

# POLICY BRIEF

## EUROPEAN TRANSPORT REGULATION OBSERVER

### Towards international passenger corridors

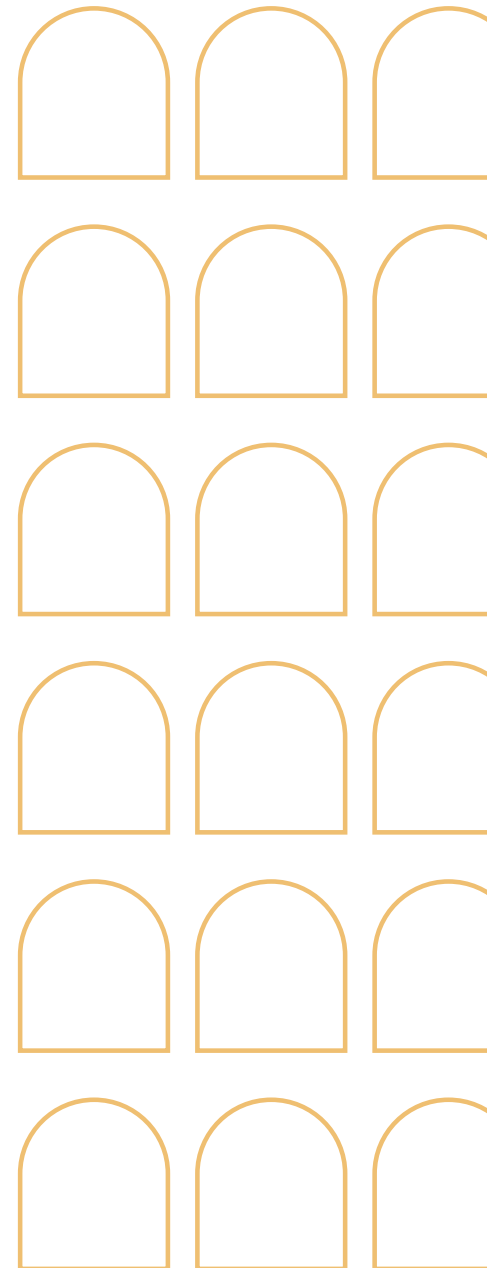
#### Highlights

Railway transport is the backbone of sustainable mobility. The modal share of passengers transported by rail in the EU Member States reached 6.9% in 2018. According to the '[Sustainable and Smart Mobility Strategy](#)' high-speed rail traffic should triple by 2050. To make this happen, the TEN-T corridors need to be completed by 2030. More cross-border projects will be needed to integrate all Member States into a European rail system, in turn establishing smooth interconnections for cross-border rail travel across Europe. To speed up the process, the European Commission will propose in 2021 an action plan to boost long-distance and cross-border passenger rail services. The year 2020 has shown that the railway system is not only sustainable and safe, but also very resilient. The post-COVID-19 period is a unique opportunity for railway undertakings to tap the unused potential and develop more rail passenger services, especially in cross-border contexts. Night trains could increasingly compete with short-haul flights and stimulate European tourism, making the increasing supply of international rail passenger services vital for the success of the [European Green Deal](#) and for completing the [Single European Railway Area](#) (SERA). Recently significant steps have been made in that direction: four big European rail companies [are giving night trains a boost](#). Despite these latter improvements, the degree of competition in the railway sector remains fairly low.

The [4th Railway Package](#) was set to complete the market opening process by reducing competitive imbalances and harmonising regulations among the national rail systems. The main aim is to grant all players equal access to national markets; encourage competition and innovation; and boost safety, interoperability, and reliability across the region. There have been occasional attempts in the past

#### Authors

Juan Montero, Matthias Finger, Teodora Serafimova



Issue 2021/18  
May 2021

at the national level and the full market opening as of 14 December 2020 opens to considerable changes for the development of the SERA. The opening of the EU long-distance passenger-rail market will have a significant impact on both operators and investors, potentially benefiting the entire rail industry. It could mean more international city-to-city connections, more frequent path usage and cross-border services, including night train services. However, to make these processes run smoothly, there is room for enhancement.

The *harmonised EU-wide vehicle approval*, which would result in a reduction of costs for cross-border trains, has just started. Fair *track access charges* for the new entrant operators must be guaranteed to allow a competitive framework. Another bottleneck is *the rolling stock*. Liaison of standard trains to minimise investments and fair access to State guarantees and financial opportunities for all operators is how it should work in theory, but the question remains: if it will be manageable in practice. Passengers' awareness about their rights should be improved, and the *non-discriminatory provision of travel information* should be ensured, including *through-ticket offers*.

Against this backdrop, the 21st Florence Rail Forum, co-hosted by the Transport Area of the Florence School of Regulation and the Commission's DG MOVE, explored the possible development of international passenger corridors to support the development of long-distance and cross-border rail passenger services.

## Building a European Railway Network for Long-Distance Passenger Services

A comment by Juan Montero and Matthias Finger, Florence School of Regulation – Transport Area

The European Green Deal has set ambitious objectives on the decarbonisation of transport. Railways will have to play a key role, as such ambitious decarbonisation objectives can only be met if a substantial proportion of passengers currently travelling by plane and by car will shift to rail.

Long-distance passenger services provide the most obvious opportunity for rail to grow. In Europe, long-distance often means cross-border. Yet, at the moment, only 7% of all cross-border trips are made by rail (Rail Market Monitoring, 2021). But, in order to meet the Green Deal objectives, the number of high-speed rail passengers must double by 2030 and triple by 2050.

To achieve these objectives, we will have to simultaneously act on three layers and make sure that these three layers are well coordinated, namely the infrastructure, the services and the digital layers.

### 1. The infrastructure layer

Railways have been built as national systems and not as an integrated European network, which explains the low numbers of cross-border rail passengers. Multiplying the number of long-distance cross-border rail passengers inevitably requires a substantial increase in infrastructure capacity. However, as important as increasing funding is funding of the right projects, requiring strategic investments.

High-speed rail services have proven their ability to substitute aviation in distances up to 1,000 km (Montero & Finger, 2020). This has been the experience in southern Europe, as national high-speed services in France, Italy and Spain have beaten aviation as the preferred transport in city pairs such as Paris-Marseille, Milan-Rome and Madrid-Barcelona. In some cases, high-speed modal share has reached 90%, and air services have been terminated, as they could no longer compete.

However, high-speed infrastructure has been

mostly developed following national priorities, aiming to connect the largest cities within a Member State. Cross-border high-speed infrastructure is still rare, despite the success of Thalys, the service connecting Paris, Brussels, Amsterdam and Cologne and Eurostar, connecting London with the continent.

