



# CONFETRA RESEARCH DEPARTMENT NOTE



## **CONFETRA RESEARCH DEPARTMENT NOTE (N. 4 – SEPTEMBER 2023)**

## **CRITICAL ASPECTS OF TRANSALPINE FREIGHT TRANSPORT**

## ABSTRACT

The Alpine passes are Italy's main gateway to Europe and simultaneously represent a fundamental asset and a challenge for its economy, as well as for Europe itself. The Italian and European economies depend significantly on intra-EU trade and given the substantial share that passes through the Alps, efficient and effective management of these mountain passes should be strongly supported, especially in a declining phase like the current one<sup>1</sup>.

This Note seeks to analyse the critical aspects, trends, and costs associated with commercial road and rail transit through the Alpine passes, with the aim of formulating structural proposals to address their management.

## 1. The Strategic Role of Alpine passes

The critical issues within the Alpine pass system are evident to all and are linked to the "fragility" of mostly outdated and overall inadequate infrastructure, ill-suited for the current volume of traffic. These infrastructures are increasingly prone to accidents and damaging events, resulting in continuous disruptions and limitations to both railway and road transit, even in recently opened or renovated facilities.

The list of critical events in this year, which has not yet concluded, is rather lengthy and concerning: the San Gotthard railway line was interrupted due to a train derailment on August 10th; the Frejus road tunnel was closed for over ten days starting on August 28th due to a landslide; on September 12th, the San Gotthard Road tunnel was closed

<sup>&</sup>lt;sup>1</sup> According to Istat, in July 2023, exports decreased on an annual basis by 7.7% in monetary terms and 11.6% in volume, while imports reduced by 19.4% in value and 3.7% in volume (source: https://www.istat.it/it/archivio/287980).



due to detected cracks in the structure. Starting from September 2024, Mont Blanc will have to remain closed for several months each year for approximately 19 years to carry out extensive maintenance work, and in the meantime, there will be nighttime closures for urgent repairs.

In addition to infrastructure fragility, there are also temporary restrictions on heavy road traffic implemented by individual countries, as well as commercial limitations, as in the case of Austria. On one hand, Austria imposes stricter and not entirely justified rules for the passage of heavy vehicles, even selecting categories of goods that can transit. On the other hand, it does not offer viable alternatives. Indeed, the current Brenner railway line is congested, costly (double traction), and qualitatively inefficient (delays) for freight traffic (the so-called RO.LA., rolling highway). The new line may be operational by 2028 if the construction schedule is adhered to, but more likely, due to accumulated delays, it might be in operation by 2032 or later.



Alpine crossings and the modal split between road and rail transport

Source: Alpine Traffic Observatory UE-CH

On the Brenner route, in particular, the European Commission has long been conspicuously absent when it comes to addressing restrictions on merchandise traffic (including timing and discrimination between transit and local traffic) imposed by the regional government of Tyrol. After a now-distant infringement of the Internal Market rules that led to Austria's conviction by the Court of Justice, the Commission has systematically has consistently abstained from addressing the subsequent recurring measures restricting road transit for heavy vehicles subsequently implemented by Tyrol. Despite the repeated appeals from Italy and partly Germany, has recently reaffirmed its intention to delegate the task of finding a mediation solution to the three Member States involved, even though the clear violation of the free movement principle within the Internal Market.

To better understand the economic dimension of the problem, one must consider the fundamental role played by Alpine crossings in trade. According to ISTAT data from 2022, Italy's total import/export with the rest of the world exceeded 485 million tonnes, with 66% being imports



and 34% being exports. Of these, approximately 220 million tonnes (about 45% of the total, valued at around 690 billion euros) represent trade with the European Union of 27, with at least 42% (290 billion euros) passing through the Alps. This share, when cross-referencing ISTAT data with that of the *Confédération suisse Office fédéral des transports* (UFT)<sup>2</sup>, presumably exceeds 64% (442 billion euros) if one includes a redistributive estimate of the 45% share that ISTAT attributes to undeclared modes of transportation.

