

Independent Regulators' Group - Rail IRG-Rail

Second report on the charging principle of Article 31 (7) of Directive 2012/34/EU

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Introductory remarks

This paper discusses the charging principle of Article 31 (7) of Directive 2012/34/EU on setting charges for service facilities and reflects the problems and decisions of regulatory bodies when investigating the charges of service facility operators. The discussion in this updated report mainly focuses on experiences and ways of setting charges in IRG member states.

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1 Introduction

1.1 Main purpose of the paper

1. In recent years, charges for the minimum access package (MAP) have been the focus of regulations for track access charges. For the railway market, access to and charges for service facilities are, nevertheless, equally important. This paper focusses on the charging principle related to Article 31 (7) of Directive 2012/34/EU. According to Article 31 (8), the same charging principle is used for additional and ancillary services when offered by only one supplier.
2. According to Article 31 (7) of Directive 2012/34/EU, operators of service facilities should set prices such that *“the charge imposed for track access within service facilities referred to in point 2 of Annex II, and the supply of services in such facilities, shall not exceed the cost of providing it, plus a reasonable profit”*. This is the most important provision for regulation of charges for service facilities. Again, according to Article 31 (8) *“Where services listed in points 3 and 4 of Annex II, as additional and ancillary services are offered by only one supplier, the charge imposed for such a service shall not exceed the cost of providing it, plus a reasonable profit”*. The third provision that needs to be discussed is the rule on reasonable profit, as mentioned in Articles 31 (7) and 31 (8). Reasonable profit, as defined in Article 3 (17), *“means a rate of return on own capital that takes account of the risk, including that to revenue, or the absence of such risk, incurred by the operator of the service facility and is in line with the average rate for the sector concerned in recent years”*.
3. This paper describes the charging principle of Article 31 (7) and of Article 31 (8) of Directive 2012/34/EU on setting charges for service facilities and discusses the most important issues regulators face when reviewing and approving these charges. A first report was published in 2019 and this updated report provides experiences and views of the regulatory bodies (RBs) on the subject. In providing such an overview the paper can assist each RB in its tasks by fostering mutual understanding and learning from approaches used in other countries.

1.2 Structure of the paper

4. After this introduction, the second chapter deals with the specification of the regulated services as described in the Directive 2012/34/EU. The third chapter gives a definition of cost categories, contrasts accounted costs with imputed costs and describes methods for determining a reasonable profit. Additionally, it gives a definition of the weighted average costs of capital (WACC), an instrument to evaluate the return on the invested capital, and a definition of own capital. Chapter four covers the calculation of the charges and discusses the allocation of cost with the full cost distribution approach, the activity-based costing approach and bottom up and top down approaches. Furthermore, it examines the differences between single and dual-till regulation, the different requirements of these approaches to charging regulation, subsidies, and the selection of an appropriate charging unit, as well as setting charges for a period longer than one year. Chapter five discusses efficiency targets and productivity goals and chapter six shows a few cases, how RBs reacted when the economic principle was violated.

2 Specification of services

5. There is no specific definition of services in Directive 2012/34/EU. Among the definitions listed in Article 3 (11) of Directive 2012/34/EU, there is only a definition of the term “*service facility*”. According to this, a “*service facility*’ means the installation, including ground area, building and equipment, which have been specially arranged, as a whole or in part, to allow the supply of one or more services referred to in points 2 to 4 of Annex II”¹.
6. Annex II, which is also referred to in Article 13 “*Conditions of access to services*” of the Directive, lays down four points. The first point defines which services the MAP includes. The second point specifies the access to service facilities whose services have to be supplied by the service facility operator (SFO) in a non-discriminatory manner. Point 3 lists services qualified as “additional” and the fourth point considers “ancillary services”.
7. Furthermore, Article 3 of Implementing Regulation (EU) 2017/2177 states that a service supplied in any of the service facilities listed in point 2 of Annex II to Directive 2012/34/EU shall be qualified as a “*basic service*”.
8. Nevertheless, it follows from the above, that points 2 to 4 of Annex II do not identify explicitly all the concerned services. The absence of a strict identification of the concerned services is overcome by Article 4 of the Implementing Regulation (EU) 2017/2177. In accordance with that article, operators of service facilities shall make available to their customers a description of the service facilities and the rail-related services that are provided under their responsibility.

3 Definition of cost categories

9. Before determining guiding principles for cost calculation, it is essential to define which types of costs may be recognized as the cost of providing the service. While accounted costs can be derived from external accounting, the necessity may arise to compute costs which are not (yet) depicted there. Regarding this, a more in-depth analysis follows in the next section of this paper.
10. Defining these recognizable costs is relevant, because the charge for a service in a service facility may not exceed the cost of providing that service, plus a reasonable profit. Determining appropriate values for “the cost of providing the service” and “reasonable profit” is not straightforward. There are two main ways of determining the cost of providing a service i.e. the bottom-up engineering approach and the cost accounting approach. In any case, in order to determine the cost of providing a service, one must be able to tease out which of the service provider’s costs are to be allowed to count towards this cost.
11. There are different notions of cost depending on the purpose they are used for. A common one is that of “Full cost” which is used to determine the entire cost of a service on the basis of a cost accounting approach and cost allocation procedures (see also Section IV, on cost allocation). Other notions of costs exist such as avoidable cost, incremental cost or stand-alone cost. The most common differences between the above

¹ See Appendix for a list of these services.

different costs concepts rely on the way variable and fixed costs, as well as direct and indirect costs, are considered and included (or not) in the total cost. While variable costs change due to changes in the level of output drivers, fixed costs do not change for a given period of time (in the long run all costs are variable). Direct costs, on the one hand, are directly related to the provision of a service and can be allocated directly to this service in an objective and feasible manner. Indirect costs, on the other hand, are not attributable to a single specific service and, therefore, must be allocated to different services by means of specific cost drivers. The differentiation between direct cost and indirect cost is important for cost allocation, which will be dealt with in a following chapter.

12. Some cost information can be obtained from the external accounting system of the SFO. However, the expenses that are reported in the external accounting system do not specify all costs in detail and concerns the whole company thus not separating the costs that need to be taken into account when calculating the charges. Therefore, some costs are computed and are not part of the external accounting. One example is the reasonable profit, which will be discussed later in subchapter 3.3.
13. Another issue to be addressed when assessing the relevant costs of services is whether only historical costs are recognized or market prices can be applied. The question of market price recognisability may also arise, when subservices for the provision of a service are provided by intercompany charging.
14. In Spain, for example, costs are valued only on a historical base as stated in the Guidelines issued by the RB. The Spanish RB also issued a decision² reviewing tariffs for maintenance services in which it indicated that valuating assets at replacement cost would not be coherent with the economic principle of costs incurred in the provision of the service, as it implied an increase in depreciation cost above the level accounted in the profit and loss statement. Also, cost base calculations in the Netherlands follow the historical cost principle. In Austria, this is true in most cases, but rarely, when valid arguments are brought forward, market prices are accepted too. This would be for example the case for energy prices, where historic cost will not reflect the future market prices and therefore they may be replaced by forward looking prices. The RB would consider this on a case by case basis for input costs the SFO operator has to bear but which actually are pass-through costs.
15. There are, however, other methods used to derive costs which do not involve the use of external accounting systems, such as bottom-up models.

