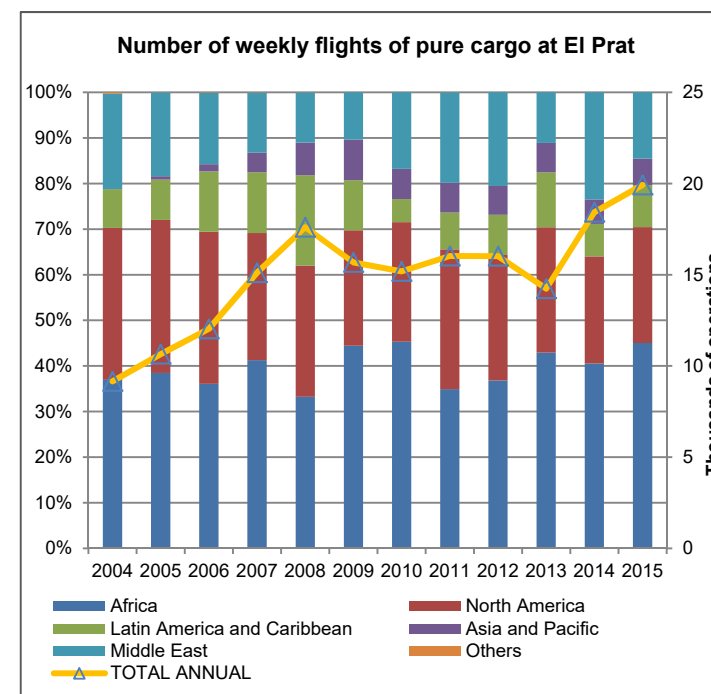


## Supply and Demand: Statistical annex

### 2. SUPPLY AND DEMAND

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## Logistics real state market

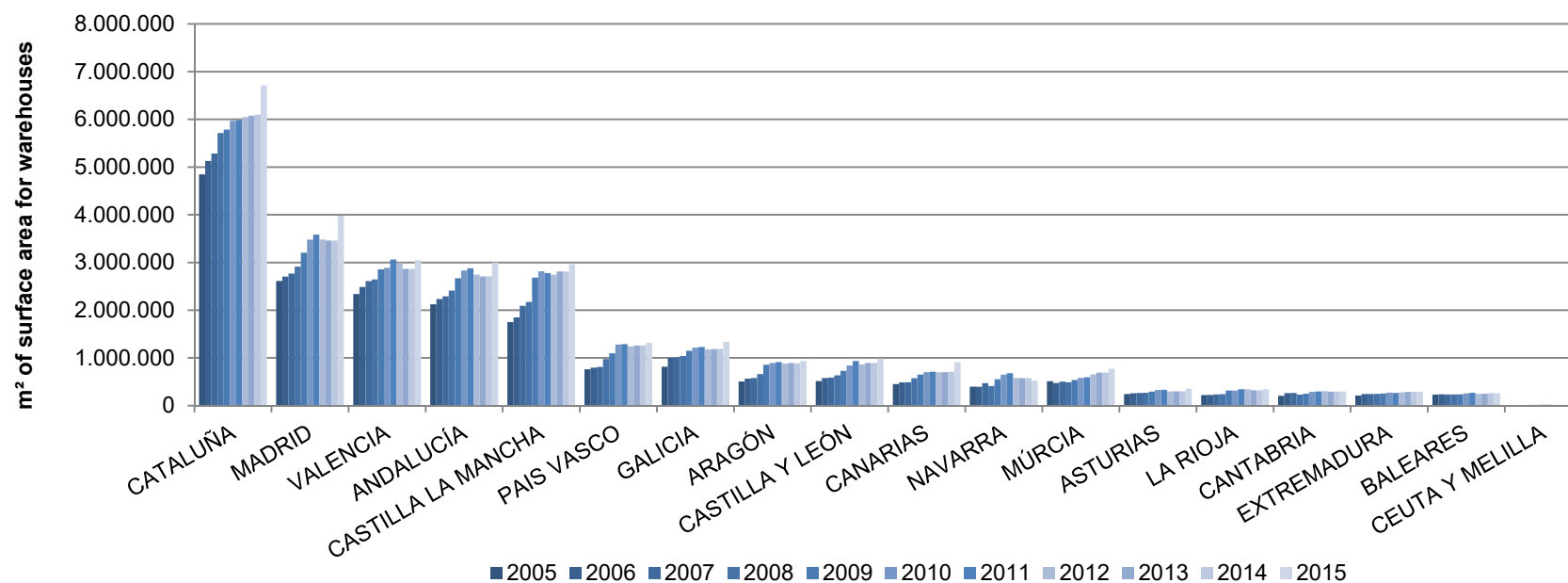
- **Catalonia reinforces its leadership within the Spanish State in terms of available surface area for warehouse and logistics platforms. It currently (2015) owns a total amount of 6,7 millions of square meters.** On the other hand, Spain increases its available area for warehouse compared to 2014 in a 9,5%, whereas in Catalonia the increase has been slightly higher, about a 10%.
- **Due to the consumerism environment as well as the privileged industrial and logistics development situation, the logistics platform in the province of Barcelonès leaders the ranking at provincial level in terms of available square meters for logistics warehouse (4.937.250 m<sup>2</sup> in 2015) and it has a rental price of (5,8€/m<sup>2</sup> per month).** Therefore, it is positioned near the average rental price for logistics warehouse in Europe of 6,1€/m<sup>2</sup> per month.





