

## Annex A. Methodology

This study covers the Portuguese land and maritime transport sectors as well as ports. In particular, the study analyses road transport, railway transport, maritime transport (with the exception of inland waters) and activities in ports. The transport sub-sectors covered by the study are as follows, accompanied by the corresponding codes according to the Statistical Classification of Economic Activities in the European Community (NACE). In some cases, the corresponding code encompasses a broader set of activities than the ones the project team identified; in that case, we list the category used in the report. In some cases the statistical information was complemented taking into account the Portuguese statistical code, CAE, as it includes an additional level of classification.

**Table A A.1. Economic Activities (NACE codes) included in the study**

NACE (CAE) code	Description	Sub-sector
H49.10	(Passenger rail transport, interurban): includes rail transportation of passengers using railroad rolling stock on mainline networks, spread over an extensive geographic area; and passenger transport by interurban railways).	Passenger rail transport services
H49.20	(Freight rail transport): includes freight transport on mainline rail networks as well as short line freight railroads.	Freight rail transport services
H49.32	(Occasional transportation of passengers in light vehicles): includes the non-regular passenger transport in light vehicles, with a driver, with or without a meter, according to itineraries and timetables.	Transport of passengers by taxi
H49.39 (1)	(Interurban transportation on buses): comprises the interurban transport of passengers in buses, by lines and according to fixed schedules, even on a seasonal basis.	Long-distance buses
H49.41	(Road transport of goods): covers the transport of goods by road, local or long distance, with regular or occasional service characteristics, by means of lorries or similar vehicles.	Trucks transportation
H50.10	(Sea and coastal passenger water transport): includes transport of passengers overseas and coastal waters, whether scheduled or not, such as operation of excursion, cruise or sightseeing boats and operation of ferries, water taxis, etc. It also includes renting of pleasure boats with crew for sea and coastal water transport.	Passenger maritime transport services
H50.20	(Sea and coastal freight water transport): includes transport of freight overseas and coastal waters, whether scheduled or not; and transport by towing or pushing of barges, oil rigs, etc. It also includes renting of vessels with crew for sea and coastal freight water transport.	Freight maritime transport services, including island cabotage
H52.21 (1)	(Other auxiliary transport activities): comprises the activities necessary for carrying out land transport, such as the operation of passenger and freight terminals; parking facilities and similar activities.	Central bus stations
M71.20	(Activities of tests and technical analysis): comprises the testing and technical analysis activities of all types of materials and products to determine their composition. The analyses and trials cover several areas, such as testing of the operating characteristics of equipment (engines, automobiles, electronic equipment, etc.).	Vehicle inspection centres
N77.11	(Rental of light vehicles): includes rental activities (short and long term) of light vehicles (less than 3.5 t), approved without a driver, with or without maintenance services.	Car rental services
N77.12	(Renting of heavy vehicles): comprises the activity of hiring (of short and long duration) of heavy vehicles (more than 3.5 t) of passengers and of goods (lorries, tankers, tippers, waste, etc.), approved for that purpose without a driver. Includes recreational vehicle rental.	Truck rental services
P85.53	(Driving and piloting schools): comprises driving schools of light or heavy vehicles with a view to obtaining a driving licence. It includes the preparation and obtaining of private (non-professional) certificates for the piloting of airplanes and ships.	Driving schools
P85.32	(Secondary technological, artistic and professional teaching): comprises the activities of technological, artistic and professional teaching, with a duration of three academic years, oriented towards a specialisation in a certain field. It also includes driving schools for professional drivers (of lorries, buses and trains).	
P85.59 (1)	(Vocational training): comprises organised training activities carried out to acquire or deepen professional knowledge and skills, developed by public or mixed training institutes, etc.	Training institutes

The sectors were selected by the Portuguese Competition Authority (AdC), based on their relevance for the Portuguese business sector.

The assessment of laws and regulations in these sectors has been carried out in four stages, with a fifth stage for review and drafting of the final report. The present annex describes the methodology followed in each of these stages.