3.1 Accounted costs

16. In accounting, expenses are usually displayed by the nature or the function of the expense. Both methods are foreseen in the IAS³ : *“An entity shall present an analysis of expenses recognised in profit or loss using a classification based on either their nature or their function within the entity, whichever provides information that is reliable and more relevant.”*⁴

² Link to the decision in Spanish: https://www.cnmc.es/sites/default/files/3287705_48.pdf

³ International Accounting Standards (IAS). These standards were issued by the International Accounting Standards Council (IASC), and they set internationally recognized accounting standards.

⁴ IAS 1, recital page 99.

17. The “*nature of expenses*” method differentiates expenditures according to their type. Usually, they are first differentiated between operating and capital expenses. On the one hand, the operating expenses usually cover all ongoing expenditures for running a business or providing a service. This covers the cost for raw materials and used consumables, personnel expenses and other expenses. On the other hand, the capital expenses are related to capital goods (for example, depreciation (tangible assets) and amortization (intangible assets)).
18. In the IAS, it is defined as: *“The first form of analysis is the ‘nature of expense’ method. An entity aggregates expenses within profit or loss according to their nature (for example, depreciation, purchases of materials, transport costs, employee benefits and advertising costs), and does not reallocate them among functions within the entity. This method may be simple to apply because no allocations of expenses to functional classifications are necessary.”*⁵
19. If the expenses are displayed by function, they will be classified according to a functional classification. The following functional classification is used: manufacturing, selling, general administrative, and financing. According to the IAS: *“The second form of analysis is the ‘function of expense’ or ‘cost of sales’ method and classifies expenses according to their function as part of cost of sales or, for example, the costs of distribution or administrative activities. ... This method can provide more relevant information to users than the classification of expenses by nature, but allocating costs to functions may require arbitrary allocations and involve considerable judgement.”*⁶

3.2 Computed costs

20. As mentioned earlier, not all costs can be derived from external accounting. Some costs are determined as valuation in internal accounting (computed costs), providing a more detailed point of view than external accounting. This might stem from a different approach of determining the depreciation of assets.
21. If computed costs are used, it is essential to note, that they always need a sound argumentation and a clear and transparent method of calculation. Otherwise, there is the risk that the SFO gains a higher profit by basing the charges on excessive cost.
22. Seen that prices have to be published in advance and be accessible in some form via the network statement, should market prices be applied, these will have to be computed in some form. In Austria, this has happened in the form of hourly price forward curves.

⁵ IAS 1, recital page 102.

⁶ IAS 1, recital page 103.

3.3 Reasonable profit, WACC and CAPM

23. A definition of reasonable profit can be found in Article 3 (17) of Directive 2012/34/EU. *“Reasonable profit means a rate of return on own capital that takes account of the risk, including that to revenue, or the absence of such risk, incurred by the operator of the service facility and is in line with the average rate for the sector concerned in recent years.”*⁷
24. This subchapter focusses on the WACC⁸, the definition of own capital and the Capital Asset Pricing Model (CAPM), because these are the most common approaches to determine reasonable profit in finance and in regulation. However, there might be other methods for determining reasonable profit which are compliant with Article 3 (17) of Directive 2012/34/EU. Furthermore, it is possible that in some countries the national legislation contains further regulations and guidelines on how to determine reasonable profit.

3.3.1 General approach of the WACC

25. Calculating the allowed rate of return on capital is one of the main elements in defining cost-oriented prices, carrying out price/margin squeeze tests and implementing the regulatory accounting obligations. In the EU, the main method to evaluate the allowed rate of return on the capital invested is the calculation of the WACC.
26. The WACC plays an important role in setting cost-oriented regulated prices because it determines the reasonable rate of return on the capital employed. The determination of the WACC is generally based on historical information and it is considered as forward looking (proxy). It is possible to estimate the parameters in the WACC formula in different ways, and RBs may take different approaches according to parameters such as national economic conditions, availability of data, specific risks (e.g. the degree of wholesale and retail competition, regulatory goals/strategy etc.). When estimating the WACC, RBs have the flexibility to take an approach which supports their national circumstances.
27. WACC is a calculation of a firm's cost of capital in which each category of capital is proportionately weighted according to the following formula⁹:

$$WACC = k_e * \frac{E}{D + E} + k_d * (1 - t) * \frac{D}{D + E}$$

Where:

k_e : Cost of equity
 k_d : Cost of debt
 E : Value of equity
 D : Value of debt
 t : Tax rate.

⁷ Article 3 (17) of Directive 2012/34/EU.

⁸ Weighted Average Cost of Capital (WACC).

⁹ In Germany, for example, a pre-tax WACC is applied, whereby the WACC is divided by (1-t).

28. To calculate the WACC, the cost of each capital component is multiplied by its proportional weight. All sources of capital are included in the calculation of the WACC. The WACC represents the blended cost of capital across all sources, including common shares, preferred shares, and debt.

3.3.2 Definition of own capital

29. A possible question that arises when reading the definition of “reasonable profit” in directive 2012/34/EU is what is meant by the term “own capital” and if this term includes both equity and debt or just equity. Explained differently, own capital could be interpreted to mean either capital that is owned by the SFO, i.e. equity, or capital that is employed in the business of the SFO, i.e. meaning both the capital that is strictly owned by the SFO (equity) and the capital that is borrowed (debt). In Austria, Germany and Norway for instance, the term own capital is interpreted as equity only, and actual debt costs correspond to the interest rate a lender would charge exclusively for the regulated service. In Norway this has been translated in the national legislation. In France, Poland, Spain, as well as in Italy, it is understood as capital employed.
30. Additionally, the definition of reasonable profit in directive 2012/34/EU also mentions that the reasonable profit should be “*in line with the average rate for the sector concerned in recent years*”. This implies that RBs will have to determine which sector is concerned and how many years to take into consideration when calculating a reasonable profit. A possible approach in this regard might be for RBs to calculate a sector-wide reasonable profit based on a study that takes into account a specific number of years and compare that with the cost of equity that a given SFO charges to users. In GB although the charges to access the storage sidings in light maintenance depots is not directly regulated (they are negotiated between the SF owners and users), the RB has the powers to request that they be reviewed if it considers that they are inflated as compared to the charges for similar facilities in the same geographical area. The German RB interprets the second half of Article 3 (17) of the Directive 2012/34 in a way, that it specifies the method, which should be used to calculate the return on equity. That means, that the risk of demand (fluctuating revenues) and the average yield in the sector of the previous years should be considered during the calculation of the return on equity. As a result, this leads to an exclusive usage of the Capital Asset Pricing Model (CAPM), since it complies with above given interpretation. Based on a wide range of benchmark companies, the sector and the risk of demand are considered. The determining beta data are calculated on the basis of historical capital market yields. Essential deviations compared to previous years are prevented because of the consideration of historical yields for example when choosing a 3 years average.

3.3.3 CAPM – Capital asset pricing model

31. The capital asset pricing model is commonly used to calculate the cost of equity. The CAPM describes the relationship between the systematic risk of an asset and the required rate of return. This model is widely used in finance for pricing of stocks, but also for calculating the cost of capital.
32. The model takes into account the asset’s sensitivity to non-diversifiable risk (also known as systematic risk or market risk), often represented by the quantity beta (β_i), as well as the expected return of the market (R_m) and the expected return of a theoretical risk-free asset (r_f). The following formula is commonly used:

$$k_e = r_f + \beta_i * (R_m - r_f)$$

Where:

k_e : Cost of equity

r_f : Risk-free rate

β_i : Systematic risk

R_m : Expected return of the market.