The next step is to connect the existing fragmented national infrastructure to improve traveling times between the European Union's largest cities. The 1,000 km threshold puts many European metropolises within distance to have a competitive high-speed service, particularly in Western and Central Europe.

Night train services are also a competitive alternative to aviation. They do not rely on speed to match aviation, but on the contrary, they rely on the ability to travel long distances during the night while passengers sleep. Ambitious plans are being presented by railway undertakings, particularly in Central Europe, spreading South to Rome and Barcelona, and North to Hamburg and even to the Nordic capitals. Investments are necessary for night services, not only in dedicated rolling-stock but also in bottleneck infrastructures in selected cities. Still, night train services require fewer investments than high-speed and can be a viable alternative for lesser demand routes.

Consequently, EU investments must play a role in the development of cross-border infrastructures, as such investments are often neglected by the Member States. EU investments must also play a role in the development of infrastructure components for interoperability. For example, investments into the deployment of the European Rail Traffic Management System (ERTMS), can increase capacity by 30% in the existing infrastructure.

These are policies that have been in place for decades already. These policies need to step up to the task and the subsequent investments need to be increased in order to meet the challenges of the Green Deal, but action on the other two layers is also needed.

### 2. The services layer

Interoperable cross-border infrastructures are a pre-requisite to building a European rail network, but they are not sufficient. Equally important is to ensure smooth services across infrastructure managed by different entities in

the various Member States. Such coordination at the services layer will take different forms and should address at least the four following points:

First, it is necessary to coordinate the allocation of infrastructure capacity. Cross-border services require the allocation of coordinated track paths by all the infrastructure managers along the route. At the moment, path allocation is made following an EU-harmonised procedure, but it is separately implemented by each infrastructure manager, as national rules define the allocation priorities. Today, no effective mechanisms to coordinate the allocation procedures across infrastructure managers exist.

Rail Freight Corridors could indeed provide a model for the coordination of infrastructure managers (RailNet Europe Path Coordination System). However, more stringent coordination mechanisms could and should be envisaged, be it in the form of more formal coordination between national infrastructure managers or even in the form of an EU body, just like in aviation (EUROCONTROL), allocating paths to cross-border services.

Second, it is necessary to coordinate traffic management. As disturbances occur due to technical failures and accidents, but also due to delays in other services, infrastructure managers have to react in real-time and allocate new paths to railway undertakings. Again, such re-allocation is done separately by each infrastructure manager, with little coordination for cross-border services. Once again, the Rail Freight Corridors could provide a model for better coordination. However, as passenger services require direct routes between cities (as passengers are more time-sensitive), and as a high number of corridors would be necessary, a corridor approach might not be as effective for passengers as for freight services. On the contrary, a single coordination mechanism, at least for the Trans-European Transport Network, could be more useful. A harmonised performance scheme could also be of use so as to incentivise improvements in traffic management, again, like is observed in aviation.

Third, track access pricing varies from country to country. While Directive 2012/34 sets the common charging principles (i.e., direct costs, plus mark-ups up to the extent the market can bear them), track access charges vary greatly, ultimately reflecting the different ways to fi-

nance the railway sector (always a combination of subsidising the infrastructure manager and the railway undertakings, mainly in the form of Public Service Obligations compensations).

A cross-border service will benefit from low access charges in some countries but might face difficulties in assuming high access charges in other countries, in particular, if there is no compensation in the form of PSO compensations for the cross-border service.

Therefore, the creation of a specific EU funding instrument for cross-border services would help build a more sustainable economic model for such services: EU funding could, for example, support the payment of EU-harmonised mark-ups on top of the direct access cost to the different infrastructure managers across a corridor. Such a harmonised mark-ups could be used as a signal for all market players. It could be an incentive for infrastructure managers to prioritise cross-border services in track allocation and traffic management more generally.

Fourth, and closely connected to the previous point, is the definition of a Public Service Obligation scheme for cross-border services. Regulation 1370/2007 applies to cross-border services, but it does not include specific instruments to define obligations at the EU level, or finance them. Intervention is left to Member States, despite the apparent difficulties and lack of incentives for States to coordinate for the implementation of these services. As a matter of fact, the role of PSOs in long-distance services is very controversial. However, as there is now pressure to promote long-distance railway services, including high-speed and night services, and to harmonise the financing of these services, it seems increasingly urgent to clarify the role of PSO compensations in these types of services.

Still, it is clear that European coordination instruments, both operational and financial, are needed to create European-wide rail transport services on top of the fragmented national infrastructures.

### 3. The digital layer

While the challenges at the infrastructure and at the services layers are well known when it comes to cross-border passenger rail transport, our understanding of the challenges at the digital layer is less advanced. Also, it is not yet

entirely clear how the digital and the two physical layers above will be linked with one another. What is however, clear is that digitalisation provides new opportunities for the coordination of fragmented systems as it is the case of European railways, both at the services and the infrastructure layers. In fact, digital platforms are increasingly perceived as being the ultimate instrument (layer) to build network effects (Montero & Finger, 2021).

Digital technologies permeate the entire value chain. It has already been pointed out how ERTMS improves the interoperability of infrastructure. Digital technologies can also be applied at the service layer, facilitating the automated exchange of information among infrastructure managers to serve cross-border services both in the track allocation procedures and in the real-time response to traffic disturbances. Furthermore, digital technologies can improve the communication between infrastructure managers and railway undertakings offering cross-border services. These Business-to-Business (B2B) applications can substantially increase efficiency in complex and fragmented infrastructure systems, such as European railways, even more so when it comes to cross-border operations.

What is new is that digital platforms now also have come to play an active role in Business-to-Consumer (B2C) relations. Access to information and through-ticketing has traditionally been perceived as an important challenge for cross-border passenger services. While ticketing is very sophisticated in aviation, both in terms of functionalities and even regulation (Regulation EU 80/2009 on a Code of Conduct for Computerised Reservation Systems), ticketing in railways is, so far, lagging behind.

But digitalisation does more than that: it has profound disruptive effects in all the industries, and it will not be different in railways. Indeed, digital platforms should not be seen as mere computerised reservation systems or mere distribution channels for transport service providers. They should also not be perceived as mere instruments to facilitate market entry in a liberalised industry. Experience in other industries shows that digital platforms can create unprecedented network effects to the point that they become the ultimate coordinator, and therefore arbiter, of the underlying fragment-

ed (infrastructure and services) systems, and by doing so, replace the traditional players as coordinators. In other words, the balance of power between infrastructure managers and transport services providers on the one hand and digital platforms on the other can evolve to the point so as to make the traditional players mere commodities. In other words, infrastructure managers and train operating companies will be working for the platforms and their algorithms.