### Stage 1 – Mapping the sectors

The objective of Stage 1 of the project was to identify and collect all sector-relevant laws and regulations. As a prior condition, it was necessary to define the scope of the sectors in detail. Whenever possible, we adopted a definition consistent with the NACE classification in order to ensure consistency with international practice and to facilitate comparisons with other European countries. However this approach was not entirely sufficient to define the road transport sector and the ports and maritime transport sectors. For these two sectors, the definition was developed on the basis of NACE in conjunction with other sources, such as European Commission directives and implementing Portuguese laws, past competition assessment studies, and consultations with ministerial experts from the Portuguese government.

The task of collecting the legislation relevant for these sectors was conducted by the OECD team using a variety of sources. The LegiX legal database<sup>1</sup> together with the website of the official gazette (*Diario da Republica*, [www.dre.pt](http://www.dre.pt)) were the main tools used to identify the applicable legislation. These were complemented by the websites of the relevant transport authorities, and of the main industry associations. In addition, in order to ensure that all important pieces of legislation were covered by the study, input was solicited from all the competent line ministries and public bodies involved in the sectors, from the members of the High-level Committee (HLC) composed of senior government officials and from industry.

Over the course of the project, the mapping of the legislation was refined, as additional pieces of legislation were discovered by the team or were issued by the authorities, while other pieces initially identified were found not to be relevant to the sectors. In total, 904 pieces of legislation were selected for analysis (from a total of 14 667 relevant provisions for transport), including laws, ministerial decrees, ministerial decisions and circulars.

For each of the sectors, we collected data and information, covering industry trends and main indicators such as output, employment and prices. Input was solicited from industry associations, to improve the project team's understanding of the sectors and the challenges of the Portuguese market. A very important task that started during Stage 1 and was continued for the entire duration of the project was the establishment of contact with the different sectors and key agents through the main representative associations active in the sectors. The interviews with market participants contributed to a better understanding of how the sectors under investigation work in practice and helped in the discussion of potential barriers deriving from the legislation or misinterpretation of specific provisions.

### Stage 2 – Screening of the legislation

In the second stage of the project, the main work stream was the screening of the legislation to identify potentially restrictive provisions. Pieces of legislation transposing EU directives were examined. EU directives need transposition into national legislation and grant Member States some consideration as to their implementation, for instance flexibility to impose additional requirements. Therefore, when transposing directives, the national policy maker may establish a stricter regulatory framework than originally intended in the directive (i.e. so-called gold-plating). These provisions, introduced at national level, were examined from a competition point of view. EU rules that are directly applicable in Portuguese legislation and require no further national legislation, i.e. regulations, were not screened to assess if they restricted competition. In addition, the project team checked Portuguese legislation for duplication with existing EU regulations.

The legislation collected in Stage 1 was analysed using the framework provided by the OECD "Competition Assessment Toolkit".<sup>2</sup> The Toolkit, developed by Working Party 2 of

the OECD Competition Committee, provides a general methodology for identifying potential obstacles in laws and regulations. One of the main elements of the Toolkit is a "Competition Checklist" that asks a series of simple questions to screen laws and regulations that have the potential to unnecessarily restrain competition.

#### **Box A A.1. OECD Competition Checklist**

Further competition assessment should be conducted if a piece of legislation answers "yes" to any of the following questions:

##### **(A) Limits the number or range of suppliers**

This is likely to be the case if the piece of legislation:

1. grants exclusive rights for a supplier to provide goods or services
2. establishes a licence, permit or authorisation process as a requirement of operation
3. limits the ability of some types of suppliers to provide a good or service
4. significantly raises the cost of entry or exit by a supplier
5. creates a geographical barrier to the ability of companies to supply goods services or labour, or invest capital.

##### **(B) Limits the ability of suppliers to compete**

This is likely to be the case if the piece of legislation:

1. limits sellers' ability to set the prices for goods or services
2. limits freedom of suppliers to advertise or market their goods or services
3. sets standards for product quality that provide an advantage to some suppliers over others or that are above the level that some well-informed customers would choose
4. significantly raises costs of production for some suppliers relative to others (especially by treating incumbents differently from new entrants).

##### **(C) Reduces the incentive of suppliers to compete**

This may be the case if the piece of legislation:

1. creates a self-regulatory or co-regulatory regime
2. requires or encourages information on supplier outputs, prices, sales or costs to be published
3. exempts the activity of a particular industry or group of suppliers from the operation of general competition law.