## Logistics area in State range

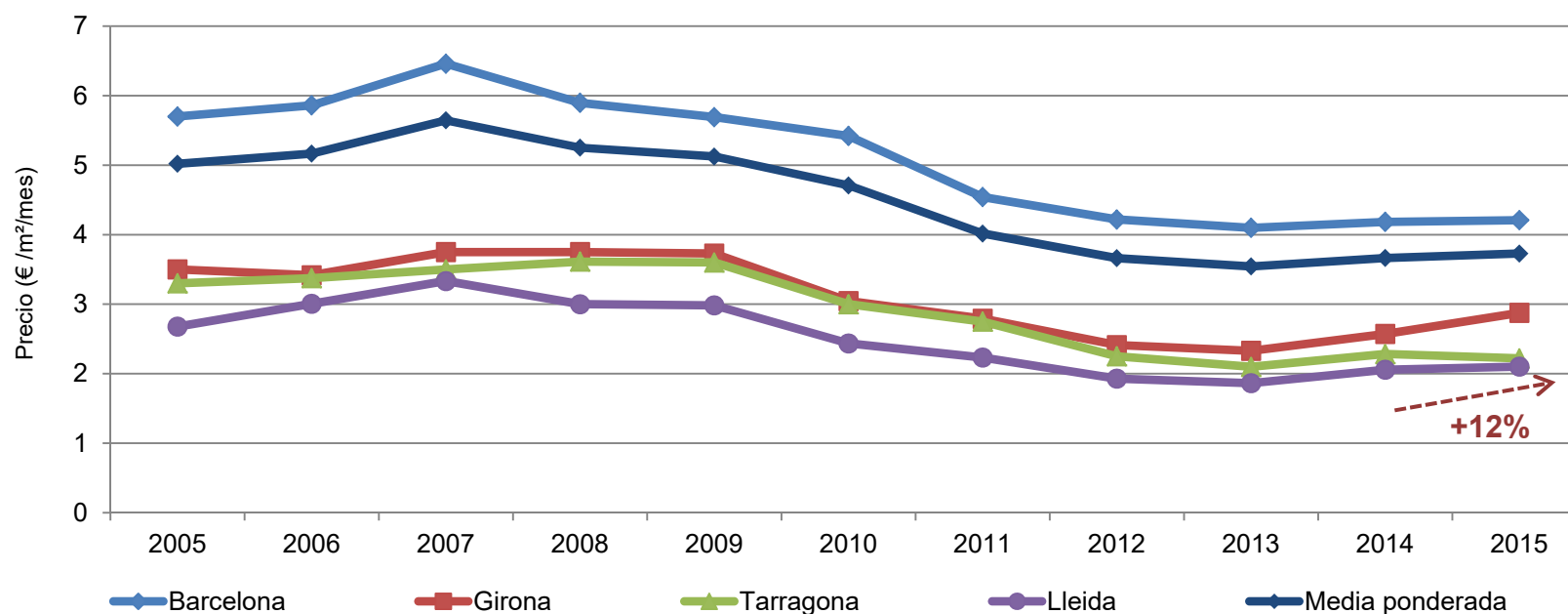
- **Catalonia**, with an area of more than 6 million m<sup>2</sup>, keeps **leading the State ranking** for available logistics designated land (**23,9%**).
- The **10% growth of supply** in Catalonia on the last biennium (2014-2015) contrasts with the general stagnation in the rest of Spain.