In conclusion, this power of the digital platforms has to be kept in mind when coordinating cross-border passenger transport, be it along corridors or more generally. One must also consider that the EU is already working on regulating these platforms, and such regulation will necessarily override data sharing and ticketing regulation in railways.

## References

- Montero J. & M. Finger (2020). Railway Regulation: a comparative analysis of a divergent reality. In: Finger, M. & J. Montero (Eds.). *Handbook on Railway Regulation. Theory and practice*. Cheltenham: Edward Elgar, pp. 1-20.
- Montero, J. & M. Finger (2021). *The Rise of the New Network Industries. Regulating Digital Platforms*. London: Routledge.
- Rail Market Monitoring (2021). Seventh monitoring report on the development of the rail market under Article 15(4) of Directive 2012/34/EU of the European Parliament and of the Council, COM(2021) 5 final.

## Main takeaways from the discussion

By Teodora Serafimova, Florence School of Regulation – Transport Area

### Market Opening and International Passenger Corridors (IPCs)

[The European Commission's seventh monitoring report on the development of the rail market](#), published in January 2021, shows that the share of international rail traffic in terms of passenger kilometres remains very low, representing only 7% of all cross-border trips. A predominant portion (ca. 60%) of rail passenger services are provided under public service obligations (PSO). The share of alternative operators in the market is also very low, accounting for 14%, whereas only 7% of these operators are genuine, private newcomers. The European high-speed rail network is 9.169 kilometres long, which may be partially responsible for the limited success of long-distance cross-border rail traffic in Europe. One of the objectives of [2021 as the European Year of Rail](#) is to reverse these trends by attracting more passengers to rail in the aftermath of COVID-19.

The [European Green Deal](#) calls for a 90% reduction in greenhouse gas (GHG) emissions from transport by 2050 compared to 1990 levels. The more recent [Sustainable and Smart Mobility Strategy](#) puts forward several concrete milestones and corresponding actions to green transport. More specifically, the Strategy foresees that high-speed rail traffic volumes should double by 2030, whereas by 2050, rail freight traffic should double and high-speed rail traffic triple. The Strategy envisages that by 2030 all scheduled collective travel of under 500 kilometres should become carbon neutral within the EU.

One key initiative stemming from the Strategy is the Commission's proposal for an action plan to boost long-distance and cross-border passenger rail services. This plan, to be published in late 2021, would build upon efforts by all rail stakeholders to render key connections between cities faster by means of managed capacity, coordinated timetabling, pooling of rolling stock, as well as targeted infrastructure improvements to boost new train services, including night services. In view of the implementation of this action plan,

the Commission will be launching pilot services with a view to demonstrate the validity of the action plan's milestones.

What is more, a study has been commissioned to an external contractor to explore the existing potential of long-distance cross-border passenger services, including night services, while also comparing rail traffic to competing modes such as air and coaches. The study will analyse the main barriers, including those pertaining to the enactment of seamless ticketing for passengers, the availability of rolling stock, the high track access charges, technical and operational barriers, infrastructure capacity allocation, and not the least, the structuring of cross-border PSO services. The [21<sup>st</sup> Florence Rail Forum](#) provided a timely platform for discussion ahead of the publication of the final action plan on international passenger corridors (IPCs) in September 2021.

### Can we create efficient capacity for the development of long-distance and cross-border passenger rail services over IPCs?

Doubling the share of high-speed rail traffic by 2030 and tripling it by 2050 will necessitate a significant increase in cross-border rail traffic, with required yearly growth rates in the range of 7%. Currently, the only country to have achieved similar growth rates is China. Furthermore, the EU aims to complete a multimodal and smart core network by 2030 and establish a comprehensive trans-European transport network (TEN-T) by 2050. High-speed lines have historically been built at the national level, meaning that cross-border links are largely missing. The creation of these cross-border links is a priority under the ongoing TEN-T efforts. Having said that, participants cautioned that the TEN-T network, on its own, will not suffice given its bottom-up nature. Instead, the need for a top-down approach was underlined in establishing IPCs, whereby national resources are to be pooled together to create a European network.

The realisation of a high-speed network connecting all capitals and major cities was highlighted as one of the key pillars to achieving set EU objectives, and to effectively enabling railways to compete with aviation. To this end, a number of issues will need to be addressed in order to ensure a satisfactory customer experience, pertaining to the affordability of rail tickets, the speed and duration of rail passenger travel,

as well as the on-board services provided during the trip (e.g., 5G and 6G connectivity). Significant infrastructure investments will be key to reducing rail trip duration to reasonable levels, to securing seamless connectivity for the passengers, and to improving the overall customer experience with a view to making rail a viable substitute for air travel up to 800 kilometers. Furthermore, stakeholders underlined the need to consider intermodal competition from the perspective of the passenger (i.e., ‘door-to-door’ as opposed to ‘station-to-station’), which in turn underscores the need for investments not only in railway infrastructure but also in mobility interface infrastructures.

The existing high-speed routes in the different European countries today are planned and operated without a European perspective, which hinders the creation of IPCs. It was argued that smarter, albeit smaller in quantity, infrastructure enlargements in nodes can generate greater effects on network capacity for passenger trains. There was support for the pre-conditioning of EU financing on TEN-T projects, which increase capacity and network effects for international passenger traffic.

Investments in the construction, maintenance, and upgrading of new railway infrastructure are indeed key to increasing the capacity and quality of infrastructure and rail passenger services. Notwithstanding, railway infrastructure is very costly and requires long-term planning. This highlights the importance of optimising the use of existing capacity and the role of digitalisation in achieving this. Investments in digitalisation can increase capacity by 30%, thereby reducing the need for physical capacity investments. On the other hand, the timetable and capacity management redesign will act as game changer for capacity use optimisation as a short-term solution. The transformation of operations through a combination of the European Rail Traffic Management System (ERTMS), Automated Train Operations (ATO) and Automated Train Supervision (ATS) were said to also increase capacity, punctuality, interoperability, safety, and in some cases, output in terms of performance (e.g., speed). Running trains efficiently and in an interoperable manner, thanks to harmonised common operational rules, can decrease cross-border delays and strengthen capacity.