33. A common approach for determining the risk-free rate is to refer to a governmental bond. Usually, for developed countries, the data for a government bond are easily available and this is seen as the most secure investment. The expected return of the market is usually analysed per country by different studies and these data are also publicly easily available for historical data. It is rather difficult to determine the systematic risk in the railway market and therefore this problem will be dealt with in a separate subchapter later.
34. The CAPM approach is used by many SFOs and railway regulators in Europe. Through the consideration of risk of the industry in the model, the CAPM approach fulfils all requirements of Article 3 (17) to determine the reasonable profit.

3.3.3.1 Calculating the Beta

35. The Beta is a measure which is used to determine the volatility of an asset in relation to the market situation.
36. The determination of the Beta is a key component in determining the WACC, which shall indicate whether the service offered is more or less volatile than the market as a whole and so it reflects the risk exposure by comparison to general market movements.
37. The Beta is important because it measures the risk of an investment that cannot be reduced by diversification. It measures the amount of risk the investment adds to an already-diversified portfolio. In the CAPM, beta risk is the only kind of risk for which investors should receive an expected return higher than the difference between the expected return of the market and the risk-free rate.
38. If the company is not quoted on the stock exchange, the Beta of the company (or of an investment) is commonly derived by using the beta of similar companies (or investments), often referred as peer group. The difficulties in determining the Betas for service facilities are that the Beta must reflect a peer group. In the majority of member countries, the infrastructure manager is the major provider of service facilities, and is owned by the State which holds all the capital shares. This means that the infrastructure manager is not listed on the stock exchange. Therefore, it is important to correctly identify the peers in order to estimate the Beta.

39. In Germany, the RB has commissioned different studies over time¹⁰ on the cost of capital that also deal with the determination of the Beta. These studies calculate the Beta for the IM and for service facilities by using a wide selection of peers. The result is a range of Betas, which are seen appropriate for determining the reasonable profit.
40. In GB, the RB sets a WACC but it is not part of the regulatory settlement. It is however used for assessing investment decisions and for some charges
41. In 2016, the Austrian RB used a peer group from the Website of Damodaran¹¹ for determining the Beta for a decision on the railway electricity network.
42. In Italy, the equity beta parameter is estimated on the basis of an analysis of the beta coefficients of a sample, consisting of listed companies operating national or European strategic infrastructure (comparables). Once the equity betas have been identified, they must be stripped of the specific leverage ("delevering") in favour of a notional leverage, aimed at taking into account an efficient financial structure. The asset betas of each company considered in the sample are then derived by using the standard delivering methodology.¹²
43. In Spain, the RB has computed the beta by analysing a peer group compound of national and international companies, which, among their main activities, manage infrastructures related to transport and logistics. This approach was chosen due to the difficulties in finding comparable peers in the field of service facility operation. The problem of finding peers encountered by all RBs.

3.3.4 Ownership of the assets

44. Reasonable profit as a rate of return on own capital implies that SFOs are allowed to charge a profit margin that accounts for the risk of the investments carried out in the provision of the regulated services. In this regard, the abovementioned WACC rate (or any other applicable methodology) shall multiply the asset base, which is compound by the net value of all assets own by the company.
45. However, the determination of the asset base is not that straightforward in practice. A common difficulty that RBs face when analysing this issue is that the SFO is not necessarily the service facility's owner, but rather rents it from a third party.

¹⁰ The most recent ones are Frontier Economics et al.: Gutachten zur Aktualisierung von Betawert und Fremdkapitalzuschlag für Eisenbahninfrastrukturunternehmen – 2023 (Beta and debt interest rate), Bestimmung der Kapitalkosten für Eisenbahninfrastrukturunternehmen – 2022 (Revision of methods and values of CAPM and debt interest rate), Zinssätze für Eisenbahninfrastrukturunternehmen – Konsultation des Methodenberichts – 2021 (discussion of methods) Download: <https://www.bundesnetzagentur.de/DE/Fachthemen/Eisenbahnen/Veroeffentlichungen/Gutachten/gutachten-node.html> Frontier Economics

¹¹ Website of Damodaran: http://pages.stern.nyu.edu/~adamodar/New_Home_Page/home.html.

¹² Measure no. 20 of ART-IT Decision no. 95/2023: https://www.autorita-trasporti.it/wp-content/uploads/2023/05/All.-A-delibera-n.-95_2023.pdf

46. In Spain, for instance, it is quite common to find the so-called “risk and venture model”, in which the operator of the service facility is not the owner of the facility but assumes all the risks derived from the activity. The operator also assumes the payment, generally on a long-term basis, of the rent or fee for the use of the facilities and other elements included in the contract. Most of the times, these contracts also involve long-term commitments and additional investments as well as penalties for premature withdrawal.
47. In relation to the risk and venture model, but also affecting other rental agreements between the SFO and the owner of the facility, there are two main issues to be addressed. The first one deals with whether the rent paid by the SFO should be cost-oriented. According to the questionnaire, in 13 out of 17 countries for which there is available information, such rent of a risk and venture agreement shall be cost oriented. Therefore, in these cases the owner of the facility cannot charge a price which exceeds the cost that it is borne (mainly depreciation and other cost related to the property owned) plus a reasonable profit.



Figure 1: Cost orientation of rent in case of “risk and venture model”

48. Also linked to the previous situation, in some cases the owner of a service facility grants access to rail operators in a “self supply” scheme (i.e. the tenant then uses the premises but the operation rely on their own workforce) as foreseen by Article 3 (8) of the Commission implementing regulation (EU) 2017/2177 of 22 November 2017 on access to service facilities and rail-related services. In that case, again, the majority of the countries who answered to the questionnaire have indicated that the rent for the use of the service facility should be cost oriented.



Figure 2: Cost orientation of rent in case of “self-supply scheme”

49. The second main issue that is linked to the risk and venture model and other rental agreements deals with whether rental payments that are paid for the use of the facilities and other elements should be considered as an investment to be remunerated within the asset base used to compute the reasonable profit. After the introduction of IFRS 16 the problem of off-balance sheet accounting for leases is now only raised in exceptional cases. This means that almost all leases must be capitalized by the lessee and depreciated over the term.
- In Denmark neither a CAPM nor WACC are used to compute the reasonable profit for the three main freight terminals that are supervised and that are all rented. The rental payments are included in the cost base among other costs. There is a reasonable profit that was determined by use of statistic data about the level of profit in the transport branch.
 - In Germany, rental payments are considered being part of the cost base (other operating expenses). They are not part of the asset base used to compute the reasonable profit.
 - In France, most of SFO own their premises. In other rare cases, rent or access for self-supply must be priced cost based. For the operator downstream, as this price would not be categorised as a capital expenditure, no additional reasonable profit should be considered comparably as in Germany.
 - Italy reported that in the application of its monitoring and control activity, the regulatory authority did not dispute the inclusion in the asset base of the present value of rental payments for which there is a real risk for the lessee, and accounted for in accordance with the provisions of IFRS 16. However, there is no explicit provision in the Authority's regulation and/or decision on this specific issue.