Source: Elaborated from data of Alimarket

## Average rental price of logistics warehouse by provinces

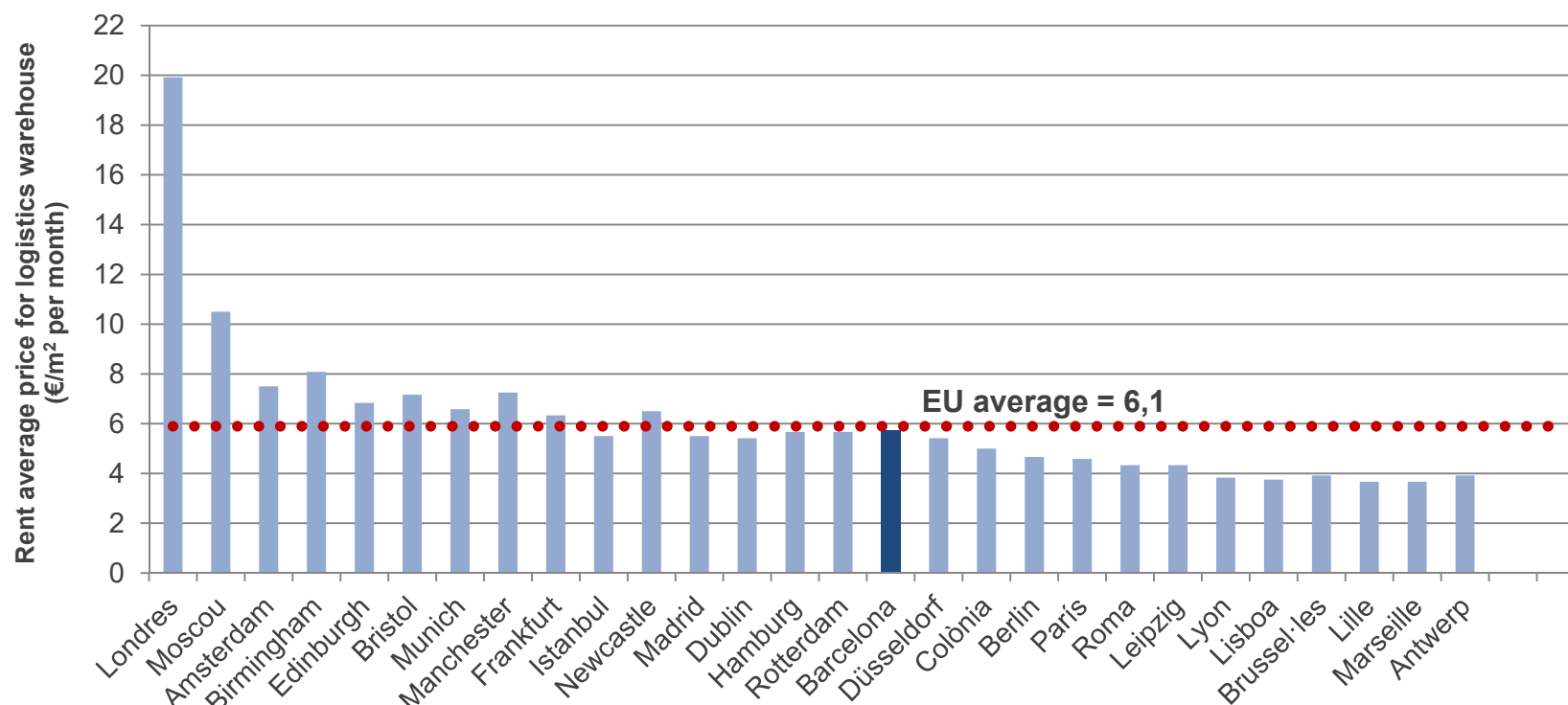
- Regarding the weighted average in Catalonia, a huge increment is confirmed in the rental price of logistics warehouse between **2005-2007**, followed by a **fall** due to the economic crisis and the housing bubble **which lasts until 2013**. 2015 presents an average price of 3,73 €/m<sup>2</sup> per month.
- Moderate increase in the prices starting in 2014**. In 2015 in the **province of Girona** is observed a notorious price increment **around a 11,8%** in regard to 2014.



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

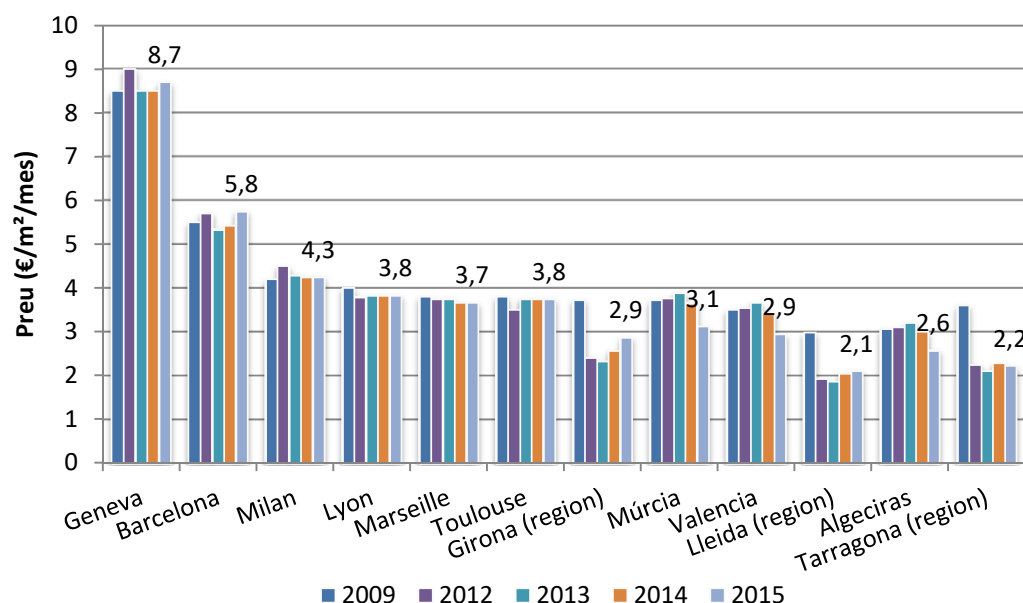
- The average rental price of logistics warehouse in Barcelona city (5,8 €/m<sup>2</sup> per month) is located significantly close to the European average of 6,1€/m<sup>2</sup> per month.



Source: Elaborated from data of Alimarket

## Analysis of the logistics real state range in the Mediterranean corridor

- In **first position Geneva** leaders the ranking with an average value of 8,7 €/m<sup>2</sup> per month by the end of 2015.
- In **2015 Barcelona** city occupies a **second position in the ranking** with a price of 5,8 €/m<sup>2</sup> per month, meaning an increase of 6,2% over de data of 2014.