While aviation and rail are in direct competition with each other on certain lines, the two modes

can also interact synergistically by cooperating and connecting with each other. This, in turn, is reflected in the recently published Dutch Action Agenda for rail and air travel jointly developed by the Dutch Ministry of Infrastructure, KLM-Air France, Schiphol Airport, the largest operator NS and infrastructure manager ProRail. The congestion crunch, which most major airports were facing in the period leading up to the COVID-19 pandemic, coupled with the growing responsibility to green the aviation sector, have been the main driving forces behind the Action Agenda. Schiphol Airport’s environmental strategy has set out that the airport may only grow under the condition that a substantial part of its short-haul flights are replaced by rail trips. A study by Rebel Group has, in fact, found that the replacement of a significant share of short-haul flights with rail would result in reductions of ca. 2-8 million tons of CO<sub>2</sub> emissions yearly in Europe, which is equivalent to emissions from the Netherlands’ entire road transport sector. A modal shift to rail would, furthermore, support the mitigation of other environmental effects of aviation namely, vapor trails, and NOx, among others.

The elaboration process of the Action Agenda offers a number of valuable learnings. Though it has constituted a high political priority, the agenda was not backed up with additional public funding for new investments. Another rather obvious obstacle has been the fact that the interests of the aviation and railway stakeholders are not always aligned. For instance, while the two modes can be complementary to each other on connecting routes, they are still in direct competition for the origin-destination passengers. Though the booking horizon in the Netherlands has been enlarged since the launch of the Action Agenda, a number of persisting ticketing issues need to be resolved, including short booking horizons and limited passenger rights in case of missed connections. Rail connections for early morning and late evening flights are still not sufficiently developed, and neither are seamless luggage and check-in options for air-rail connections. Reliability and punctuality of high-speed rail services can be further improved, both in terms of infrastructure and cross-border cooperation (e.g., through virtual traffic control).

While the Dutch experience offers an illustrative example of how complementarity can be sought between two competing modes to improve medium-distance routes (e.g., city-airport connections), ÖBB’s NightJet strives to encourage a

growth in passenger rail trips by improving connections over longer distances (800-2000 kilometers). As noted above, high-speed rail is an integral part of the solution, though its operation requires costly infrastructure and long-term planning. Conversely, night train services can provide a quicker alternative to boosting the capacity of rail transport within Europe. Though a relatively 'old fashioned technique', night train services are being modernised thanks to the roll-out of new trains and new ticketing techniques. The NightJet network, which currently covers 10 European countries, and has many of its routes passing through three different countries, has announced plans to expand (i.e., the capacity of night trains) across Europe by 50% by 2025.

Night trains, however, are confronted with similar problems as freight trains, namely a lack of priority and the lack of sufficient capacity, especially in nodes. The prioritisation of regular commuter trains displaces single long-distance services, such as international night trains or high-speed rail, which need to enter nodes during morning peak hours.

Two approaches were put forward to improve bottlenecks and resolve the above-mentioned problems at the EU level. The first approach relies on optimising the capacity allocation process: something which is currently not practised in most countries. Forum participants argued that network usage concepts (NUC) for cross-border routes throughout Europe should be developed to secure path capacity in the long term. Across the TEN-T corridors, there are prearranged train paths for cross-border freight services (e.g., the corridor from Rotterdam to Genoa), though not for international rail passenger services. Following the NUCs, yearly traffic timetable and network usage plans (NUP) for IPCs could be developed. The biggest challenges in the local commuter network and traffic are that if you are creating NUPs, as is being done in Switzerland, you have to ensure that these NUPs offer sufficient flexibility, especially during peak hours for integrating international long-distance traffic. Passenger demand for long-distance travel can only be met if long-distance trains, especially night trains, can enter into nodes during certain hours.

The second approach relies on increasing the capacity through targeted investments in the nodes. New routes need to be created in order to relieve the heavy concentration of traffic on

a limited number of routes. The creation of by-passes for separating freight and passenger services in larger stations and nodes will be needed to mitigate congestion. Additional capacity in the nodes can also be created by means of increasing the number of platforms, not necessarily by creating new lines. For instance, certain stations would have to be enlarged with additional platforms of adequate usable length to accommodate trains and create appropriate change nodes for passengers with flexible operational performance. Stakeholders were aligned over the fact that boosting physical capacity and establishing a network of international services is best achieved by means of a European Master Plan.

### **How to harmonise track access charges along the IPCs?**

Since the opening of the market in 2013, we have seen rapid growth across both the long-distance bus and train passenger markets across some European countries. The market opening has enabled newcomers to enter the market and tackle new customer segments, offering more affordable services. Sweden is one of the countries where a level playing field and successful market opening have been achieved throughout the last decade. This is visible in the numbers, where train services have picked up, and increasing numbers of passengers use rail and other sustainable modes of transportation.

A recent Eurobarometer study shows that citizens perceive rail travel positively for its 'green' attributes, though they also expect it to offer the same traits as air travel in terms of frequency, affordability, and duration. 55% of citizens are not prepared to pay more to travel by rail. Getting the share of passenger rail services to take off also on the international level will only be possible once a level playing field and a full market opening have been secured Europe-wide. The current barriers holding back international services include divergent approaches to the setting of track access charges (TACs), fragmented regulations (e.g., different rolling-stock requirements), artificial entry barriers and high cash-burn rate without securities, especially for new market entrants. Many of these discrepancies do not pertain to the physical railway infrastructure, such as tracks, but rather the regulations, and can thus be easily harmonised.

The discussions in this second thematic session of the forum focused, in particular, on the



harmonisation of TACs for international rail traffic services. From a regulatory point of view, there is no difference in the charging systems between international and national services. [EU Directive 2012/34](#) tasks infrastructure managers (IMs) with the setting of charges. Its Article 31(3), in particular, stipulates that the charges for the minimum access package and for access to infrastructure connecting service facilities shall be set at the cost that is directly incurred as a result of operating the train service. In order to obtain full recovery of the costs incurred by the IM, a Member State may, if the market can bear it, levy mark-ups on the basis of efficient, transparent and non-discriminatory principles while guaranteeing optimal competitiveness of rail market segments (Article 32 (1) on exceptions to charging principles). An independent regulatory body (RB) oversees the efficient management and fair and non-discriminatory use of rail infrastructure. The Commission [Implementing Regulation \(EU\) 2015/909](#) provides the modalities for the calculation of the cost that is directly incurred from operating the train service and the details on how IMs should calculate their direct costs.

The two components are, therefore, always the direct cost and the mark-ups to cover the full cost of the IM. These largely depend on the national system, the levels set by the RB and by the finance ministry. As the direct cost is more or less fixed by the Commission's Implementing Regulation, the level of public funding is the other determining factor that influences the level of the mark-ups. There are two primary revenue streams for the financing of costly railway infrastructure: the charges and public funding. Therefore, it was noted that the bigger the share of public funding, the less will need to be charged via track access charges to cover the total costs of the IM. Decreasing the charges, in turn, opens up the possibility for more actors to enter the market.