- The Netherlands argue that rental payments are just costs and not investments / assets that justify a return on capital.
- In Spain, the SFO can include the present value of future payments of the rental contract if there are penalties foreseen in case of default and if the SFO assumes all risks associated to the activity.
- In Sweden, the market for rail-related services is quite diversified and it is not uncommon for SFOs not to own the actual service facility they operate. The RB has not however produced any decisions in the context of regulating the calculation of rent in the mentioned context so far. The same goes for estimating reasonable profit when there is no own capital employed. It should be noted that the WACC-approach is not used in Sweden.
- Bulgaria, Croatia, Latvia, Lithuania, Poland and Slovakia comment that the rental payments for the use of the facilities and other elements can be considered as an investment to be remunerated within the asset base used to compute the reasonable profit but that no investigation has been carried in some of these countries.
- In GB, the RB considers the rents for service facilities are commercial matters which are negotiated between the SF owners and SF operators. For stations, the long-term charge (LTC), which is designed to cover the cost of maintenance, repair and renewal of station assets, is payable by the SFO to the IM. The SFO can recover some of this charge from any beneficiaries that use the station. The beneficiary's contribution is based on its number of departures from the station as a proportion of the total number of departures. In addition, the Qualifying Expenditure (QX) at stations is a charge to recover the costs that the SFO incurs in the day-to-day running and operation of the station. The SFO can recover some of these costs from any beneficiaries that use the station. The beneficiary's contribution is calculated in the same way as that for the LTC. Another example is the charges to access the storage sidings in light maintenance depots. In GB, the Access Agreement between the SFO and the users of light maintenance depots contains a section/ schedule indicating the charge for storage (which they negotiate). The RB approves this agreement. However, the RB has the power to request a review of the charge if, for instance, it is considered inflated as compared to the charge for the same services in similar facilities. The regulator in GB remediates this by comparing the charge to the market prices in the vicinity of the service facility.

3.4 Calculating profit for services with no capital employed

50. As mentioned in the paragraphs above, reasonable profit is defined as a return on own capital employed which considers the risk incurred by SFOs. Some RBs experienced cases where calculating this reasonable profit became problematic due to a very low level of own capital employed of the SFO. There are two sides to this issue:
1. the economic argument for why the reasonable profit depends on the own capital employed and
 2. the reason why some operators have only very little own capital employed.

3.4.1 Economic argument for the calculation of reasonable profit

51. SFOs are to be rewarded for the risks they have taken to run the business. Economically speaking, the main risk of operating a service facility comes from the opportunity costs of the own capital employed. The reasonable profit of a service facility varies according to the amount of own capital employed and the

interest according to the systematic risk of the industry. Hence, if almost no own capital is employed, the reasonable profit is accordingly supposed to be lower.

3.4.2 Reasons for a low level of fixed own capital

52. Some service facilities have near to no own capital employed. There are two cases; 1) they perform a service that does not require investments in assets such as machinery or infrastructure, either because they are not needed to provide the service or because assets are fully depreciated but still in use, or 2) they only operate the SF and do not own it as discussed in 3.3.4.
53. For the first case, if the reasonable profit, calculated using the WACC approach or another method, is not sufficient to remunerate the risk, an additional remuneration may be considered, if the national legislation allows it. In France, for example, security services provided by SNCF and RATP in passenger stations and on trains should be priced according to the cost of service, plus a reasonable profit like for SFO. This service is an example where systematic risk¹³ in the sense of CAPM exists, yet there is almost no own capital employed¹⁴.
54. Another example for this case is that of Denmark. The Danish RB has determined the level of reasonable profit in a case with no or low capital employed by using a mean of profit margins within the transport industry over a time frame of 5 years.
55. In Spain, the RB stated that WACC shall be applied on the net value assets and on the working capital. This reference to the working capital would be relevant for services with no capital employed, but that need to finance its operating needs and short-term liquidity. Therefore, in these cases, a reasonable profit is charged even when there are no actual long-term investments.

4 Calculation of charges

56. For the calculation of charges, it is necessary to allocate the costs to the right service. If this is not done properly, there is a risk that users of the service facility cover additional costs, therefore charging an unreasonable profit or cross-subsidising another activity. Only costs that are necessary for providing the service should be allocated.
57. After earmarking the specific costs for each service, an appropriate charging unit is chosen, reflecting the service's use. Differentiation in charges may be introduced (for example, to reflect the differences in the use of the service), if it is not discriminatory.
58. To elaborate on this, the following paragraphs deal with cost allocation, Single-till versus Dual-till regulation, subsidies, charging units, differentiation in charges, projected demand and cost of providing a service, and multi-annual charges.

¹³ This includes systematic risks of demand on demand and costs.

¹⁴ Staff of this police service are sworn officers with long official training and staff cannot be adjusted according to the level of the activity. This implies a risk which can be covered by a reasonable profit.

4.1 Separation of accounts

59. Directive 2012/34/EU encompasses regulations regarding the separation of accounts in article 6 which deals with separation of infrastructure management and transport operations and in Article 13 which covers conditions of access to services. Article 13 (3) states that *“To guarantee full transparency and non-discrimination of access to the service facilities referred to in points 2(a), (b), (c), (d), (g) and (i) of Annex II, and the supply of services in these facilities where the operator of such a service facility is under direct or indirect control of a body or firm which is also active and holds a dominant position in national railway transport services markets for which the facility is used, the operators of these service facilities shall be organised in such a way that they are independent of this body or firm in organisational and decision-making terms. Such independence shall not imply the requirement of the establishment of a separate legal entity for service facilities and may be fulfilled with the organisation of distinct divisions within a single legal entity. For all service facilities referred to in point 2 of Annex II, the operator and the body or firm shall have separate accounts, including separate balance sheets and profit and loss accounts.”*
60. Often SF operators are organized in a company which has other activities (for example RU activities) apart from operating the individual SF. This means that the traditional annual accounts for the company typically covers other activities than the individual SF. The operator should produce internal accounts covering the SF and thus separated from other activities in order to get a reliable cost base and to avoid cross-subsidization.
61. RBs are responsible for ensuring compliance with these provisions. In order to ensure that price regulation is adequately fulfilled when the SFO provides several services and, at least, one of them is regulated, a minimum reporting standard can be required, so the RB can control that prices of individual services are accurately and correctly cost-oriented. Therefore, for an efficient review by the RB, the SFO might be requested to provide disaggregated information that enables the RB to trace the methodology used to calculate individual prices, implying that cost allocation methods and cost drivers are correctly applied and individual prices are objective and transparent.

4.2 Cost allocation

62. As mentioned above, for the calculation of charges it is necessary to allocate the right costs to the right service. In general, costs can be differentiated in costs which are directly caused by the service, the direct costs, and costs which are necessary for providing the service but cannot be allocated to the service directly, the indirect costs.
63. Only in exceptional cases does the SFO offer only one service. This makes the allocation of costs easy. When the SFO offers more regulated services or other unregulated services, the cost allocation becomes more complex.
64. In general, direct costs can be directly allocated to a specific service and are often directly accounted with the different services. The allocation of indirect costs is more difficult.

65. There is a diversity of cost allocation methods. On the one hand, top-down approaches are based on accounting costs allocations. In a “pure” top-down approach, cost allocation is based on proportionality rules (according to the level of the direct costs for example). On the other hand, bottom-up approaches allocate constructed costs¹⁵. A “pure” bottom-up approach aims at allocating constructed costs of an efficient operator. However, in practice, allocation methods are rarely “pure” top-down or bottom-up approaches but rather “hybrid” approaches, more flexible. There is a diversity of cost allocation methods, as well as a wide range of cost allocation keys applicable. Many allocation rules may be used, like proportionality rules depending on cost drivers, sequential allocation rules, economic allocation rules (Shapley-Shubick) or allocations based on bottom-up modelling for example.
66. In practice, two top-down methods are commonly used for the allocation of indirect costs: full costs distributing and activity-based costing. Only when it is not possible to allocate costs directly or it is not economically feasible to do so, a full costs distribution or an activity-based cost approach could be used. As requirement for a top-down cost allocation to different services is that the cost base is clear and any costs without relation to the service facility are excluded from the cost base.