## 2. The Trends in freight transport through the Alps

According to the Swiss Federal Office of Transport (UFT), the overall volumes of transalpine freight transport increased by 9.5% in 2021 compared to 2020, reaching a level of 232 million tonnes. This represents a 4.5% increase compared to 2019 and a 46% increase compared to 1999 when it stood at 159 million tonnes.

Country and crossing		Road						
		Total .000 tonnes	% of total	Total .000 tonnes	Convent ional .000 tonnes	UCT .000 tonnes	ACT .000 tonnes	Total .000 tonnes
	Ventimiglia	21.588	96,4	797	458	339		22.385
nce	Frejus/Moncenisio	12.484	82,3	2.677	1.367	1.305	5	15.161
Frai	Monte Bianco	9.376	100,0	0				9.376
	Total France	43.448	92,6	3.474	1.825	1.644	5	46.922
	Gran San Bernardo	271	100,0	0				271
rlanc	Sempione	928	8,2	10.442	1.289	8.011	1.142	11.370
itzeı	Gottardo	6.976	28,0	17.913	5.476	12.437	0	24.889
Sw	San Bernardino	1.323	100,0	0				1.323
	Total Switzerland	9.498	25,1	28.355	6.765	20.448	1.142	37.853
	Resia	872	100,0	0				872
	Brennero	39.676	72,7	14.911	3.008	8.393	3.510	54.587
	Felbertauern	788	100,0	0				788
tria	Tauern	17.163	69,3	7.589	4.440	3.149	0	24.752
Aus	Schoberpass	21.080	78,2	5.867	4.861	622	384	26.947
	Semmering	6.591	39,2	10.237	6.272	3.965		16.828
	Wechsel	22.334	99,6	88	46	42		22.422
	Total Austria	108.504	73,7	38.692	18.627	16.171	3.894	147.196
Total		161.450	69,6	70.521	27.217	38.263	5.041	231.971
Total Italy		93.494	66,7	46.740	11.598	30.485	4.657	140.234

#### Freight Transport in 2021 across the entire Alpine Arc

Source: Data analysis based on Swiss Federal Office of Transport (FOT) data Legend: ACT: Accompanied Combined Transport / UCT: Unaccompanied Combined Transport

In 2021, 70.5 million tonnes of the total volume were transported by rail, marking a 10.6% increase compared to the previous year. The 161.5

<sup>&</sup>lt;sup>2</sup> The European Commission, in collaboration with the Swiss Federal Office of Transport (UFT), provides a contextual analysis through the study *Observation et analyse des flux de transports de marchandises transalpins - Rapport annuel 2021* which covers all Alpine crossings, including those within Austrian territory.



million tonnes that crossed the Alps by road in 2021 saw a 9.0% increase compared to 2020 and a 4.8% increase compared to 2019, which had set the record for transit volumes in previous years.

Regarding traffic exclusively involving the Italian border, volumes compared to 2020 increased by 9.7%, reaching 140.2 million tonnes, of which 93.5 million tonnes, or 66.7%, were transported by road, representing an 8.5% increase compared to 2020. The remaining 46.7 million tonnes were transported by rail, recording a 12.2% increase compared to the previous year.