Another key element of a charge is the segmentation, i.e., the definition of the traffic segment. In Italy, for instance, the regulatory body fixes the market segment, and the IM calculates the TACs in the different segments. In the German model, on the other hand, there is no differentiation of charges paid in terms of product offering addressing different customer segments. This, it was argued, limits growth within the sector. Instead, some supported a reduction of mark-ups for the first 5-10 years for new services, thereby creating a level playing field for all operators.

Like any other public transport business, the railway sector continues to suffer the consequences of COVID-19, with railway undertakings' (RUs) ability to pay being significantly reduced. At the same time, however, the COVID-19 crisis enabled Member States to gain practical experience with the reduction, deferral or waiver of the payment of TACs. Going forward, participants emphasised the need for public intervention: in the form of direct support to the IMs to reduce TACs and/or to operators to cover the TACs, in order to ensure the economic sustainability of the international railway sector. The reduction of TACs will be key to securing equal chances of entering the market to new entrants. Furthermore, regulatory support would be needed to enhance flexibility for IMs in the realm of Article 8 of Directive 2012/34. In this regard, it was noted that in the Italian context, Decision No. 96/2015 fails to fully empower IMs to quickly react and change their commercial offer (i.e., the prices in the 5-years regulatory period 2016-2021 remain unchanged for the moment).

The harmonisation of TACs needs to be viewed in the broader context of the debate on the internalisation of the external costs of transport with a view to creating a level playing field. Here the existence of two types of level playing fields was pointed out, both of which would need to be addressed, namely the more comprehensive, inter-modal level playing field, and the intra-rail level playing field. When it comes to the more comprehensive one, the implementation of the polluter pays principle will be necessary, whereby all charges should be set at the level that reflects their external costs.

Achieving an internal level playing field within the railway sector, on the other hand, entails a set of complex mechanisms to define the direct cost of the mark-ups. Mark-ups, it was argued, should be levied to the extent that competing modes are also paying external costs. If these competing modes are not paying their external costs, rail should receive a reduction of its charges. Current efforts at the multimodal level are bearing limited results, as illustrated by the ongoing reform of [Directive 2011/76/EU](#) (the 'Eurovignette Directive') on the charging of heavy goods vehicles for the use of certain infrastructures. There was consensus over the need to provide long-term planning for infrastructure access and to lower infrastructure charges as these are primary barriers to entry, especially for new market entrants.

In view of this, the harmonisation of TACs along IPCs or alternatively, the removal of mark-ups on particular corridors, was put forward as a possible way forward. This is something, which has already been done in the rail freight sector through the RFCs, and which is discussed in further depth below.

Whereas EU funding (e.g., Connecting Europe Facility), has traditionally focused on infrastructure building, the discussions touched upon the prospect of a more active role for EU funding in cross-border services, either as cross-border PSOs or in more creative forms (e.g., aid to pay TACs). The ongoing revision of the [Community Guidelines on State aid for railway undertakings](#) seeks to define good schemes of State aid in favour of startups and new business models in relation to the provision of services. Participants were aligned over the need to finance interoperability and soft measures besides physical infrastructure. In particular, financing should support the European harmonisation of processes and information exchange of rail IMs, including the harmonisation of national legislation to enable improved cross-border services. Furthermore, actions, which support the improvement of international capacity and performance management on the existing rail infrastructure should be financed.

### **Can we make progress in digital platforms for online search and ticket purchase, including through ticketing?**

A platform can be defined as a digital space where the transportation offer meets the transportation demand. Its main function is to ensure simplicity and efficiency for the customer. A European digital one-stop shop for rail will be instrumental to realising the Single European Railway Area (SERA) and to making rail travel easier. The need to progress towards digital platforms is not only key to meeting passengers' expectations but is also being amplified by the current context of COVID-19. Three key levers were highlighted to achieving the needed progress, namely client-centricity, a pragmatic approach to the offering, and a conducive regulatory framework. The French 'LOM' ([La Loi d'Orientation des Mobilités](#)), adopted in 2019, was pointed out as a good example setting the regulatory framework for mobility by providing for open data to empower local authorities and

carriers (including railways operators) to build their own services and subsequently bring these to the customers.

While it was pointed out that the technology is already there, the necessary market conditions and regulatory framework are still missing. Making progress towards digital platforms on the European scale will be key to addressing the existing asymmetric contractual relationships between RUs and third party ticketing platforms. This asymmetry, it was argued, can lead to barriers to rail ticketing market entry for third party ticketing platforms. The barriers can come in the form of discrimination on access to rail content leading to discrimination between EU travellers, namely, no access to real-time travel information and no rail product parity (fares, season tickets). Barriers can also manifest themselves as a lack of fair, reliable and non-discriminatory (FRAND) commercial terms, thereby impeding the fair competition between ticketing platforms and hindering rail competition altogether. This can, furthermore, act to slow down investments in ticketing innovation or digital marketing, which, in turn, are essential to boosting the attractiveness of rail and increasing its modal share.

The [Fourth Railway Package](#) regulates the relationship between IMs and RUs, however, it falls short of setting provisions to regulate the commercial relationship between RUs and ticketing platforms. The creation of a Single European Railway Ticketing Area was underlined as central to facilitating online search and ticket purchase, including through-ticketing. To this end, a horizontal regulation was called for, which sets legally binding provisions at the EU level to regulate the commercial relationship (i.e., business agreements) between all RUs and all ticketing platforms (be these independent or vertically integrated to RUs). Such regulation would ensure a level playing field through FRAND terms, including viable remuneration, capacity to advertise online the products sold to attract travellers to rail, as well as equal access to all data and products (including all fares).

The Swedish case was, once again, highlighted as particularly interesting in this context, given its liberalised rail market, high degree of competition on the tracks, numerous active train operators, and practical experience with multi-modal travelling for 30 years. This success can be, at least partially, attributed to the fact that of-

fering to the customer has been centralised in one single place. Samtrafiken, which connects Sweden's public and private transport operators, coordinates all national transport data and develops ticketing standards. Through its service Resplus, transport operators have been able to offer combined and multimodal travel across the country by bundling their products. Resplus offers a combination of tickets distributed to a large network. Its central administration has been instrumental in maintaining simplicity and securing the attractiveness of products.

