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A Short History of High-Speed Rail Development in Italy

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9th July 2024



Why High-Speed Rail in Italy?



To find the answer, let's sleep on it ...

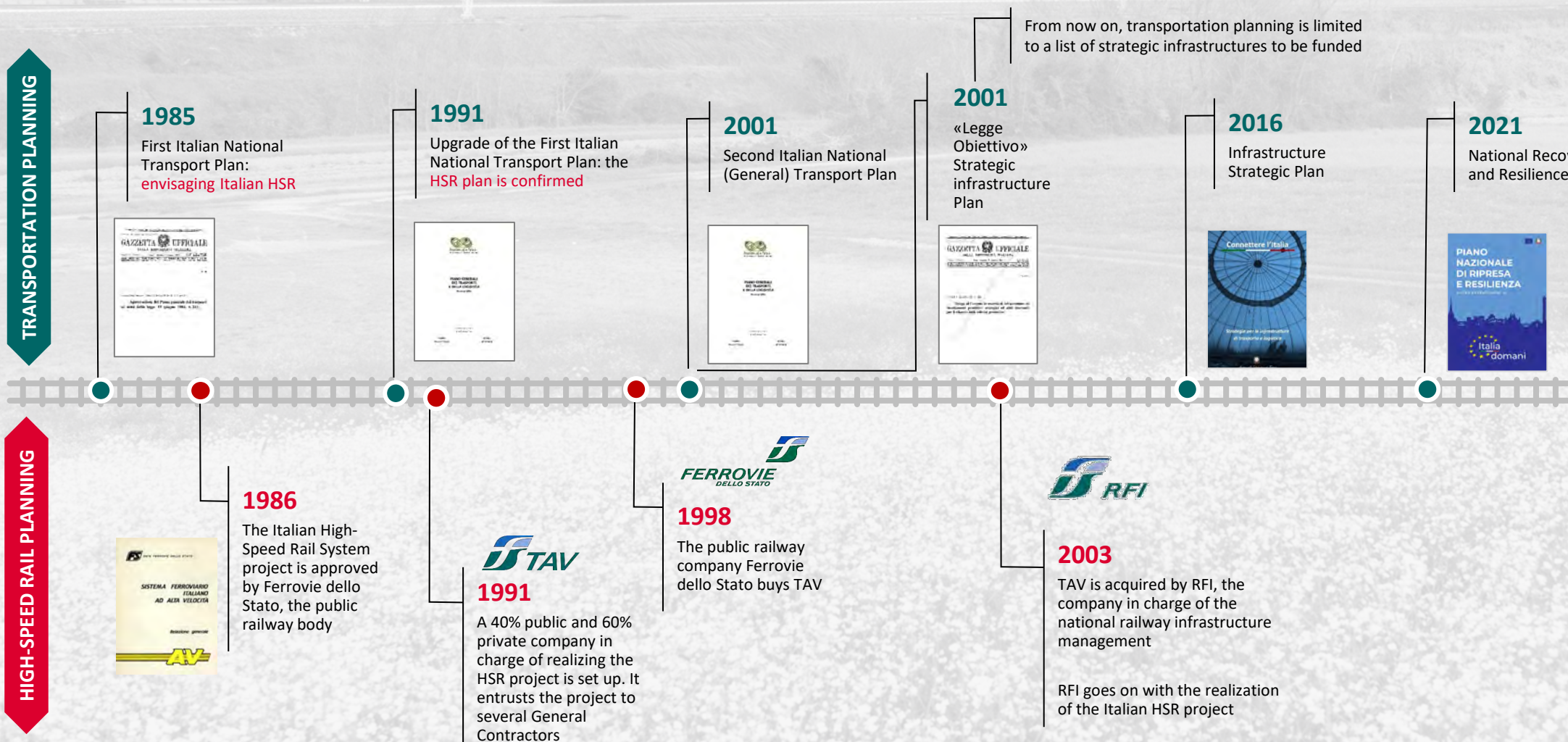


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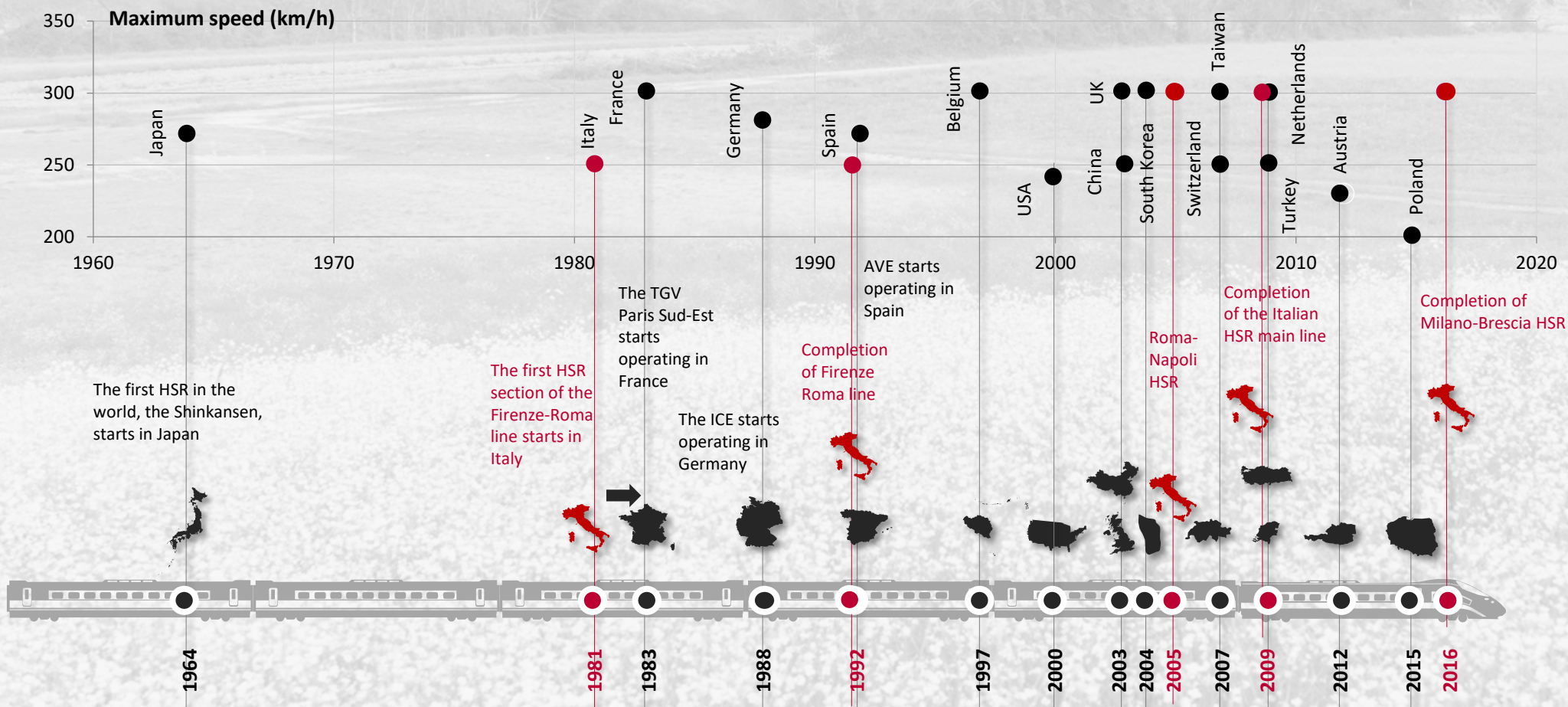
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The Italian HSR planning process