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



## Logistics real state market: Statistical annex

### 4. 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	013	2014	2015	Δ14-15	interannual
San Agustín	5,1	3,3	3,1	3,1	0,0%	-5,3%
Vallecas	0,0	5,0	4,3	-	-	-
Cabanillas del Campo	3,8	2,7	3,3	2,9	-11,5%	-3,1%
Getafe	5,5	4,2	4,1	4,1	0,0%	-3,1%
Seseña	4,3	2,7	2,9	2,9	0,9%	-4,3%
Azuqueca	4,3	2,8	2,8	2,9	4,5%	-4,3%
Ontigola	0,0	2,9	2,7	2,7	0,0%	-
Valdemoro	3,3	3,3	3,1	3,1	0,0%	-0,7%
Alcalá de Henares	4,8	3,4	4,0	3,5	-12,5%	-3,3%
Coslada	6,3	4,3	4,5	4,5	0,0%	-3,6%
Madrid 1a Corona regional	7,0	4,3	4,3	4,3	0,0%	-5,3%
Madrid 2a Corona regional	4,8	3,0	2,8	2,8	0,0%	-5,8%
Madrid 3a corona regional	3,2	1,7	1,7	1,7	0,0%	-6,7%
Sevilla	0,0	2,9	-	-	-	-
Zaragoza	3,0	2,0	1,8	2,2	23,9%	-3,4%
València	4,0	3,3	3,3	2,9	-9,4%	-3,3%
Girona	3,4	2,3	2,6	2,9	11,8%	-1,9%
Tarragona	3,4	2,1	2,3	2,2	-2,8%	-4,5%
Lleida	3,0	1,9	2,1	2,1	2,2%	-3,9%
Barcelonès	7,0	5,5	5,5	5,5	0,0%	-2,6%
Baix Llobregat	6,4	4,3	4,3	4,5	5,9%	-3,8%
Vallès Oriental	5,3	3,3	3,3	3,8	15,4%	-3,7%
Vallès Occidental	4,9	3,5	3,3	3,8	15,4%	-2,8%
Alt Penedès	4,2	2,8	2,4	3,3	36,8%	-2,7%
BCN 1a Corona 0-10 Km	7,3	5,6	5,7	6,1	7,7%	-1,9%
BCN 2a Corona 10-40 Km	5,3	4,0	4,3	4,4	1,9%	-2,0%
BCN 3a corona 40-100Km	3,8	2,5	2,8	3,0	7,1%	-2,4%





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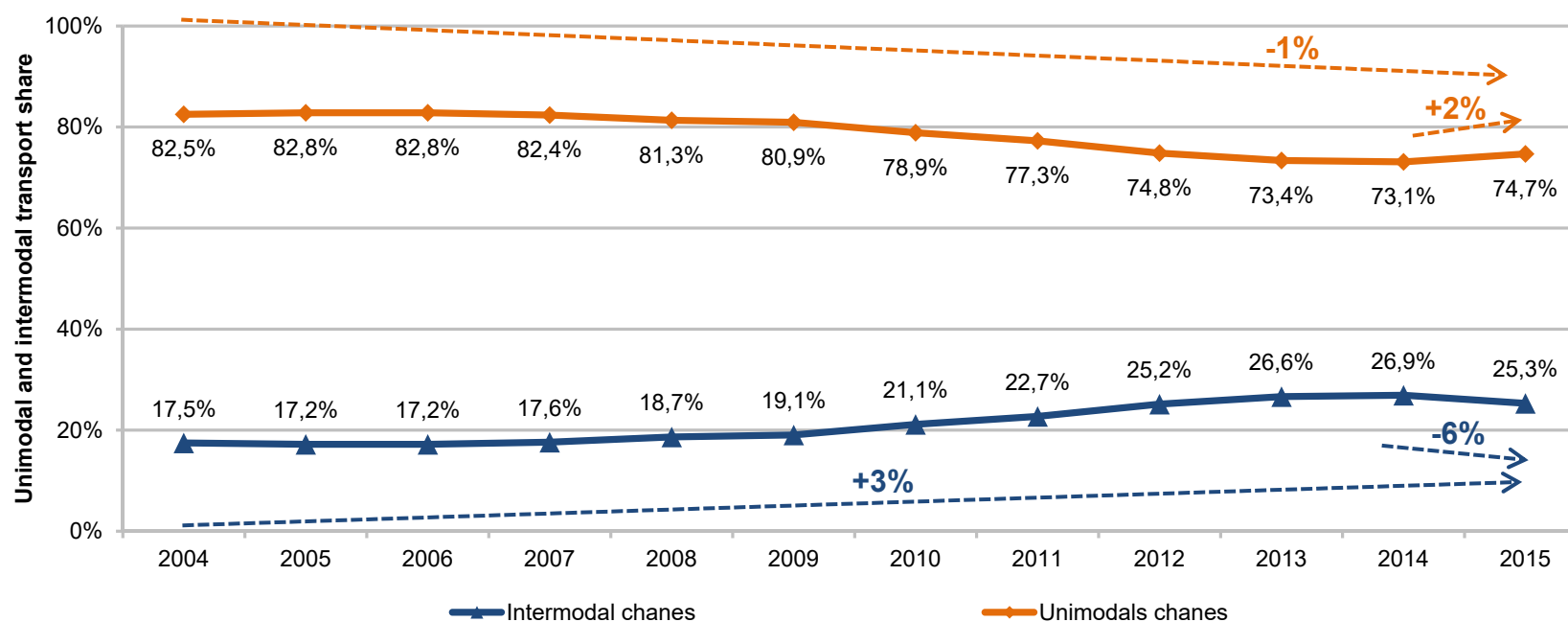
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## Efficiency

- The share of intermodal transport presents a global increasing tendency during the period of economic crisis. **However, it is confirmed that the mentioned increase in the shares correspond to a diminish 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 trips remains stable around a share of 40% throughout the series of study (2004-2014) and with an increase of a 0,5% in the last biennium (2014-2015).** 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 2006-2014 the consumption of fuel and the amount of different kind of emissions regarding the freight transport have experienced an important decline (between a 4-11%).** In 2014 a diminution in fuel consumption and gas emissions has been noticed, despite the growth in the travelled distance. Therefore, it is confirmed the social environmental awareness and the currently applied technological improvements in vehicles.
- **The PLG importance as an automotive fuel has increased significantly since 2006, being multiplied by 6,8 between 2007 and 2015.** Its annual variation is above 27% for this period and its current consumption is 7ksteps.