Customer-centricity has been another characteristic inherent in the set-up of Resplus. In other words, customers are guaranteed the same terms and conditions throughout the entire journey and provided with clarity in the eventuality of disruptions. Quality assurance is achieved through reasonable interchange times in the system and inclusion in the ticket offer. Another important element has been access to the sales channels. In Sweden, all train services are accessible through one API channel, making it easy to be a selling party.

Mobility as a service (MaaS) providers need to be enabled to communicate and exchange data with all mobility providers, which, in turn, can be facilitated by standardising the data flow. In the Netherlands, for instance, TOMP-API in MaaS makes it possible to plan, book, pay and travel. To translate this onto the European level, an internationally accepted standard, harmonised and secure barcode, routes to enable communication for price-calculation as well as electronic banking payments will be necessary. To this end, the willingness to cooperate among all relevant stakeholders is central. More concretely, some stakeholders put forward the idea of a 'code of conduct' as part of the future regulatory framework, whereby only those actors, which act in a transparent manner, share data, use open standards, resell tickets and are willing to cooperate are allowed to be part of the ecosystem.

Historically the debate on ticketing has focused on the question of how to improve the distribution of tickets. Today the discussion has significantly evolved and instead focuses on the active management of a transport ecosystem. Indeed, platforms are not only a means to sell tickets but are increasingly becoming a tool to manage them. The debate at hand is not merely between RUs and digital platforms regarding newcomers and incumbents but rather about the broader

role of transport service providers and the new digital platforms. This, in turn, raises important questions about the balance of power between the different actors: incumbents and newcomers, but also between the powerful actors in the new ecosystem. EU regulation will have an important role to play in resolving current and preventing future market asymmetries by avoiding dominant players. Moreover, it was also pointed that the regulation in question will not be limited to railways but will have a holistic and multimodal approach, covering the entire transport sector, as well as sectors beyond it. The future regulatory framework will have to address a set of inter-related and questions central to the regulation of data, namely cost, ownership, use, and privacy, among others. Here, lessons can be drawn from the aviation industry, namely [Regulation \(EC\) No 80/2009](#) on a Code of Conduct for Computerised Reservation Systems (CRS), as well as existing pieces of EU legislation on the exchange of data, such as [Directive 2010/40/EU](#) on the deployment of Intelligent Transport Systems ('ITS Directive').

## Conclusion: What next for the creation of IPCs?

Meeting the EU's ambitious modal shift objectives for rail will necessitate measures to boost the share of passenger rail traffic. When it comes to cross-border passenger services, two different approaches were identified. Firstly, high-speed rail connections would need to be enhanced by means of boosting investments into cross-border infrastructure in order to ensure faster connections between major cities in different countries, thereby enabling rail to effectively compete with air. An alternative approach focuses on the provision of night services, which are slow by definition. Here the implications would concentrate on providing adequate infrastructure, such as bypasses. While these two approaches can be complementary to each other, it was noted that they have very different implications for infrastructure investments which need to be carefully addressed. To put things into perspective, while high-speed rail would entail on average 10 to 20 trains running per day, only one night train connection per night is to be secured between two cities. This, in turn, translates into entirely different volumes of passengers and services for these two complementary rail services. The construction of new high-speed lines would, in other words, need to be justified with sufficient traffic volumes and demand.

The subsequent discussion about TACs sought to address the key question of how to transform the 27 different national networks and respective systems on how to fund infrastructure into one coherent European network. In some countries, public funding is directly channelled to the IM, which results in very low TACs because the funding is going directly to the entity funding the infrastructure. Conversely, in other countries, public money is not directly given to the IM but to the RUs, very often in the form of PSOs and compensations. A substantial part of this funding is directed towards the IMs in the form of high TACs. This, in turn, has resulted in very asymmetric approaches to TACs in the different Member States. Shifting towards a European network will necessitate a harmonised approach to financing these infrastructures for international passenger services in order to create a European network. Besides the TACs, a range of other elements pertaining to the creation of a European network will have to be considered, namely the planning of infrastructure, the management of traffic, in particular in cases of disruptions, the measurement of performance, and not the least, the implementation of PSOs for cross-border services, which remains a loophole in European regulation.

The third session focused on digitalisation, which helps to build a digital network on top of physical national infrastructures. Three key elements emerged in this debate on the digital layer. The first one is a pure business-to-business (B2B) approach where IMs cooperate with other IMs in order to improve coordination. Here it was agreed that the experience of the RFCs could offer valuable learning lessons. B2B can be improved by better coordinating IMs with RUs. Conflicts in this area are not acute, given that cooperation between the different players for the operation of the systems brings shared benefits.

The second element is the business-to-consumer (B2C) approach, which reflects the realities of ticketing systems. Conflicts are more prominent in this area, as demonstrated by the above-mentioned risks and prospects arising from changes in the balance of power with the entry into the market of new Silicon Valley players. As liberalisation and information sharing support the entry of newcomers and increase competition, players adopt a more strategic at this level, marked by a reluctance to share information and data.

The third element may help to ease the above-mentioned tensions. The experience in aviation with the CRS shows that collaboration can take place between the different players. Amadeus, which was born out of collaboration among the airlines, emerged as one of the first digital platforms last century. It sought to facilitate the exchange of data, make booking and ticketing distribution capabilities available to third parties in order to engage with passengers. This illustrates the strong collaboration capabilities that digital platforms can bring about by creating new networks on top of the infrastructure and the service layers. This third layer, namely the data layer, helps to create network effects. This, in turn, can benefit all three categories of players: IMs, RUs and ticketing platforms. Platforms can, furthermore, act as a tool to boost the occupancy rates and overall efficiency of rail.

The forum discussions offered an important input to better understand the extent to which the 'corridor' concept, which was already tested in the context of rail freight via the RFCs, can be transposed to the passenger sector. The RFCs have been a laboratory when it comes to international cooperation on concrete, practical aspects dealing mostly with operation. RFCs have shown us that some functions can be coordinated at the supranational level, whereas other aspects should remain at the national level for safety or other reasons. When it comes to supranational coordination of some aspects, the digital platforms will certainly play a key role, which in turn calls for accelerated investments. Having said that, it was also acknowledged that the RFCs have had clear limitations. Performance in terms of punctuality and reliability in the corridors has not lived up to expectations, and no major impact on the share of rail freight has been observed. This can be attributed to a continued prevalence of the national systems and the absence of the network level (i.e., the EUROCONTROL of railways).