The Italian HSR: history vs other countries roll-outs



The Italian High-Speed Rail evolution: 2005-2017

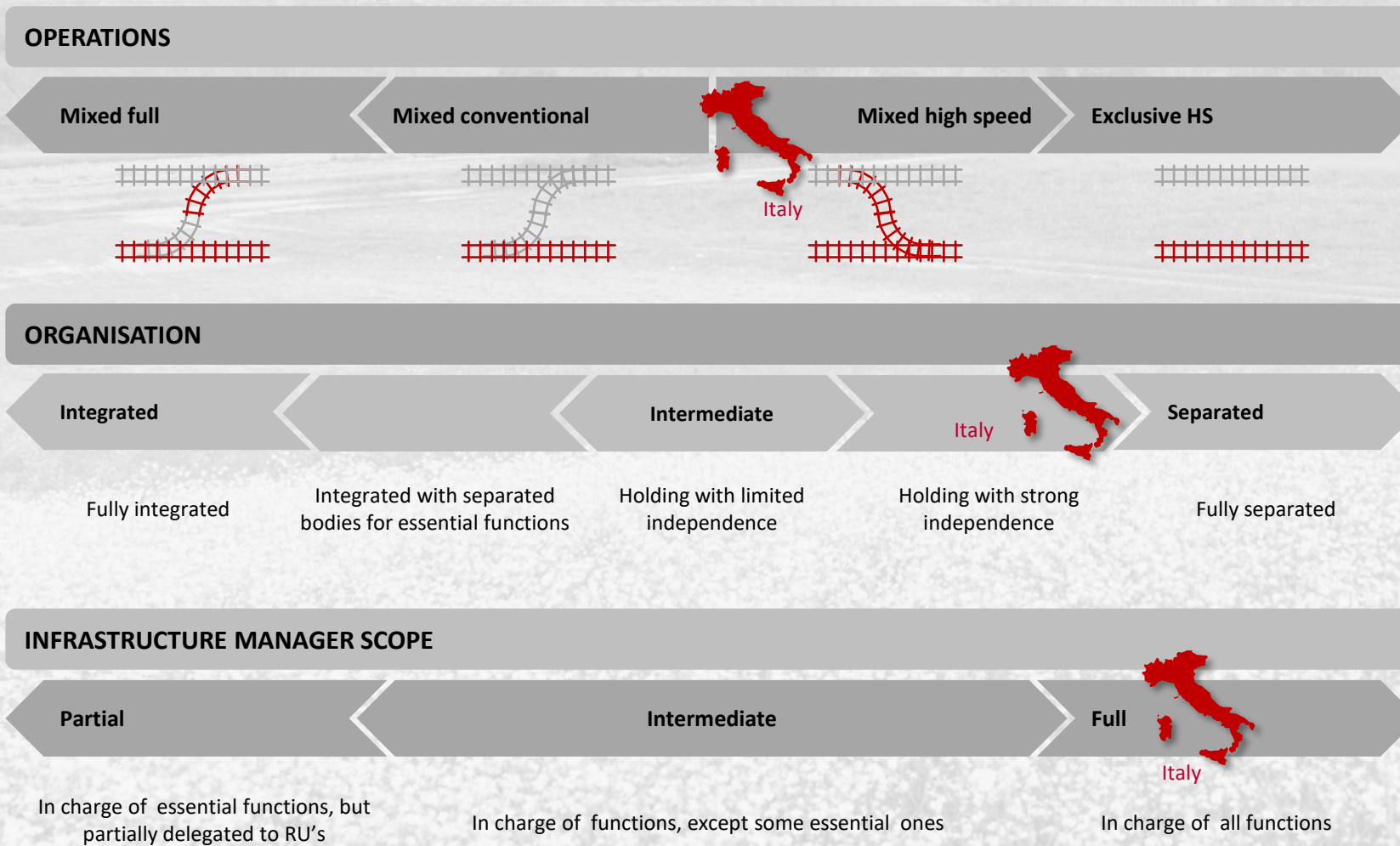