Country and crossing				Total				
		Road .000 tonnes	Totale .000 tonnes	Conv- entio- nal .000 tonnes	UCT .000 tonnes	ACT .000 tonnes	.000 tonnes	% of total
	Ventimiglia	21.588	797	458	339	-	22.385	16,0
e	Frejus/Moncenisio	12.484	2.677	1.367	1.305	5	15.161	10,8
ranc	Monte Bianco	9.376	-	-	-	-	9.376	6,7
Ē	Total France	43.448	3.474	1.825	1.644	5	46.922	33,5
	%	46,5	7,4	15,7	5,4	0,1	33,5	0,0
	Gran San Bernardo	271	0	-	-	-	271	0,2
5	Sempione	928	10.442	1.289	8.011	1.142	11.370	8,1
erlan	Gottardo	6.976	17.913	5.476	12.437	0	24.889	17,7
vitze	San Bernardino	1.323	0	-	-	-	1.323	0,9
S	Total Switzerland	9.498	28.355	6.765	20.448	1.142	37.853	27,0
	%	10,2	60,7	58,3	67,1	24,5	27,0	0,0
	Resia	872	-	-	-	-	872	0,6
tria	Brennero	39.676	14.911	3.008	8.393	3.510	54.587	38,9
Aus	Total Austria	40.548	14.911	3.008	8.393	3.510	55.459	39,5
	%	43,4	31,9	25,9	27,5	75,4	39,5	0,0
Tota	otal 93.4		46.740	11.598	30.485	4.657	140.234	100,0

Freight Transport in 2021 through Alpine Passes Bordering Italy

Source: Data analysis based on Swiss Federal Office of Transport (FOT) data

Austria is the country that handles most of the transalpine freight transport, accounting for 147.2 million tonnes, which is 63% of the total. France and Switzerland share the rest of the transported volumes, with 46.9 million tonnes (20%) and 37.9 million tonnes (16%), respectively. These numbers change when considering 'Italian' passes, where the volume of transported goods is distributed as follows: 39.5% with Austria, 33.5% with France, and 27.0% with Switzerland.

## 3. Modal Split in Transalpine Transport

In 2021, to transport the 93.5 million tonnes of goods by road, 6.6 million heavy vehicles crossed the 'Italian' Alps, marking an 8.9% increase compared to 2020. The number of heavy vehicles crossing the Alps 'Italian' in 2021 increased by 6.6% in Austria and 14% in France, while no changes were recorded in Switzerland.



Long-term effects of transport policies in different countries are evident from data since 1999. In France, the number of heavy vehicles and transported volumes increased by 22% and 20%, respectively. In Switzerland<sup>3</sup>, the number of heavy vehicles steadily decreased to 860,200 in 2021, with a 35% reduction in vehicles and a simultaneous 13% increase in transported volume. In Austria, it increased by 85%.

		Vehicles				Tonnes					
Country and crossing		(.000)		Δ%		(.000)			Δ%		
		2019	2020	2021	2019- 2020	2020- 2021	2019	2020	2021	2019- 2020	2020- 2021
	Ventimiglia	1.572	1.416	1.619	-9,9	14,3	20.961	18.882	21.588	-9,9	14,3
France	Frejus/Moncenisio	772	711	831	-7,9	16,9	11.598	10.683	12.484	-7,9	16,9
	Monte Bianco	628	566	617	-9,9	9,0	9.545	8.597	9.376	-9,9	9,1
	Total France	2.972	2.693	3.067	-9,4	13,9	42.104	38.162	43.448	-9,4	13,9
tzerland	Gran San Bernardo	34	27	25	-20,6	-7,4	385	302	271	-21,6	-10,3
	Sempione	89	90	80	1,1	-11,1	1.036	1.051	928	1,4	-11,7
	Gottardo	643	628	637	-2,3	1,4	7.304	7.140	6.976	-2,2	-2,3
Swi	San Bernardino	131	117	119	-10,7	1,7	1.456	1.306	1.323	-10,3	1,3
	Total Switzerland	897	862	861	-3,9	-0,1	10.181	9.799	9.498	-3,8	-3,1
Austria	Resia	100	88	103	-12,0	17,0	843	794	872	-5,8	9,8
	Brennero	2.560	2.377	2.524	-7,1	6,2	39.919	37.423	39.676	-6,3	6,0
	Total Austria	2.660	2.465	2.627	-7,3	6,6	40.762	38.217	40.548	-6,2	6,1
Tota	Total 6.529 6.020 6.555 -7,8 8,9 93.047 86.178 93.494				-7,4	8,5					

Road Freight Transport in the Alpine Region from 2019 to 2021

Source: Data analysis based on Swiss Federal Office of Transport (FOT) data

In 2021, 46.7 million tonnes of goods were transported by rail, representing a 6.1% increase compared to 2019 (pre-pandemic year).