Going forward with the IPCs pilot services, it is vital to learn from the mistakes committed within the RFCs. An obvious one includes the failure to consider the entire supply chain. Similarly, in passenger transport, there is a chain composed of a passenger buying a ticket, a RU buying a rail path, as well as an IM buying a system. The expectations of the final user (i.e., punctuality, speed, duration, frequency, etc.) need to be considered in order for international rail passenger services to succeed.

## Developing international passenger traffic: What can we learn from our experience with freight traffic corridors?

A comment by Linda Thulin, President Rail Freight Corridor Scanmed

The need to develop international passenger traffic has many similarities and synergies with the need for international freight traffic corridors. In order to facilitate international travel, railway transport must be more easily accessible on an international level. It is ultimately the passenger or the transport buyer who chooses the transport options and transport modes. To make this possible, stakeholders in the railway industry need to cooperate, coordinate and jointly strive to make railways more accessible. The entire chain of players needs to reflect on ways to create new opportunities based on the market needs. Each country has developed solutions that work in the best way from a national perspective. However, increasing the share of international rail transport and thereby supporting the achievement of our climate goals, calls for greater willingness to compromise and identify common solutions from an international railway market perspective.

The Rail Freight Corridors (RFCs) are defined on the basis of regularly updated transport market studies. The freight corridors are located where there is a need for international freight flows. Today, commercial railway undertakings in the corridor run freely across borders and compete with each other on the basis of quality, flexibility, transit time, efficiency, prices etc. For instance, whereas transport services can be obtained at lower price, these could come at the expense of longer delivery times and uncertainty as to the goods' arrival time. This means that if the freight corridor disappears, the established traffic would still remain, but it would probably be more difficult to manage, especially in the long run.

### **Can we create efficient capacity for the development of long-distance and cross-border passenger rail services over International Passenger Corridors?**

The Rail Freight Corridor Scanmed supports and develops the possibilities together with terminals, ports and railway undertakings so that they, in turn, can create attractive transport solutions for the transport buyer.

An important part of this is meeting the market needs for attractive international capacity. A transport buyer needs stability and predictability over a long time period, but also flexibility to handle changes, and to choose rail as their transport mode. Transport buyers must be able to trust deliveries so that their production is not interrupted and store shelves do not become empty. Whereas a passenger can easily choose an alternative way of travelling, for the railway undertakings who invest in locomotives, waggons, among other resources, securing a seamless supply chain is a matter of survival.

Another aspect is that the railway undertakings need to have a good understanding of how to use the railway system and how it works in each country. There is already an international web-based capacity booking and allocation tool in place (PCS provided by RNE) that is used by railway undertakings. In the Rail Freight Corridor Scanmed, this has been tested and implemented, as well demonstrated between Norway and northern Germany. Passenger traffic also uses this for cross-border traffic. This type of IT solutions lowers the threshold for all applicants for entering the open access market. The capacity request is done in one system as one single request. This results in a fully coordinated cohesive path offer from all infrastructure managers.

Investments and maintenance are also needed in the infrastructure to ensure a smooth transport flow, to secure attractive capacity and to meet the need for increasing transport demand. In parts, investment plans tend to meet national and regional needs and focus primarily on major investments. But when they are pooled together, this creates "islands" of investments for the railway undertaking and fail to facilitate a smooth international traffic flow. There is a need for better coordination and planning of both minor and major investments, based on the market needs for international traffic flows.

### **Can we make progress in digital platforms for on-line search and ticket purchase, including through ticketing?**

Imagine a transport buyer who has a need for a transport while contributing to the climate goals by using the railway system, though has limited knowledge of the workings of the railway system. To whom do you turn? Most people turn to logistics companies via the web to request a complete transport solution. The railway is often not

even an option. Most often, the transport buyer is referred to a railway undertaking, which in turn must also find a joint solution together with a terminal, port and others. How could the information become available so that it can be offered in the same system? Digitalisation in each step of the logistics chain, easy access to collective information platforms and the exchange of digital information are necessary, so as to ensure that passengers and transport buyers easily choose the railway option. The only way for an international freight operator to access this kind of information is through the Rail Freight Corridors, which will offer a more complete solution.

In Rail Freight Corridor ScanMed, the coordination of some major traffic disruptions has enabled us to gain a better understanding of what can be improved. Some form of agreement would be needed between the railway undertakings to ensure a smooth cooperation enabling the affected goods to reach their destination even during disruptions. Reliable contingency management guarantees that passengers and transport buyers are affected to a minimal extent by occurring disruptions so that rail can remain their transport mode of choice.

Within the airline sector, several “Alliances” cooperating in the context of customer care are well-established. Similar concepts could be developed in the railway sector for both freight and passenger traffic. How would the continuation of a journey be secured for a passenger who buys an international trip with a railway undertaking in the event of a disruption? Would the railway undertaking of a connecting rail service offer free rebooking in the same way as a flight operator on a connecting flight would do? Is it also possible for the railways to get there? To compete with the air market on suitable distances, this will be a necessity.

## IPCs and Night Trains: Which Direction shall we take?

A comment by Bertil Hylén, FSR-Transport Adviser, previously with VTI Transport Research, Sweden and the European Commission's DG TREN

### Recent initiatives

2021 has been declared the European Year of Rail, but it is also worth remembering that it is 30 years since the beginning of EU rail initiatives, Directive 91/4401. This Directive was meant i. a. to give the rail sector greater freedom from government involvement. It is therefore noteworthy to see an increased level of involvement in various countries;

- France - President Macron "promises" to bring back night trains to southern France. However, there has been no mention of competitive tendering in case these services will be loss-making.
- Germany – the Ministry of Transport etc., has published a plan for a "moderate speed" European service network, which even details what kind of rolling stock may be suitable. This plan is sometimes called "TEE2", and a wave of nostalgia is found in the German rail press.
- Sweden – A tendering process is underway for night trains Sweden-Padborg<sup>2</sup>. This service is expected to need public subsidies. Services will not terminate at the Danish/German border, but they are supposed to continue on commercial terms to Hamburg and/or Brussels. Traffic should start 1 August 2022, seven weeks before the Swedish elections.

### The rationale of night trains

Can night trains be run on commercial terms? First of all, remember that a seats car takes 66 passengers, whereas a sleeping car takes 33. And that is with three-bed compartments, not the luxurious compartments with toilets and showers that people may be dreaming of. Couchettes are another matter; with six passengers per compartment, you may be able to squeeze in 60 in a carriage.

Of course, there are exceptions. Swedish Snälltåget (owned by Transdev) claims that they can run night trains on commercial terms, but they point out not every day of the year. In the summer of 2021, they will run a night train on the route Stockholm-Malmö-Padborg-Hamburg-Berlin. This substantial detour is needed because the ferries Rödby-Puttgarden and Trelleborg-Sassnitz are closed.