4.2.1 Full costing, full cost distribution and Activity based costing

67. Full cost distribution or full costing is a commonly-used approach to determine the entire cost of a service, and is also used in the IFRS as well as in the US GAAP for financial reporting. The concept is most commonly used for recording the full cost of inventory in the financial statements.
68. The essential concept behind full costing is to assign all variable costs to a service, as well as an allocation of overhead or fixed costs. A cost object is anything about which cost information is collected, such as a customer, product, service, store, geographic region, product line, and so on.

4.2.2 Full cost distribution

69. The overhead and indirect costs are allocated to the different service by using different cost keys/drivers. The cost allocation keys should be closely linked to the causation of the costs. For example, costs for cleaning can be allocated by the number of the square meters of ground. For the overhead cost, the cost key can be the already allocated costs for the service.
70. Full cost distribution is a rather simple approach for cost allocation and requires rather less information on the service than other cost allocation approaches. Therefore, it is a common approach, especially in accounting. The selection of the cost key is essential to avoid a wrong cost allocation and a possible cross-subsidy.

¹⁵ In a bottom-up model, the activities of the service facility are broken down into functional units. The cost of each functional unit (operating expenses and investments) is based on cost drivers and unit cost assumptions from different sources (including data from other sectors for example).

4.2.3 Activity-based costing

71. Activity-based costing (ABC) is an accounting method that identifies and assigns costs to activities and then assigns those costs to services. An ABC-system recognizes the relationship between costs, activities, and offered services, and through this relationship, it assigns indirect costs to services. This is less arbitrary than traditional methods, like the full cost distribution. For the allocation of indirect costs, activity-based costing uses no cost keys, but uses activities for cost allocation. The requirements for an ABC cost distribution are far more available data and a deep understanding of the processes in the specific service facility.

4.3 Single-till / Dual-till regulation

72. This chapter discusses the single-till and dual-till regulation approaches related to service facilities in the railway sector. The choice between single-till and dual-till is heavily debated in the literature and there are different arguments for the possible pros and cons of either approach. This paper does not show a preference for single-till or dual-till, but it only briefly highlights the possible arguments and gives some case-studies.
73. Since most service facilities show features of natural monopolies, authorities consider it necessary to control the charges for service facilities and access to the service facility infrastructure. When a service facility operates both commercial and non-commercial activities (non-regulated and regulated activities), an issue arises. For example, the success of the commercial activities at railway stations is predominantly related to the RUs' demand for train services. This results in a relation between regulated activities like access to the network/train services and commercial activities with potential cross externalities. Due to these mutual dependencies between both activities, it appears to be worth considering a regulation of charges following a dual-till or a single-till approach.

4.3.1 Single-till versus dual-till

74. Under the single-till principle, all activities of service facilities (including commercial and non-commercial) are taken into consideration when determining the level of charges. This contrasts with the dual-till approach, where only regulated activities are taken into consideration when setting charges, and common costs are split and charged to each separate activity.
75. It could be argued that the single-till approach is justified when there is interdependency between the regulated and commercial activities. However, the existence of this interdependency between regulated and commercial activities is a necessary requirement for applying a single till approach. Charges under a single-till approach might result in the sharing of profits generated by commercial activities. In this case, the commercial services subsidise the regulated service and eventually leads to lower charges for regulated activities.
76. To illustrate this, let's use the case of passenger stations. Since regulated activities bring in passengers who use commercial services and contribute to their profitability, it could be considered reasonable that charges for regulated activities should also benefit from profits of commercial activities. Employing single-

till instruments could be advantageous over dual-till regulation, since monopoly rents from commercial activities are shifted to the users, who also created these revenues as passengers¹⁶.

77. In the economic literature, passenger stations (like airports) may be regarded as a two-sided market (or platform)¹⁷. On the one hand, the SFO of a passenger station provides rail related services to RUs and, indirectly, to passengers. On the other hand, the SFO provides areas for commercial services (shops, restaurants, etc.). The passenger station plays the role of a platform, which enables passengers and shops to meet: the more passengers use rail transport services, the higher turnover the shops and restaurants in the passenger station get. The positive externality¹⁸ on the commercial/unregulated activities may argue for a single-till approach, or a compensation mechanism from the unregulated activities to the regulated activities. If the unregulated activities subsidize the regulated activities, through a single till, it may be beneficial to the passengers (if RUs lower the prices of transport services because they incur lower charges or if they offer additional transport services for example) and may increase the number of passengers in the station.
78. However, without appropriate enforcement of regulations there is also a risk that the opposite occurs when the regulated services cover costs of the commercial activities. The risk is increased by the fact that the SFO gets the incentive to invest in projects, which are seen economically risky and in which the SFO would not invest, if the costs could not be transferred to the infrastructure charges. This may result in higher regulated charges. As Article 31 (7) mandates that RUs should only bear costs of the regulated service, this would violate the Directive. Therefore, any single-till approach needs to ensure that this cannot happen by requesting the operator to provide separate accounts showing the costs only for the regulated activities. A dual-till approach makes sure that the regulated activities do not cover more costs than necessary for providing the service.
79. Single-till regulation is often assumed to be simpler to control as there seemingly is no need to determine the costs of regulated activities separately from commercial activities. However, due to the rule in Article 31 (7) that RUs should only bear costs of the regulated service, any operator not using dual till would have to prove that this limit is not exceeded. The logical tool for that would be to use a separated accounting system for the two types of activities.
80. Furthermore, within a single-till approach, the RB needs to extend the scope to non-regulated activities, e. g. defining the costs of capital for unregulated activities (WACC). In practice, this may raise some problems,

¹⁶ A. I. Czerny and Anmin Zhang, Single-Till versus Dual-Till Regulation of Airports, 2015, <https://papers.tinbergen.nl/15049.pdf>.

¹⁷ According to Jean Tirole a two-sided market (or multi-sided market) is “a market in which an intermediary enables sellers and buyers to interact” (Jean Tirole (2017), “Economics for the common good”, Princeton University Press. According to Glen Weyl (2010), a two sided-market denotes a style of industrial organization modeling with three features : the platform is a multi-product firm (it provides distinct services to two sides of the market, with different prices), the platform generates cross network effects (user’s benefits from participation depend on the extent of user participation on the other side of the market), the platform holds a bilateral market power (the platform is a price setter on both sides of the market (Glen Weyl (2010), “ A theory of multi-sided platforms”, American Economic review 100.

¹⁸ By externality one means an economic effect that results from an economic choice of an economic agent (a firm, a consumer ...) on other agents, without monetary compensation set by market prices.

as for WACC the beta of similar companies is needed, and such similar companies usually do not have regulated activities.

81. On the other hand, single-till regulation may give less incentive for efficient investments to develop commercial services.

4.3.2 Single-till or dual-till per country

82. The choice for single-till or dual-till approach differs among the countries. Most countries use a dual-till approach to calculate the charges of the regulated activities. However, there are also a few countries, which have a different approach or use combination of a single-till and dual-till approach. This paragraph highlights these case studies.