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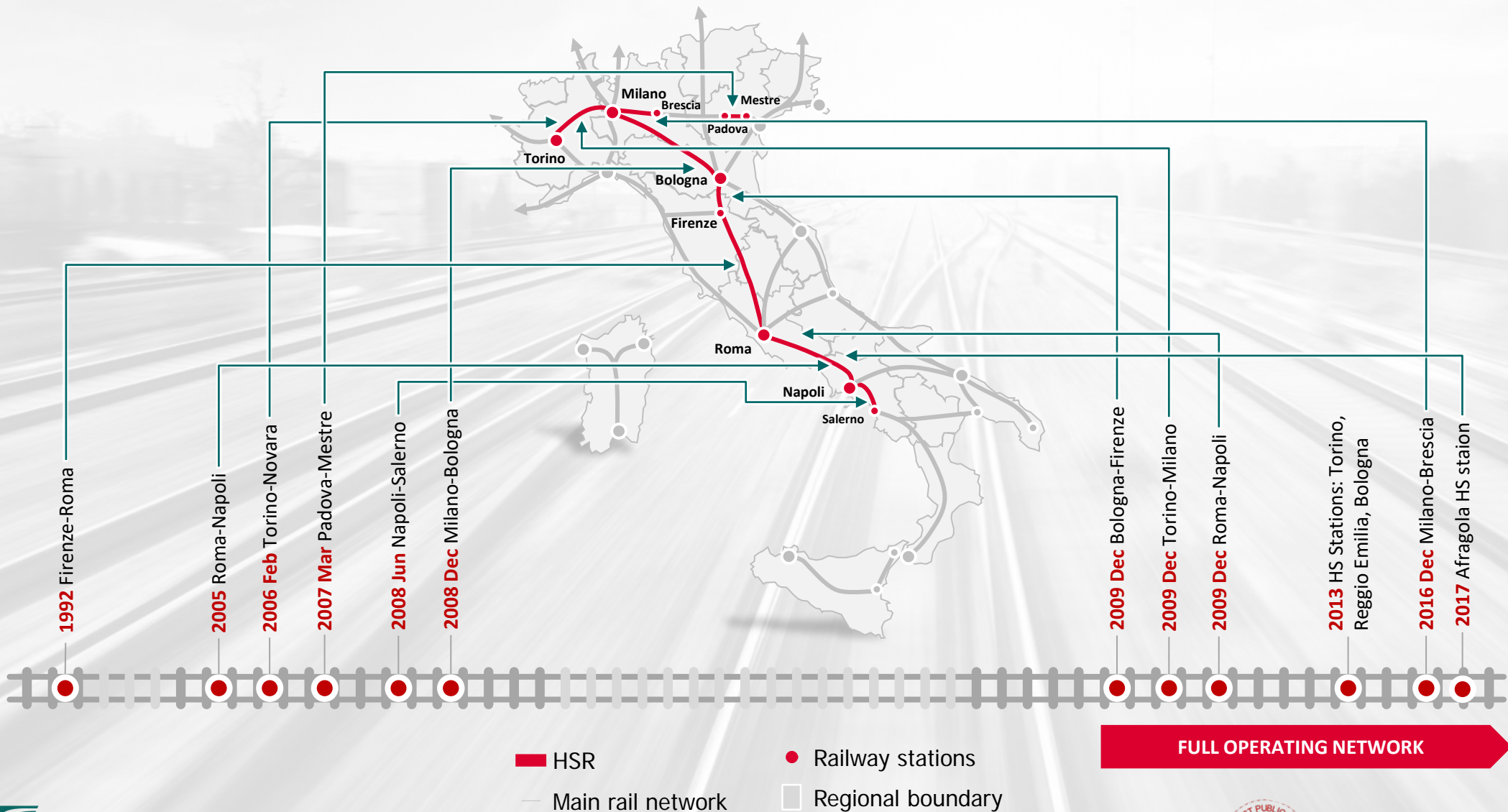
The Italian operational and management model