France is the only country that experienced a decrease in rail traffic between 2019 and 2021 (-6.5% via the Mont Cenis-Fréjus route, which handles 77% of the goods, and +7.1% via Ventimiglia, where only 23% of volumes transit). This is in line with a trend since 1999 that has led to a 63% reduction in volumes transported by rail (Mont Cenis-Fréjus -77%, Ventimiglia -20%).

Between 2019 and 2021, Switzerland saw a 6.4% increase in volumes transported by rail, primarily attributed to the Gotthard route (+18.5%), while traffic through the Simplon Pass decreased by 9.5%. However, it should be noted that since 1999, the Gotthard route has only seen a 20%

<sup>&</sup>lt;sup>3</sup> This is the result of measures adopted to increase the permissible weight from 28 tons to 40 tons and the introduction of the performance-based heavy vehicle fee in 2001. Since 2007, the average load has fluctuated between 11.1 and 12.4 tons per vehicle; in 2021, it decreased to 11.0 tons.

increase, while volume through the Simplon Pass has almost tripled (+197%)<sup>4</sup>.

6	untry and grassing		40/ 2010 2021		
	untry and crossing	2019	2020	2021	Δ% 2019-2021
		Conventiona	1		
	Ventimiglia	432	339	458	6,0
France	Moncenisio	1.183	1.231	1.367	15,6
	Total France	1.615	1.570	1.825	13,0
	Sempione	1.650	1.144	1.289	-21,9
Switzerland	Gottardo	4.969	4.537	5.476	10,2
	Total Switzerland	6.619	5.681	6.765	2,2
Austria	Brennero	3.217	3.003	3.008	-6,5
Austria	Totale Austria	3.217	3.003	3.008	-6,5
	Total	11.451	10.254	11.598	1,3
		UCT			
	Ventimiglia	312	295	339	8,7
Francia	Moncenisio	1.660	1.168	1.306	-21,3
	Total France	1.972	1.463	1.645	-16,6
	Sempione	8.422	7.628	8.011	-4,9
Switzerland	Gottardo	10.142	10.754	12.437	22,6
	Total Switzerland	18.564	18.382	20.448	10,1
	Brennero	7.836	7.874	8.393	7,1
Austria	Total Austria	7.836	7.874	8.393	7,1
	Total	28.372	27.719	30.486	7,5
		АСТ			
	Ventimiglia	-	-	-	-
Francia	Moncenisio	20	7	5	-75,0
	Total France	20	7	5	-75,0
	Sempione	1.467	944	1.142	-22,2
Switzerland	Gottardo	-	-	-	-
	Total Switzerland	1.467	944	1.142	-22,2
	Brennero	2.729	2.725	3.510	28,6
Austria	Total Austria	2.729	2.725	3.510	28,6
	Total	4.216	3.676	4.657	10,5
		Totale			
	Ventimiglia	744	634	797	7,1
Francia	Moncenisio	2.863	2.406	2.678	-6,5
	Total France	3.607	3.040	3.475	-3,7
	Sempione	11.539	9.716	10.442	-9,5
Switzerland	Gottardo	15.111	15.291	17.913	18,5
	Total Switzerland	26.650	25.007	28.355	6,4
	Brennero	13.782	13.602	14.911	8,2
Austria	Total Austria	13.782	13.602	14.911	8,2
	Total	44.039	41.649	46.741	6,1

#### Rail Freight Transport in the 'Italian' Alpine Region from 2019 to 2021

Source: Data analysis based on Swiss Federal Office of Transport (FOT) data

<sup>&</sup>lt;sup>4</sup> This became possible thanks to the opening of the Lötschberg Base Tunnel in 2007 and various improvements to the southern section of the Simplon Tunnel, enhancing the operational conditions of this passage. On the Gotthard route, capacity was significantly expanded with the opening of the Lötschberg Base Tunnel in December 2016 and the introduction of the Ceneri Base Tunnel and the continuous 4-meter corridor on the access lines, both available since the end of 2020.