##### **(D) Limits the choices and information available to customers**

This may be the case if the piece of legislation:

4. limits the ability of consumers to decide from whom they purchase
5. reduces mobility of customers between suppliers of goods or services by increasing the explicit or implicit costs of changing suppliers
6. fundamentally changes the information required by buyers to shop effectively.

*Source:* OECD (2011a).

Following the methodology of the Toolkit, the OECD team compiled a list of all the provisions which answered positively to any of the questions in the checklist. Government experts received draft lists and were given an opportunity to comment, as were the members of the HLC. After this stage, there were 2 162 individual articles remaining with the potential to restrict competition in the transport sectors in Portugal.

### **Stage 3 – Analysis of the selected provisions**

The provisions carried forward to Stage 3 were investigated in order to (i) identify the objective of the policy maker; and (ii) assess whether they could result in harm to competition.

The team researched the policy objectives in order to examine the proportionality of the selected provisions with the intended policy objective. An additional purpose in identifying the objectives was to prepare for the formulation of alternatives to existing regulations, when required, taking account of the objective of the specific provisions. The objective of the policy maker was researched in the recitals of the legislation, when applicable, or through discussions with the relevant public authorities.

The analysis of the harm to competition was carried out qualitatively and involved a variety of tools, including economic analysis, collection of background information on the sector and its regulation, and research into the regulation applied in other OECD countries. All provisions were analysed, relying on the guidance provided by the OECD Competition Assessment Toolkit. Interviews with market participants and with government experts complemented the analysis, by providing crucial information on the actual implementation and effects of the provisions.

In the course of Stage 3, several more potential barriers were eliminated from the analysis because the boundaries of the sectors were further narrowed to focus exclusively on the most relevant services for business in the selected sectors. At the end of Stage 3, there were thus 485 barriers left which were deemed harmful to competition.

### **Stages 4 and 5 – Formulation of recommendations**

The team developed draft recommendations for those provisions which were found to restrict competition. In this process, we relied on international experience whenever available. When it was not possible to identify from international practice examples of regulation with a lesser impact on competition, we favoured alternatives which were less restrictive for suppliers while still aiming at the initial objective of the policy maker. For instance, these could be policy changes likely to:

- lower barriers to entry into certain economic activities (e.g. when certain suppliers were prevented from engaging in related products or activities);
- improve the ability of suppliers to compete (e.g. restrictions to marketing and labelling).

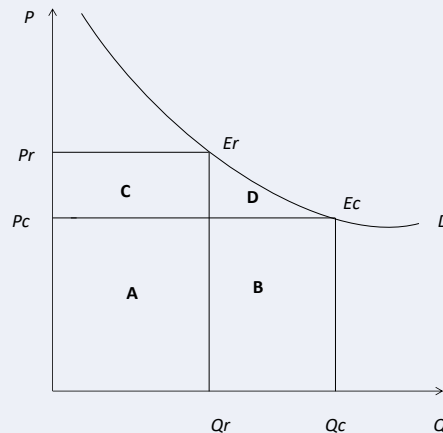
The benefits of removing barriers to competition were analysed qualitatively and, whenever feasible and meaningful, quantitatively. Whenever feasible and appropriate for the analysis of the issue under consideration, the OECD team gathered data that could be used for the quantification of the effects. In these cases, the data were analysed using econometric techniques. In other cases, the expected impact of lifting a regulatory restriction was not modelled directly, for instance because of the lack of sufficient data. Therefore, the OECD team relied on the standard methodology of measuring the effect of policy changes on consumer surplus. In particular, as a result of data limitations, we followed the approach in OECD (2015) which derives a formula for changes in consumer

benefits when only sector revenue and the average price effect of the restriction found are available. This is explained in Box A.2.

### Box A A.2. Measuring changes in consumer surplus

The effects of changing regulations can often be examined as movements from one point on the demand curve to another. For many regulations that have the effect of limiting supply or raising price, an estimate of consumer benefit or harm from the change from one equilibrium to another can be calculated. Graphically, the change is illustrated for a constant elasticity demand curve.  $E_r$  shows the equilibrium with the restrictive regulation,  $E_c$  shows the equilibrium point with the competitive regulation. The competitive equilibrium is different from the restrictive regulation equilibrium in two important ways: lower price and higher quantity. These properties are a well-known result from many models of competition.