## Intermodal transport share

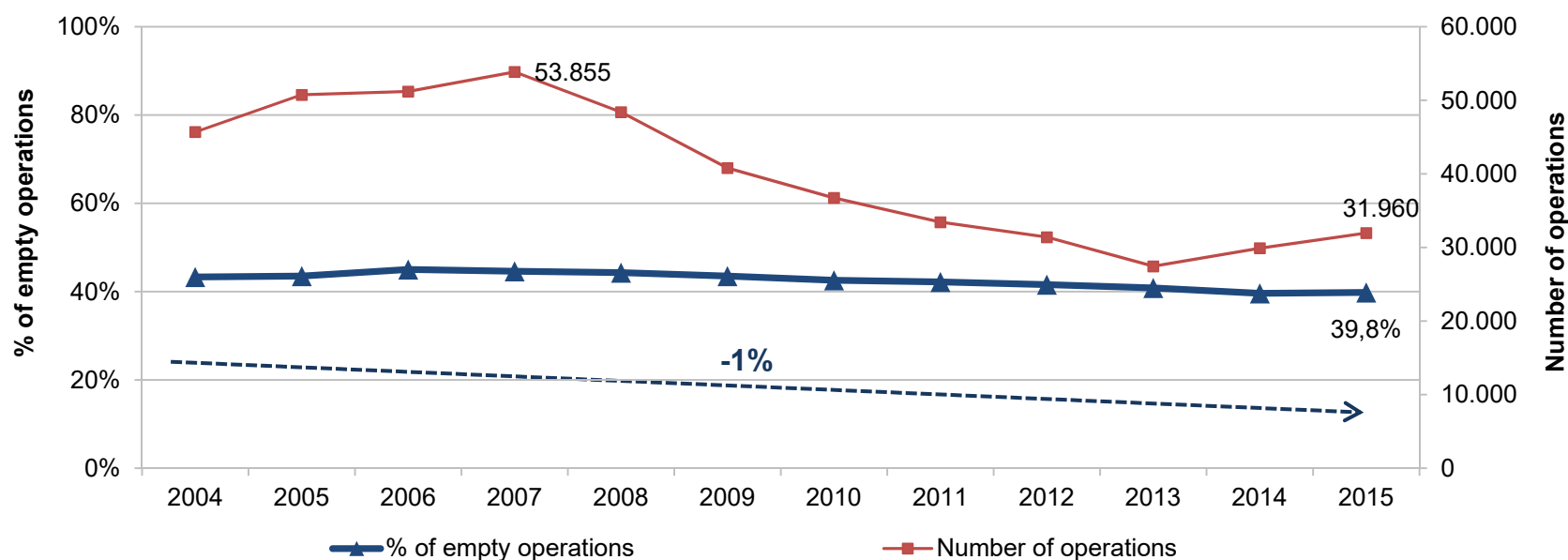
- The increase of the intermodal share in the recent years corresponds to a drop in the transport demand, which has in fact affected more to the reduction of unimodal road chains, than to gain more flow for the intermodal chains.