France

83. In France, the SFOs have usually opted for a dual-till approach, except for passenger stations. Regarding passenger stations, a hybrid approach applies: 50 % of the profits generated by the unregulated activities are transferred to the regulated activities and lower the costs and the charges of the regulated services. A single-till approach, following the same costing methodology, would have increased the charges in many passenger stations because many "commercial areas" are vacant. This hybrid approach ensures that the commercial services subsidise the regulated services and not the opposite. This rule is in the French legislation for passenger stations only. French law mandates neither approach for the other service facilities.

Germany

84. The largest operator of passenger stations is using a dual-till approach. Thus, there is a separation of costs, which is examined by the RB every year. Using the dual-till approach, there are no direct benefits from commercial profits. However, currently the operator of passenger stations does not entirely charge the allowed rate of return for its regulated activities due to sufficient profits in the commercial area. So directly there is no benefit from using the dual-till approach for the level of the service facility charges, but there is an indirect one, as the SFO does not set the charges at the maximum level. This would be allowed according to the regulation law (costs plus profit), but the SFO chooses to set the charges below this level because of the high profit ratio in the commercial activities. This is an own decision by the SFO and primarily not inherent in the dual till-approach.

Italy

85. In Italy, for the national IM a hybrid system is foreseen: commercial activities (not connected with the rail infrastructure) contribute to reduce the charges for 50% of the excess over a reasonable profit of the net margin (revenues less cost, net of depreciation), while other commercial activities from the use of rail infrastructure contributes for 100% of their gross margin. For other SFO, a dual-till approach is foreseen.

GB

86. In GB, a single-till approach is used. Track and station access charges are set every five years during a Periodic Review in which the RB sets the outputs that the IM has to deliver and the funds it needs. During this process, the IM submits its strategic plans to the RB. The submission includes the income that the IM expects to earn on activities such as commercial properties including service facilities (most of SFs are owned by the IM but are operated by private SFOs subject to a rent/lease fee negotiated between the IM and the SFO). This income is called "Other Single-Till Income" and is scrutinised by the RB. This income is then deducted from the gross revenue requirement. This leaves the RB with the "net revenue requirement" that it uses as the basis to set track and station access charges.

Spain

87. In Spain, a dual-till approach is in place for the access to and the services provided in service facilities. The guidelines provided by the RB¹⁹ also state that SFOs shall report information on cost split by the different services, meaning that each regulated service shall not exceed its cost of provision. Consequently, SFOs shall implement methodologies to properly allocate cost to the different services using reasonable key drivers.

Austria

88. In Austria, the RB has dealt with a few cases where this topic is touched. Here, the IM uses a dual till-approach, which the RB has approved of. There is no explicit mandate in the Austrian law for either approach, though. Costs are separated in the accounting systems of the IM, the RB does some extensive examination, determining the correct allocation of costs to the various service facility products via expert opinions.

4.4 Charges at different facilities operated by the same entity

89. Another topic related to the calculation of charges deals with the situation in which the same SFO operates a plurality of facilities and provides the same services under homogenous standards. In a situation such as this, the same company offers the same service at different locations or markets from a geographical perspective. This could be the case of a SFO that runs different workshops across the country or an operator of different freight terminals in distant parts of the territory.

90. These facilities are formally independent as they are, in themselves, separated spaces. However, since they are operated by the same party that provides the same or homogenous services, it is reasonable to think that they could be operated under the same standards and that the SFO might want to set a single price for a given service in all the facilities. Alternatively, that same SFO might want to opt for a differentiated offer that identifies individual prices for each facility covering the same service.

91. Whether the single price or the differentiated offer pricing policies are in line with the economic principles of the regulation for charges at service facilities deserves to be carefully analysed in light of the interpretation of the different RBs. Out of the 19 RBs that provided their interpretation of this situation,

¹⁹ See Decision by CNMC. <https://www.cnmc.es/sites/default/files/4280050.pdf>

18 regulators claim that SFOs are entitled to set a single price for the same service in different service facilities. The Danish RB clarifies that, according to the national law, setting a single price is only possible for SFOs without a dominant position in the market. Finally, the Romanian RB explains that, in practice, SFOs prefer to set up a single price for each type of service, no matter where the facilities are located. The reason is that it is more convenient for SFOs to calculate costs to an overall level due to accounting, business strategy and other practical reasons.

92. With regards to the reverse practice, to differentiate prices of charges per service facility, again, 18 member-RBs claim that this is as well a possibility. In this case, the Bulgarian RB claims that this is not possible in that country.
93. Indeed, some RBs mention that both practices are potentially compliant with the regulation, although SFOs shall always fulfil the requirement set by the Directive, thus ensuring that final prices do not exceed the cost of providing the service, either if it is a single price or different prices per service facilities.
94. In order to comply with the regulation, if a single price is set for multiple facilities, all service facilities are treated as a major single facility. This implies that all allocated costs and assets used for the provision of the same service across the different facilities are grouped together and divided by the applicable charging unit to obtain a unitary price. For example, the largest German IM calculates prices for categories of a service facility (i.e. train stations of medium size). The national law (Railway Regulation Act) states in section 32(1) that the charges imposed for track access within service facilities shall not exceed the cost of providing them, plus a reasonable profit. This is checked by comparing the total costs and the total revenues of a SFO. Section 32(2) direct to set the charges such that they are equitable, non-discriminatory and transparent.
95. Nonetheless, as expressed by the Finish RB, which does not have experience with related cases, each situation shall be assessed case-by-case. In France, where both alternatives are possible, SFOs may be encouraged to propose one single price for different reasons the readability and clarity of the offer. In Italy, the limit for the charge is defined as the sum of the costs of all the facilities managed, in relation to the volume of total expected demand. If the costs of the service differ from one plant to another, the setting of a single price is subject to the verification of certain conditions (non-discrimination, the need for simplification and cost containment of the fee imposition and collection system, etc.)²⁰. Finally, in Spain, the SFO can choose to offer a single price or different prices as long as it does not distort competition and cost allocation rules are respected.

4.5 Subsidies

96. In a number of countries, some SFOs receive subsidies from the state for offering a regulated service. The state provides the subsidy as it has an interest that the service is offered or that it is offered at a lower price than full cost. However, it is clear that the subsidy needs to be considered when the charge for using the service facility is set at the cost for providing the service, as this subsidy is given to cover costs that are not to be paid by the RUs.

²⁰ For more information, see measure 48 of decision no. 95/2023 (<https://www.autorita-trasporti.it/delibere/delibera-n-95-2023/>)

97. When the subsidy is granted to cover a specific cost, it must reduce this cost when determining the cost for the service. If the subsidy is granted for offering a specific service, it must reduce the costs for offering this service.
98. However, subsidies can be granted for operational expense as well as for investments. If these are granted for specific investments, they usually reduce the cost of capital as the subsidies are deducted from the net book value of the assets and the depreciation for the useful time of the investment.

4.6 Charging unit and differentiation in charges

99. Before the calculations of the charges are done, the correct charging unit must be selected.
100. The used charging unit should reflect the utilization of the service properly. Any unit that may lead to a discrimination of users must not be used. The general approach is to define the level of charges on the basis of cost orientation in order to provide accurate charges and to avoid abusive cross-subsidies. The selection of the charging unit should then reflect the cost drivers.
101. When charging units are selected, it is possible to differentiate charges to reflect a different use of the service. When there is a differentiation in charges, this must be based on solid evidence and needs to reflect different needs/uses of the customers. Otherwise, it may result in a discrimination of groups of customers.
102. Differentiation in charges may encourage a most efficient use of the service. The charging units may then reflect incentives that lead to an efficient use or to avoid bottlenecks. Nonetheless, it is essential that the differentiation in charges does not result in the total charges exceeding the sum of eligible costs plus a reasonable profit.
103. Here is one example, where the differentiation of charging units was judged by the RB discriminatory for station prices:
 - In Austria, the IM charged differently for stops at stations for short-distance trains and long-distance trains. The argument was that passengers of long-distance trains need more and different services than customers of short-distance trains. Therefore, the charges for long-distance trains were about 25 % higher than for short-distance trains. As the IM could not provide proper evidence for the higher costs, the RB declared the higher charges for null and void.