In Austria, the growth rate of the Brenner route from 1999 to 2021 was 80%, with an 8.2% increase between 2019 and 2021.

The modal split varies significantly among different countries. Through Swiss passes, a substantial 74.9% of freights travel by rail, compared to 26.9% through Austrian passes (considering only border crossings) and a mere 7.4% through French passes (in 1999, this figure was 19.9%).

Country	Roa	ıd	Ra	il	Total		
Country	.000 tonnes	%	.000 tonnes	%	.000 tonnes	%	
France	43.448	92,6	3.474	7,4	46.922	100,0	
Switzerland	9.498	25,1	28.355	74,9	37.853	100,0	
Austria	40.548	73,1	14.911	26,9	55.459	100,0	
Total	93.494	66,7	46.740	33,3	140.234	100,0	

Modal Split Road/Rail Transport

Source: Data analysis based on Swiss Federal Office of Transport (FOT) data

## *4. Transportation Costs and Toll Fees* <sup>5</sup>

After a brief period of reduced fuel costs in 2020, coinciding with the COVID-19 pandemic, 2021 saw an average increase of approximately 17% compared to the previous year, with a continuing upward trend that does not appear to be reversing (price has remained steadily above €1,700/1,000 Liters since the beginning of 2022).



Diesel Fuel Price (€/1,000 Liters)

Source: Data analysis based on MIMIT data, monthly surveys from September 2013 to August 2023.

Road tolls have remained almost unchanged in all countries or increased by 2-3% in some cases related to Austria. In 2023, there have been some increases due to inflation adjustments, particularly toll rates for the Frejus and Mont Blanc Road tunnels, which increased by 7.36%. The

<sup>&</sup>lt;sup>5</sup> See European Commission, Swiss Federal Office of Transport (UFT), *Observation and Analysis of Transalpine Freight Transport Flows - Annual Report 2021*, January 2023.



CHF/EUR exchange rate has had a limited impact on transit with Switzerland.

The operating costs of road and rail vehicles have remained the same, as they are not subject to significant annual variations. However, transport costs have increased overall on all routes, with a lesser impact on those of unaccompanied combined transport (UCT) with Switzerland, thanks to the country's policies to promote modal shift towards rail.

Due to intense competition in the freight transport market, companies generally do not disclose their prices. Therefore, the Swiss Federal Office of Transport (FOT) has developed a theoretical cost structure model, while not accounting for some common and variously occurring extra costs in specific cases (congestion and saturation, transit regulation and service inefficiencies, incidents, etc.), allows for a comparison between various modes of transport on major long-distance routes crossing Alpine Road and rail passes.

Regarding routes that offer all three possibilities (road, accompanied combined transport, and unaccompanied combined transport), the costs for "pure" road transport are normally higher than those for unaccompanied combined transport. However, they are lower than the costs for transport that includes the rolling highway service, which, in some cases, comes close to the costs of road transport.

Additional insights can be drawn from the data presented in the following figure on the overall costs per €/km of road transport for a heavy vehicle through the Alps in 2021.



Cost of Transalpine Road Transport in 2021 (€/PL-km)

Source: Data analysis based on Swiss Federal Office of Transport (FOT) data

The average cost of the considered transport routes is  $\leq 1.40$ /km, but it varies significantly depending on the crossing of various passes. The most expensive routes are those crossing Mont Blanc ( $\leq 1.66$ /km), followed by



the Gotthard ( $\in$  1.40/km), Ventimiglia ( $\in$  1.33/km), and finally the Austrian crossings, Brenner and Tauer ( $\in$  1.21 and  $\in$  1.22/km). The "tax" burden (taxes and tolls) appears to be the most significant factor affecting the average cost of road transport, accounting for an average of 26.5%, slightly more than fuel (26.3%). The highest "tax" incidence is observed for Mont Blanc transit, at 37.3%, followed by the Gotthard (24.1%), Ventimiglia (20.6%), Tauer (18.9%), and finally, the lowest is for Brenner (18.2%).