Source: Elaborated from data of FGC and Renfe

## Percentage of empty trips

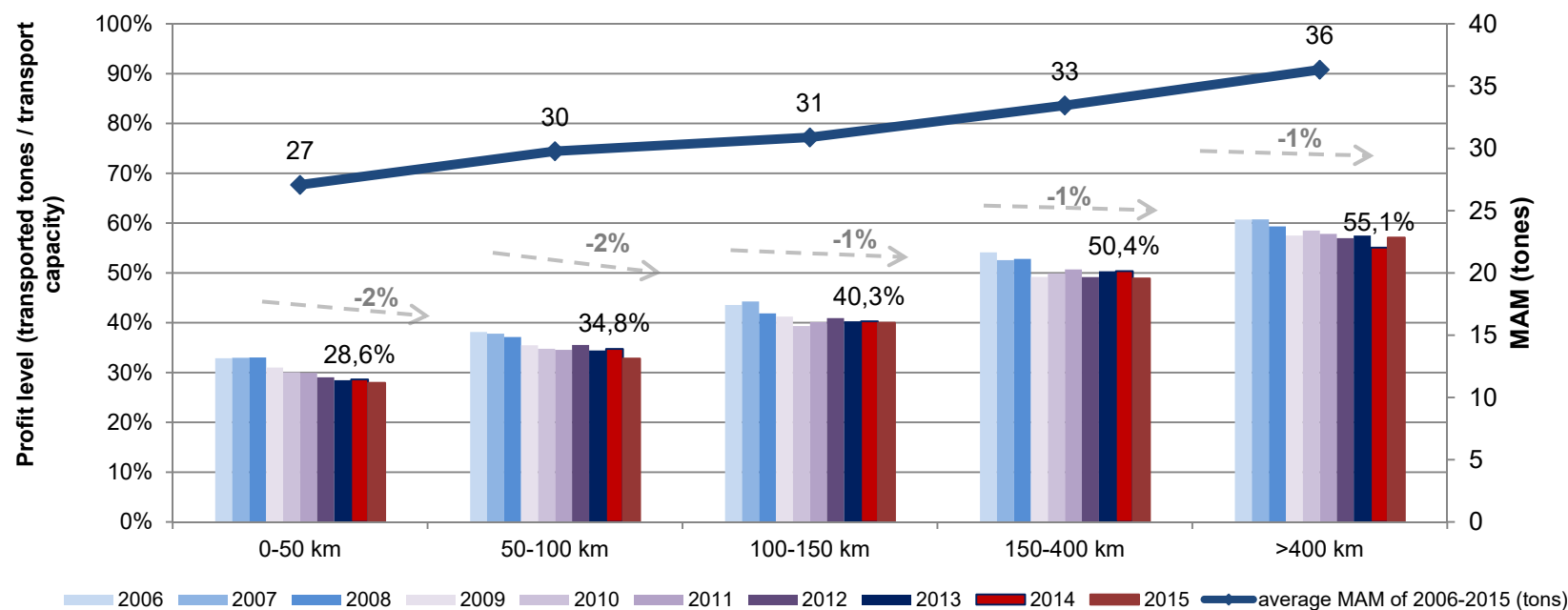
- A negative evolution of the total operation number, with an annual variation of a **-0,8%** (2004-2015). However, since 2013 to the present days the tendency has been inverted.
- Tendency of a **reduction in the percentage of empty trips**. Rates below 40% in the recent years (2014-2015). However, in 2015 a slight increase in these operations is confirmed compared to 2014 (+0,5%).



Source: Elaborated from data of Eurostat and Ministerio de Fomento

## Capacity level of use in road transport

- **Global decline of the capacity level of use throughout the entire series (2006-2015)**, regarding the heavy vehicles in Catalonia. Currently (2015), the capacity level of use in a truck is located between 28% and 57% depending on the travelled distance.
- The following relation is confirmed: **the longer travelled distance, the higher is the capacity level of use**. In 2015 the maximum achieved level is **57,1% corresponding to distances >400km**.

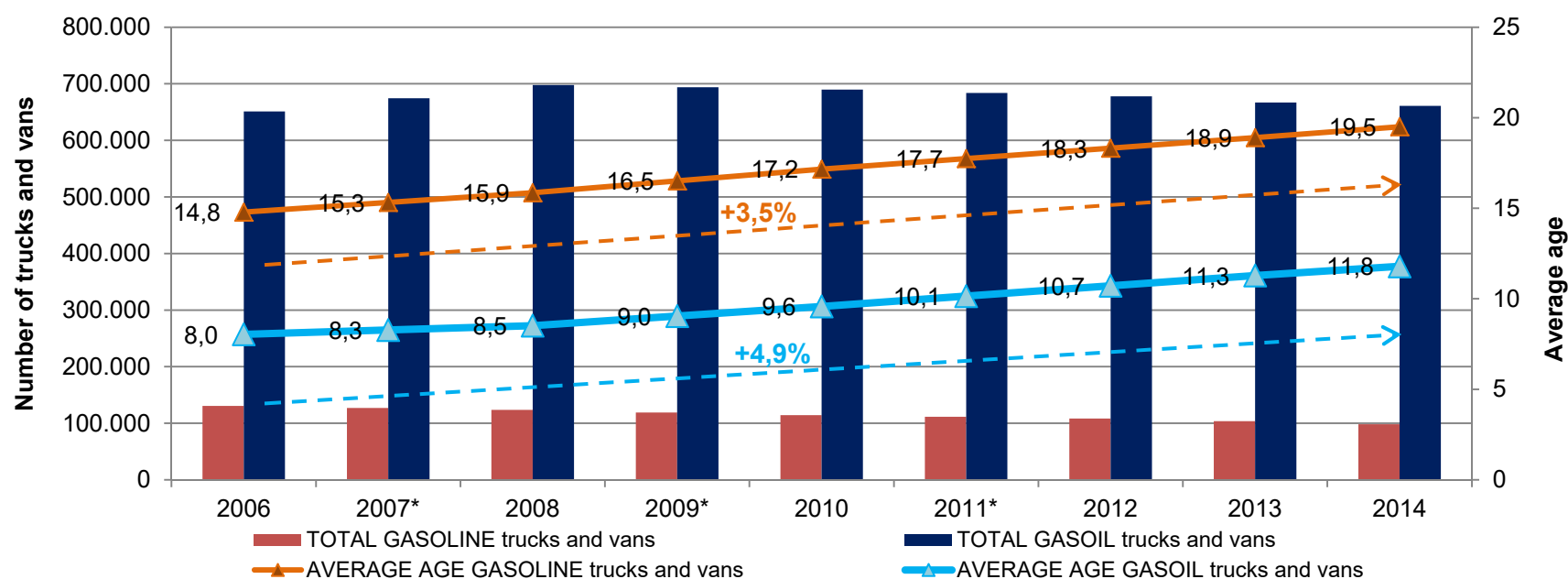


Source: Elaborated from data of Ministerio de Fomento



## Average age of the park of trucks and vans in Catalonia

- **General aging tendency.** Annual growth (2006-2014) in terms of the average age of a 3,5% in gasoline users for trucks and vans and about a 4,9% in diesel users for trucks and vans.
- **Dominance of diesel motor vehicles regarding the ones with gasoline.** They currently represent an amount of 87% in 2015.