4.7 Projected demand and cost of providing a service

104. Usually, the costs for providing the service will be set in relation to the projected demand volume per charging unit.

105. The projection of the demand volume is essential for setting the charges and the overall cost of the SFO providing this service also depend on the volume of demand for his services. On the one hand, if the projection is too high, it may lead to charges below the correct level and therefore to a loss of the SFO for providing this service. On the other hand, if the projected volume is too low, it would result in charges that are set above the appropriate level and may lead to an additional profit for the SFO.
106. The risk that the projected volume of demand is not met is part of a company's usual business risk and must be reflected in the reasonable profit. However, the risk is that the demand volume is rather projected too low than too high. Therefore, proper evidence for arguing the estimated demand volume needs to be provided. Usually, historical data are a good starting point, and significant deviations need to be explained. Also, further market developments need to be taken into account and need to be discussed with reasonable evidence.

4.8 Multi-annual charges

107. This chapter focuses on discussing the principles of calculating multi-annual charges the different methods to calculate multi-annual charges, including indexation, price indices, correction mechanisms, and touches upon some case studies in the EU.

4.8.1 Principles of multi-annual charges

108. As the directive 2012/34/EU does not foresee any regulation on setting the charges on a yearly basis, it is possible to calculate charges for service facilities for more than one year. There are several reasons for setting multi-annual charges. An important argument to calculate multi-annual charges is efficiency, since it reduces the administrative costs of RBs and operators of service facilities. In addition, multi-annual charges provide predictability to investors and allow RUs to develop clear strategic plans because they know the level of charges for a longer period of time.
109. There are, however, a few conditions for setting multi-annual charges. First of all, the growth paths of the underlying costs should be relatively steady over the years. The growth path of costs can be increasing or decreasing, but it has to be predictable. If costs vary too much it is difficult to use methods to predict future costs in an accurate manner. Second, the tariff bearer – for example the volume of demand - should be steady or any changes in demand should be predictable in the same way. This ensures a good representation of the actual costs over multiple years.

4.8.2 Indexation

110. A technique to adjust annual charges to multi-annual charges is indexation. Indexation is used to set charges for upcoming years based on a level of costs which is in pace with the expected inflation. Cost which are in pace with the expected inflation are supposed to be a good predictor of the expected level of actual costs in future years. To predict inflation and purchasing power several price indices are developed.

111. Price indices are usually developed for a specific category of goods or services, during a specific time period and a specific geographical location in the form of a normalized average or a weighted average of price variables. It compares how these price variables, taken as a whole, differ between time periods or geographical locations.
112. There are broad (national) indices, for example indices which measure a society's general cost of living or more specific indices for a sector, or user group. In this case, the better the price index is pegged to service facilities, the rail, or transport sector in general the better it is expected to reflect the actual costs in future years.
113. In the Netherlands a combination of two indices is applied, where the consumer price index (CPI) as well as an index specific to historic railway prices is used to set multi-annual charges for the MAP. CPI measures changes in the price level of a sample of consumer goods whose prices are collected over a set period of time and predicts expected changes in price level in future years. The annual percentage change in a CPI is used to estimate inflation. For calculating the multi-annual charges of the minimum access package CPI is used to adjust for these effects of inflation. CPI is calculated by the Dutch statistical agency and it is considered to be the most reliable index available which predicts future changes in price level.
114. Also, in Denmark, multiannual charges may be set based on indexation for a limited number of years between adjustments of the charges based on unit costs for each individual type of service plus reasonable profit. As this is new legislation though, no case has been dealt with multiannual charges based on indexation yet.
115. In GB the charges are set for a 5-year control period and are annually indexed using CPI.
116. In Germany, charges are not limited for a year, which means that once approved charges are valid as long as the IM has no intention to recast or modify conditions for the use of a service facility (this includes principles as well as levels of charging). An exception is the approval procedure for the charges of passenger stations and operators of passenger platforms, which is given for one calendar year. As most of the passenger station operators are exempt from this approval procedure, there is only one operator, whose charges are limited to the calendar year.

4.8.3 Correction mechanism

117. Setting multi-annual charges increases the risk of over- or undercharging since its cost allocation is based on a predicted level of costs in future years. To minimize this risk a correction mechanism could be put in place. When some costs (budgeted or actual) are considered to deviate too much from the original predicted costs, for example beyond a specified bandwidth, the level of charges can be adjusted.
118. For example, in France the manager of the passenger stations has introduced a correction mechanism for the cost of capital: for the major passenger stations with a total amount of investment over the last three years exceeding 5 M €, when the amount of the investments is lower than expected, a correction of the charges and the bills is made ex-post to reduce the fee.

5 Productivity and performance objectives

119. According to recital (3) of the Directive 2012/34/EU (“Recast”), “the efficiency of the railway system should be improved, in order to integrate it into a competitive market, whilst taking account of the special features of the railways”.
120. Although not mandatory, productivity and performance objectives for SFOs may enhance the railway system's efficiency. Both are complementary: productivity goals aim at controlling the costs of the service and relate, therefore to the economic management of the SFO. Performance objectives refer to the quality of the rail-related services provided in a service facility and relate to the operational performance of the SFO.
121. According to recital (71) of the Directive “Recast”, “Railway infrastructure is a natural monopoly and it is necessary to provide infrastructure managers with incentives to reduce costs and to manage their infrastructure efficiently.” Recital (71) is in line with the economic theory, which underlines the inefficiencies of a monopoly (higher prices, lower production, a lack of incentives to reduce costs and to innovate [...]).
122. In Member countries, some service facilities or services are not operated or provided in a competitive market environment with a variety of competitors providing comparable services. Moreover, some service facilities are “essential facilities” implying that they are in a natural monopoly market. According to recital (17) of Commission Implementing Regulation (EU) 2017/2177 “Building a service facility requires significant investments and the network character of railways implies that there are limitations on where facilities can be constructed; as a result, many service facilities cannot easily be duplicated”.
123. The principle of a cost-based approach should not be interpreted as the recognition of a model exempting the SFO from any effort to control or even reduce its costs. According to article 31(7) of the Directive 2012/34/EU, operators of service facilities should set prices such that “the charge imposed for track access within service facilities referred to in point 2 of Annex II, and the supply of services in such facilities, shall not exceed the cost of providing it, plus a reasonable profit”. The Directive does not require that the charge covers the cost of providing a service but sets a ceiling for the charge. As a result, the estimated expenses considered for the calculation of the charge can include a level of productivity, reducing, therefore, the estimated costs of the SFO.

5.1 Productivity and performance objectives

124. The productivity objectives proposed by the SFOs should be calculated on the basis of operating expenses for which they consider to have levers for action, that is upon which they can influence the level of the expenses concerned (recurrent expenses, personnel expenses in particular).
125. In line with the price cap theory, considering a productivity goal for the calculation of the charge would incentivize the SFO to exceed its productivity objective, without degrading performance. Any additional

cost would be borne entirely by the SFO. Symmetrically, the additional productivity gains that could be achieved beyond the productivity objective may be kept by the operator.