Sweden's vast geographical size (450 000 km<sup>2</sup>) makes night trains (and domestic flights) a necessity in the country. The 1 467 km journey between Stockholm and Narvik takes 18 hours. After tendering Norwegian Vy runs this service on a net-cost contract with public support of 50 Eurocents per train km. These trains have 10-15 carriages, a combination of sleepers, couchettes, seats cars and bistro. On practically the same line, Göteborg-Stockholm-Umeå Swedish SJ runs a night train on commercial terms. SJ also runs trains in Norway.

Austrian ÖBB's Nightjet expansion has attracted significant attention. However, the economics of these operations have been questioned by the rail press as well as by this author. Are these services genuinely commercial, or are there hidden subsidies? ÖBB receives large amounts in PSO subsidies from the Austrian state without tendering; they have declared that these monies are used to subsidise night trains within Austria but not in other countries. This is an area worth further study.

### Action

IMs, National Ministries and the European Commission through its agencies, should focus on improving IPCs where there are long-term market prospects. They should not, except in exceptional cases, engage in operations through PSOs or otherwise. Poor rail performance (there is a lot of it, lots of reports point at this) must not be hidden behind a green facade.

Capacity improvements are needed in many places regardless of IPCs or RFCs. The high speed hype must be dropped, and the focus on conventional (200 km/h) rail must, instead, get higher priority. High speed will not solve the rail sector's problem. The very expensive high speed line across the Pyrenees has seven passenger trains per day<sup>3</sup> – a costly way to "connect

1 Council Directive 91/440/EEC of 29 July 1991 on the development of the Community's railways

2 Trafikverket ref KOM-404.357

3 European Rail Timetable, Winter 2020/21, Table 13

Spain with the rest of Europe”.

True international operations must expand. The current order where one RU hands over to the next at the border is 150 years old and must disappear. This only leads to nobody taking full responsibility vis-à-vis the customer. There are few examples of anything better, though the DB service München-Bologna should be mentioned.

We should focus also on air plus rail instead of just replacing air with rail. Many airports have excellent medium-distance rail connections, but information and ticketing are usually quite difficult to find.

Diversions routes/plans must be set up and agreed upon between Member States. The Rastatt disaster must serve as an example of how not to do this. Freight/passenger priorities must be agreed. This is really difficult; in some Member States, freight is more important than passengers. After the Gudrun Storm in Sweden 2005 the main line Stockholm/Hallsberg – Malmö was blocked for several weeks, freight then was given priority when services restarted.

ÖBB mentions Lübeck-Büchen-Lüneburg as an example of a diversionary route – single track, diesel... Remember that double track has four times the capacity of a single track, not two times.

Finally some nostalgia must be permitted: were they not charming these [streamlined locomotives](#)?



## FSR Transport

*The Florence School of Regulation (FSR) is a project within the European University Institute (EUI) focusing on regulatory topics. It works closely with the European Commission, and is a growing point of reference for regulatory theory and practice. It covers four areas: Communications and Media, Energy (Electricity and Gas), Transport, and Water.*

*The FSR-Transport Area's main activities are the European Transport Regulation Forums, which address policy and regulatory topics in different transport sectors. They bring relevant stakeholders together to analyse and reflect upon the latest developments and important regulatory issues in the European transport sector. These Forums inspire the comments gathered in this European Transport Regulation Observer. Complete information on our activities can be found online at: [fsr.eui.eu](https://fsr.eui.eu)*

## Robert Schuman Centre for Advanced Studies

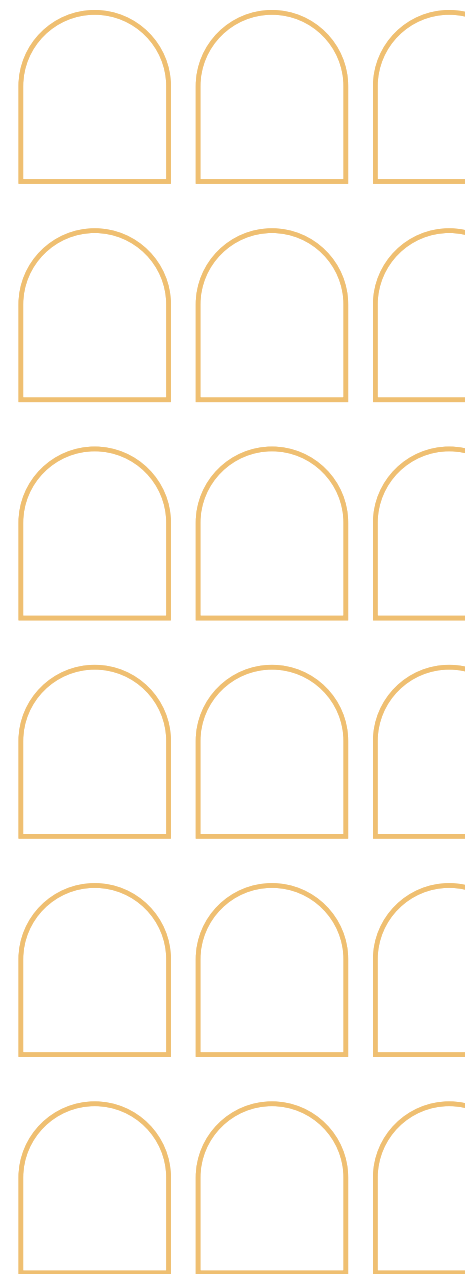
*The Robert Schuman Centre for Advanced Studies (RSCAS), created in 1992 and directed by Professor Brigid Laffan, aims to develop inter-disciplinary and comparative research on the major issues facing the process of European integration, European societies and Europe's place in 21<sup>st</sup> century global politics. The Centre is home to a large post-doctoral programme and hosts major research programmes, projects and data sets, in addition to a range of working groups and ad hoc initiatives. The research agenda is organised around a set of core themes and is continuously evolving, reflecting the changing agenda of European integration, the expanding membership of the European Union, developments in Europe's neighbourhood and the wider world.*

[www.eui/rsc](https://www.eui/rsc)



Co-funded by the  
Erasmus+ Programme  
of the European Union

Views expressed in this publication reflect the opinion of individual authors and not those of the European University Institute or the European Commission.  
© European University Institute, 2021  
Content © Juan Montero, Matthias Finger, Teodora Serafimova



doi:10.2870/579272  
ISBN:978-92-9084-973-5  
ISSN:2467-4540  
QM-AX-21-018-EN-N