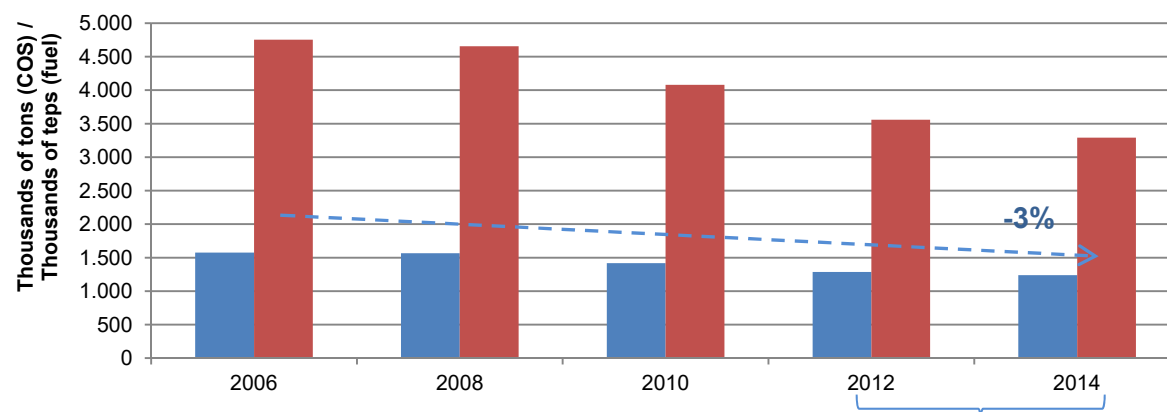


\*Observación: Interpolación lineal entre año precedente and año posterior

Source: Elaborated from data of DGT

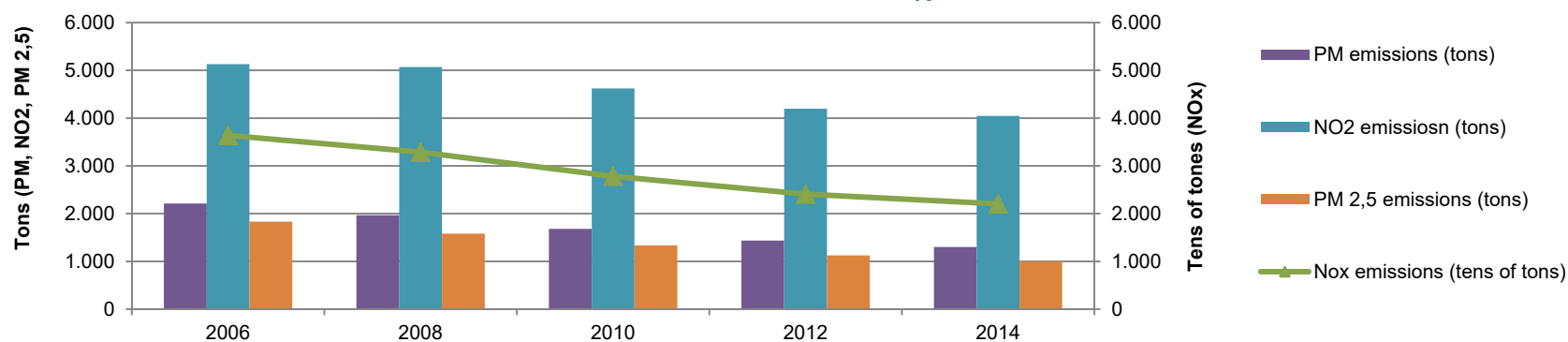
## Goods road transport emissions in Catalonia

- **Generalised decline** in the consumption and the emissions (2006-2014).



Emissions	Annual evolution (2006-2014)	Evolution (2012-2014)
CO <sub>2</sub>	-4%	-7%
PM	-6%	-9%
NO <sub>2</sub>	-3%	-4%
PM 2,5	-7%	-11%
NO <sub>x</sub>	-6%	-8%

■ Fuel consumption (thousands of tons)  
■ CO2 emissions (thousands of tons)