Figure A A.1. Changes in consumer surplus



Source: OECD (2015)

Under the assumption of constant elasticity of demand the equation for consumer benefit is:

$$CB = C + D \approx (P_r - P_c)Q_r + \frac{1}{2} (P_r - P_c)(Q_c - Q_r)$$

Where price changes are expected, a basic formula for such a standard measure of consumer benefit from eliminating the restriction is:

$$CB = \left( \rho + \frac{1}{2} \epsilon \rho^2 \right) R_r$$

where CB is standard measure of consumer harm,  $\rho$  is percentage change in price related to restriction,  $R$  is sector revenue and  $\epsilon$  is demand elasticity. When elasticity is not known, a relatively standard assumption is that  $|\epsilon|=2$ . This value corresponds to more elastic demand than in a monopoly market, but also far from perfectly elastic as in a competitive market. Under this assumption, the expression above simplifies as:

$$CB = (\rho + \rho^2)R_r$$

Several economic assumptions were made:

1. We assume away any taxes, i.e., any implication resulting from the taxation regime on consumer surplus.
2. We assume a regular, linear, demand function, with no random term.
3. We do not factor in any interdependence between price and quality levels (although changes in any one of them may have an impact on the other). This is equivalent to assuming that the "quality" of the different services remains constant or experiences non-significant changes. By "quality", we mean a term that can involve a distribution of quality levels depending on who provides the service. The quality mean could remain unchanged as a result of implementing a certain recommendation, but the distribution of such quality over the different service providers could change (mean-preserving spread). In the latter case, even with an unchanged mean, there would be welfare effects just due to the change in the mean-preserving distribution of quality levels.
4. We make no distinction here between Marshallian (relation between prices and income) and Hicksian (relation between prices and utility) demand functions. In any case, since we will be assuming certain values for the demand elasticities ( $\epsilon = 2$ ), these values could be assumed for any of these two types of demand functions.

Source: Prepared using OECD inputs, 2015.

Draft recommendations were submitted to the Portuguese administration. Following consultation with the ministerial experts and the stakeholders, the recommendations were finalised. In total, 417 recommendations (including those on obsolete provisions and administrative burden) were submitted to the Portuguese administration:

- Road: 203
- Rail: 77
- Ports and maritime: 116
- General transportation legislation: 19
- Horizontal: 2

### Co-operation with the Portuguese administration

Another important component of the project was to provide assistance in building up the competition assessment capabilities of the Portuguese administration. The OECD organised four workshops during the course of the project, one in each of the stages. In Stage 1 of the project, we covered an introduction to competition and regulation, and provided an overview of the project and of our methodology in the mapping stage. In Stage 2, the team provided substantive training on the OECD Competition Assessment Toolkit applied in screening the legislation. In Stage 3, examples and applications of quantitative methods were presented. In Stage 4, OECD experts presented two topics relevant for the project: (i) the Product Market Regulation (PMR) index compiled by the OECD and policy analysis which relies on this indicator; (ii) the OECD guidelines on fighting bid-rigging in public procurement.

The government experts provided a significant contribution on the mapping exercise of the legislation by commenting on whether the regulations collected were comprehensive. Subsequently, the close co-operation with the government experts continued with the

identification of the objectives of the legislation in their sectors of expertise and discussion on the provisions identified by the OECD as restrictive on the basis of the Competition Assessment Checklist. More than 100 meetings and phone calls were held to discuss the provisions in detail, to understand to what extent they were implemented in practice and to provide feedback on the OECD's draft analysis of the selected provisions.

## Notes

<sup>1</sup> The LegiX database is owned, operated and managed by Priberam Informática, S.A.

<sup>2</sup> OECD (2011a), Competition Assessment Toolkit: Principles, OECD, [www.oecd.org/daf/competition/46193173.pdf](http://www.oecd.org/daf/competition/46193173.pdf) ;

OECD (2011b), Competition Assessment Toolkit: Guidance, OECD, [www.oecd.org/daf/competition/45544507.pdf](http://www.oecd.org/daf/competition/45544507.pdf)

OECD (2015), Competition Assessment Toolkit: Operational manual, OECD, [www.oecd.org/daf/competition/COMP\\_Toolkit\\_Vol.3\\_ENG\\_2015.pdf](http://www.oecd.org/daf/competition/COMP_Toolkit_Vol.3_ENG_2015.pdf)





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