Turning to the costs of accompanied combined transport in the following figure, there is an average value of  $\notin$  1.60 per km. The highest cost is for routes crossing Brenner ( $\notin$  1.85/km), followed by Tauer ( $\notin$  1.82/km), Mont Cenis-Fréjus ( $\notin$  1.64/km), and Gotthard-Simplon ( $\notin$  1.42/km), which is the lowest, partially due to incentives from the Swiss government.

In this transit mode, the "tax" burden is very low, but not for all routes. Compared to an average of 9.4%, the highest incidence of taxes and tolls is found on the Mont Cenis-Fréjus route (15%), followed by Tauer (12.6%), Gotthard (5.4%), and Brenner (3.2%).

The most significant cost in combined transport is related to the rolling highway, where there is a significant variation between routes crossing Alpine passes. Compared to an average cost of  $\notin 0.74$ /km (equal to 46.6% of the total cost per km), Brenner has the highest cost at  $\notin 1.44$ /km, accounting for 77% of the total cost per km. This is followed by Tauer ( $\notin 0.89$ /km, accounting for 48.9%), Gotthard ( $\notin 0.66$ /km, accounting for 46.6%), and Mont Cenis-Fréjus ( $\notin 0.44$ /km, accounting for 26.8%).



Cost of Transalpine Accompanied Combined Transport in 2021 (€/PL-km)

Source: Data analysis based on Swiss Federal Office of Transport (FOT) data

Examining, finally, the costs of unaccompanied combined transport in the following figure, an average value of € 0.97/km emerges. The highest cost is for the route crossing Ventimiglia (€ 1.19/km), followed by Gotthard-



Simplon (€ 1.01/km), Brenner (€ 0.97/km), Mont Cenis-Fréjus (€ 0.94/km), and Tauer (€ 0.87/km).

In this mode of transport, the "tax" burden is very low, but not for all routes. Compared to an average of 7.6%, the highest incidence of taxes, tolls, and fees is observed on Tauer (13.8%), followed by Brenner (12.4%), Gotthard (10.6%), Ventimiglia (3.4%), and Mont Cenis-Fréjus (3.2%).

The most significant cost in unaccompanied combined transport is related to operational costs, where there are no significant variations between Alpine passes. Compared to an average cost of  $\notin 0.37$ /km (equal to 38% of the total cost per km), Mont Cenis-Fréjus has the highest cost at  $\notin 0.44$ /km, accounting for 47% of the total cost per km. This is followed by Ventimiglia ( $\notin 0.39$ /km, accounting for 32.8%), Gotthard ( $\notin 0.33$ /km, accounting for 33.1%), and Brenner ( $\notin 0.31$ /km, accounting for 32.1%).



Cost of Transalpine Unaccompanied Combined Transport in 2021 (€/UTI-km)

Source: Data analysis based on Swiss Federal Office of Transport (FOT) data

From the data presented, it is evident that the costs per km of accompanied combined transport are the highest. When comparing the overall average costs of road transport with those of accompanied combined transport, the latter is more than 14% higher than the former. If we move on to the average cost per km for rail and road transits, it becomes apparent that on the Brenner Pass, rail costs are 53% higher, and for Tauer, they are 49% higher. For Gotthard, the costs are essentially the same, and for Mont Cenis-Fréjus, rail costs are about 20% higher than road costs. However, when considering the costs per km of unaccompanied combined transport, they appear to be the most competitive, being lower than both road and rail transport accompanied by 41% and 61%, respectively. The difference between rail transport accompanied and unaccompanied is even more significant on the Brenner Pass, at 88%, while on Gotthard, road and rail transport costs are similar and 39% higher than unaccompanied rail transport. In Ventimiglia, the cost of road transport is 9% higher than unaccompanied rail transport.