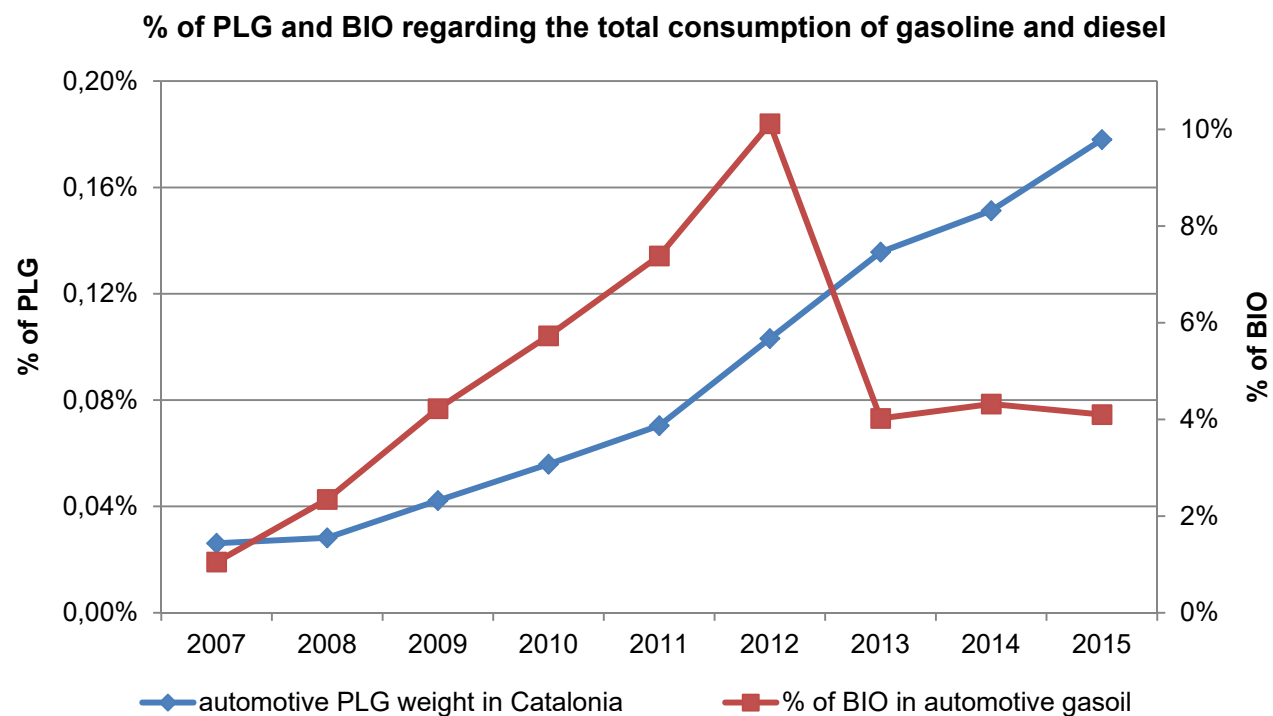


■ PM emissions (tons)  
■ NO2 emissions (tons)  
■ PM 2,5 emissions (tons)  
—●— Nox emissions (tons of tons)

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 inter-annual variation of a 27% (2007-2015).
- **BIO in diesel:** Decrease started in 2013 in the BIO in diesel consumption. In the last biennium (2014-2015) its consumption has diminished in 5,1% regarding the previous year.



Source: Elaborated from data of ICAEN and CORES

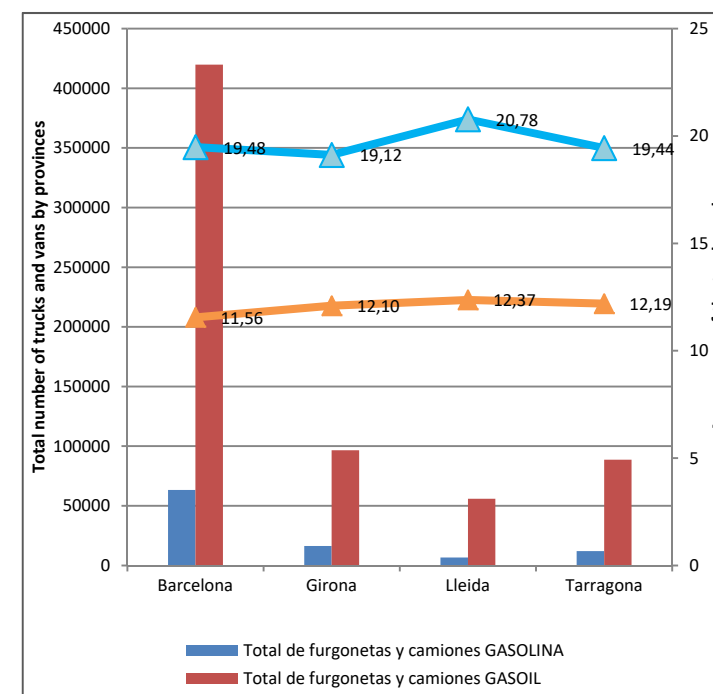
### Annual evolution in the percentage of the alternative fuel consumption (2007-2015)

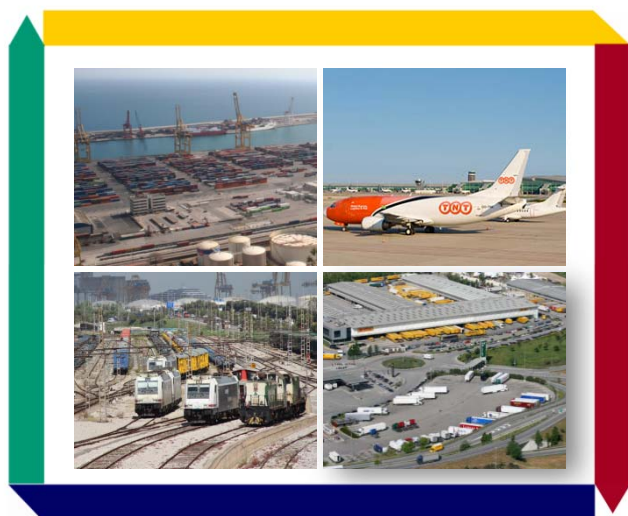
GLP	+27%
Biofuel	+18%

## Efficiency: Statistical annex

### 5. 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. – Emissions subjected to the freight transport in Catalonia by travelled distance





# Thank you!

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 **Observatori  
de la Logística**