126. As regards performance, it is important to notice that the level of operational performance and quality of service is related to the level of the estimated expenses. Therefore, it is essential to specify the performance objectives justifying the amount of the charges. The quality of service, however, is not as such a quantifiable element, which makes it complicated to measure. To evaluate the quality of service, it would be necessary to define specific indicators. The definition of indicators and performance objectives could be accompanied by a bonus / malus incentive mechanism to make credible commitments in terms of quality of service. When using productivity and performance objectives the RB should verify that the incentive mechanisms are sufficiently ambitious, so the SFO optimizes the operation of its service facility. However, the RB should also ensure that the incentives are not set too strict which would result in it having a decreasing effect on the quality of service. It should be noted that the powers of the RB to set performance and productivity objectives is strongly dependent on national charging schemes and national legislation.
127. According to IRG-Rail's knowledge, actual decisions regarding performance and productivity objectives for service facilities have only been made in France, Great Britain and Italy. In France, two decisions²¹(settlement of disputes) deal with productivity and performance, both for the operators of passenger stations. In 2017, the French RB asked SNCF Gares & Connexions to define (after consulting stakeholders (RUs...)) performance objectives, indicators to measure them and a financial incentive mechanism to make them be credible to achieve. Since 2018, the managers of passenger stations have introduced several quality of service indicators (for cleaning, availability of elevators and escalators, passenger information, satisfaction...) with annual objectives and a financial incentive scheme. In GB, the station long-term charge (LTC) is set at the level that the RB considers to reflect the IM's efficient operational target.
128. Since then, the regulation of tariffs for regulated security services was included in the new French regulatory framework established by Decree 2021-598 of 14 May 2021. For the first time in the rail transport sector, this decree includes an explicit reference to the costs of an efficient operator for the charging of regulated security services. This decree thus provides that the tariff for regulated security services must be "established with regard to the cost of the service, which must be that of an efficient operator, plus a reasonable profit". This regulatory change, which responded to a long-standing request from the ART, has legally reinforced the application of a more incentive-based regulation with regard to the level of tariffs for regulated security services. At each annual review of the proposed security services tariffs proposed by SNCF and RATP, the French RB has endeavoured to measure the correct cost of security services, on which the hourly tariff is based, taking into account the human and technical resources used by SNCF and by RATP to provide these services.
129. In Italy, a targeted annual efficiency rate on operating cost, determined by the Authority, is provided for the facility operators falling under Type A (where facilities are managed and services are offered under

²¹ www.araferr.fr/wp-content/uploads/2017/03/D%C3%A9cision-2017-008-du-1er-f%C3%A9vrier-2017-RDD-Nouvelle-Aquitaine-c-SNCF-Gares-et-Connexions-VERSION-PUBLIQUE-3.pdf and www.araferr.fr/wp-content/uploads/2017/03/D%C3%A9cision-2017-018-du-22-f%C3%A9vrier-2017-RDD-Nouvelle-Aquitaine-c-SNCF-R%C3%A9seau-VERSION-PUBLIQUE.pdf

scarce competition). The value is assumed equal to the minimum value between 50% of the planned inflation rate, for each year of the regulatory period, and the annual efficiency rate set for the national railway infrastructure manager. For the regulatory period 2024 – 2028, the efficiency rate has been set at 1.25%.

130. With regard to the tariffs for security services offered by SNCF, the first submission for the year 2021 had received an unfavourable opinion from the French RB, due to the lack of consideration of the notion of efficient operator in the elaboration of its tariffs. Finally, the second tariff proposal for 2021 and the tariff proposal for 2022 submitted by SNCF received a favourable opinion, as SNCF followed the regulator's recommendations and committed to a work programme that will ensure the integration of a reference to the costs of an efficient operator as a basis for the tariffs for security services.
131. Similarly, an unfavourable decision was at first issued on the proposed tariffs for RATP's security services, mainly because the notion of an efficient operator was not taken into account. After RATP drawn up a work programme similarly to SNCF, the French RB was finally able to issue a favourable opinion.

6 Level of charges exceeding eligible cost plus reasonable profit

132. If the charge exceeds the eligible cost, plus a reasonable profit, it would contravene the economic guidelines outlined in Article 31(7) and (8) of the Directive as presented in this paper. In such a scenario, the national RB must take measures to ensure that the economic principles are upheld. The RB's competences and course of action will be contingent on the national law in the different states. This section outlines several instances in which RBs have responded to violations of the economic principle delineated in this paper.
133. In Austria, if the RB determines that charges exceed the permissible cost plus a reasonable profit, the RB has the authority to lower the charges to the level of the eligible cost plus a reasonable profit through an official decision. In such cases, the SFO is obligated to reimburse any excess charges that have been paid. The RB has accepted different charges of the service as long as the differentiation is based on a non-discriminatory approach and the sum of charges did not exceed the eligible cost plus reasonable profit.
134. In Denmark, the RB having determined the eligible unit costs + reasonable profit for each type of regulated service, the next step is to compare these values with the actual charges set by the operator. For charges exceeding unit costs plus reasonable profit the normal procedure is to request the operator to lower such charges. However, the regulatory approach in this situation might depend on whether the investigation is based on a complaint or whether it is an ex officio investigation. In case of an ex officio investigation the RB can choose a more lenient approach, i.e. in terms of only requesting the operator to bring his charges in line with Article 31 (7), from a specific date forward in time, instead of also requesting the operator to lower charges that have been already paid. This approach has been chosen a few times in ex officio investigations of terminal charges by the Danish RB.
135. In Spain, the Guidelines issued by the RB state that cost orientation is fulfilled if costs accounted in the audited profit and loss statement plus reasonable profit do not exceed incomes obtained from the

provision of a given service. This comparison, however, is done by analysing average costs and incomes of the last three available years.

7 Appendix

136. The following list contains the service facilities, and additional- and ancillary services listed in Annex II of Directive 2012/34/EU.

"2. Access, including track access, shall be given to the following services facilities, when they exist, and to the services supplied in these facilities:

- (a) passenger stations, their buildings and other facilities, including travel information display and suitable location for ticketing services;*
- (b) freight terminals;*
- (c) marshalling yards and train formation facilities, including shunting facilities;*
- (d) storage sidings;*
- (e) maintenance facilities, with the exception of heavy maintenance facilities dedicated to high-speed trains or to other types of rolling stock requiring specific facilities;*
- (f) other technical facilities, including cleaning and washing facilities;*
- (g) maritime and inland port facilities which are linked to rail activities;*
- (h) relief facilities;*
- (i) refuelling facilities and supply of fuel in these facilities, charges for which shall be shown on the invoices separately.*

3. Additional services may comprise:

- (a) traction current, charges for which shall be shown on the invoices separately from charges for using the electrical supply equipment, without prejudice to the application of Directive 2009/72/EC;*
- (b) pre-heating of passenger trains;*
- (c) tailor-made contracts for: — control of transport of dangerous goods, — assistance in running abnormal trains.*

4. Ancillary services may comprise:

- (a) access to telecommunication networks;*
- (b) provision of supplementary information;*
- (c) technical inspection of rolling stock;*
- (d) ticketing services in passenger stations;*

(e) heavy maintenance services supplied in maintenance facilities dedicated to high-speed trains or to other types of rolling stock requiring specific facilities.”