These data, however, provide a comparison based solely on the transport costs of the considered routes. When considering additional transport costs from the origin to the final delivery of the transported goods, it becomes clear why unaccompanied rail transport may be lower, as it represents a "pure" rail transport cost, excluding additional road sections for pickup and delivery.

These same data also reveal very different trends among the various neighbouring countries of Italy. On Swiss passes (also thanks to combined transport incentives), efforts are made to reduce the disadvantage of higher rail costs compared to road costs, resulting in excellent modal split results (74.9% rail and 25.1% road). On French passes, the same approach is observed between Mont Cenis-Fréjus and Mont Blanc, but not between the latter and Ventimiglia.

Contradictions are evident in the modal shift on Austrian passes, where the costs of road transport are low, and those of accompanied combined transport are much higher (entrusted to a single operator's monopoly) despite the environmental justifications given by Austrian authorities to decongest and reduce road transport. However, they apply tolls in line with the average rates in the Alpine region, while at the same time imposing significantly higher costs on rolling highways with inefficient and low-quality service. Perhaps these contradictions are affected by the age and expensive operations costs of Austrian railway tunnels; however, the French Mont Cenis-Fréjus tunnel is not any less aged and more manageable, but the approach is significantly different and, although only partially, similar to that of Swiss railway tunnels, which are mostly newer and more efficient, but above all, more favourably managed for modal shift.

In the comparison between all-road and road-rail accompanied transport, net of management inefficiencies (rail) and congestion (road) at the passes, only policies that facilitate or contain transit costs can currently rebalance transport costs and provide a real rail alternative to road transport. This is the case on Swiss passes and partly on French ones, while it is entirely the opposite on Austrian passes. Pending the completion of major railway projects on the Frejus and Brenner routes and even after their completion, coordinated structural incentives for modal shift on Alpine transits would be desirable, and there is already a good national practice to follow.

In any case, some reflection should also be made on the quality of the service offered for unaccompanied rail transport, which, given its competitive costs, should be more attractive but remains inefficient.

## 5. Conclusions and Proposals

From the analyses conducted above, even with all the limitations of the available information and its update to 2021, it emerges that the issue of



managing Alpine passes is not only consistently underestimated but also overall managed in an imbalanced manner.

Unfortunately, its significance only comes to the forefront, often disruptively, following critical events. A spotlight is briefly shone, only to be extinguished until the next crisis. For several years now, a structural challenge has been added, arising from the opposition of local communities due to the environmental impact of road transits. However, this issue is frequently exploited by politicians to conceal protectionist manoeuvres aimed at safeguarding local and national productions. More recently, it has even been used for controlling illegal immigration. In these cases, the approach is inconsistent with modal shift and emissions reduction objectives. The Alpine passes have therefore become a complex problem that can no longer be underestimated or ignored.

Instead, what is needed is the coordination of Alpine region management by a single entity composed of stakeholders, including infrastructure managers, service operators, and national and local administrations. This entity should collect real-time traffic and accessibility data and have continually updated multimodal simulation models to support decisionmakers, both political and technical. This support should be available in the event of unforeseen emergencies and during the scheduling of regular and exceptional maintenance operations on road and rail infrastructures. Furthermore, there should be timely communication with infrastructure users via a dedicated platform.

Coordination, planning, digitalization, and communication could represent a concrete starting point for managing commercial flows along the Alpine area, at least in addressing transit challenges. A strong "political" initiative is needed, and the European Commission should take responsibility if it genuinely aims to safeguard the free movement of goods and people principles. Promoting and supporting projects for the core Trans European Transport networks (TEN-T) is crucial, but, as demonstrated since the Essen Council in 1994, it entails lengthy timelines.

Furthermore, the existing uncertainties in the Italian, European, and global economies demand a more earnest response to the issue and the quest for resolutions. It is no longer acceptable to endure managerial and economic inefficiencies whose effects impact the entire national and European economy.





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