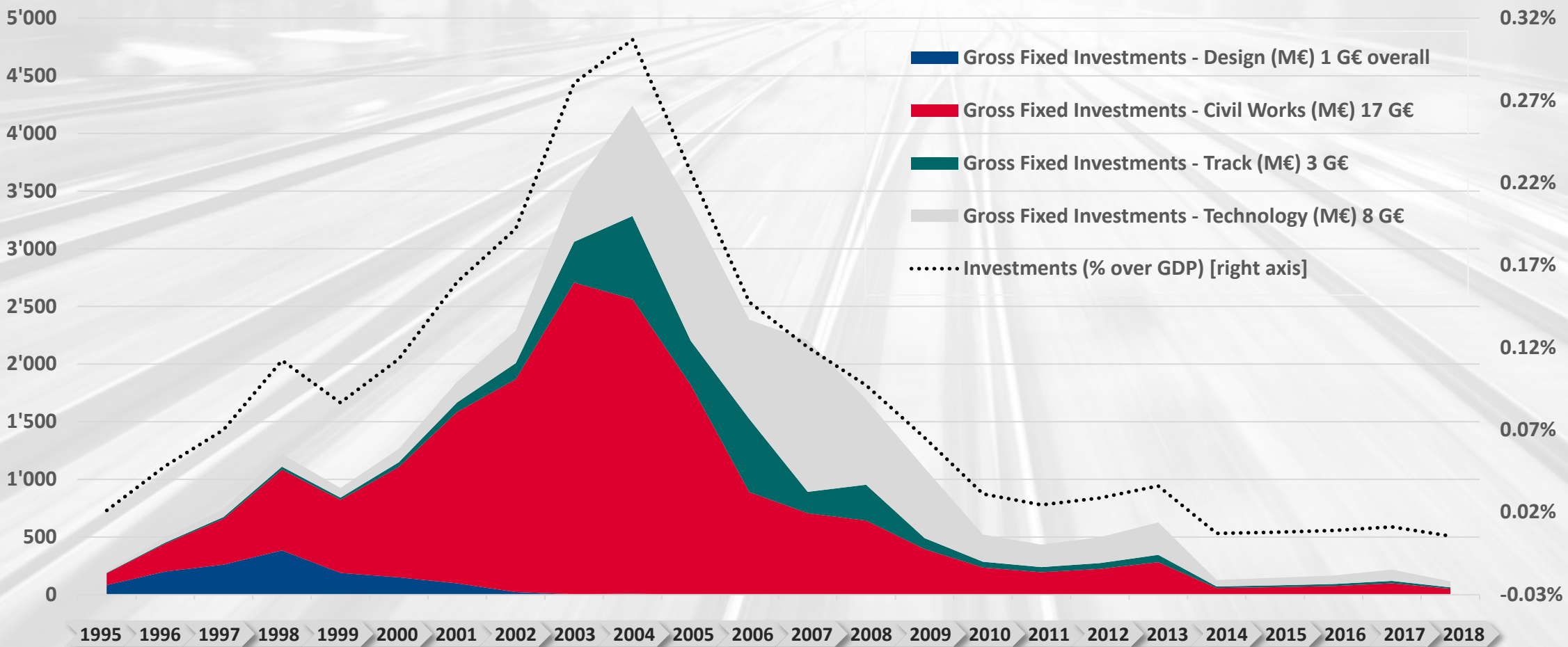


Infrastructure

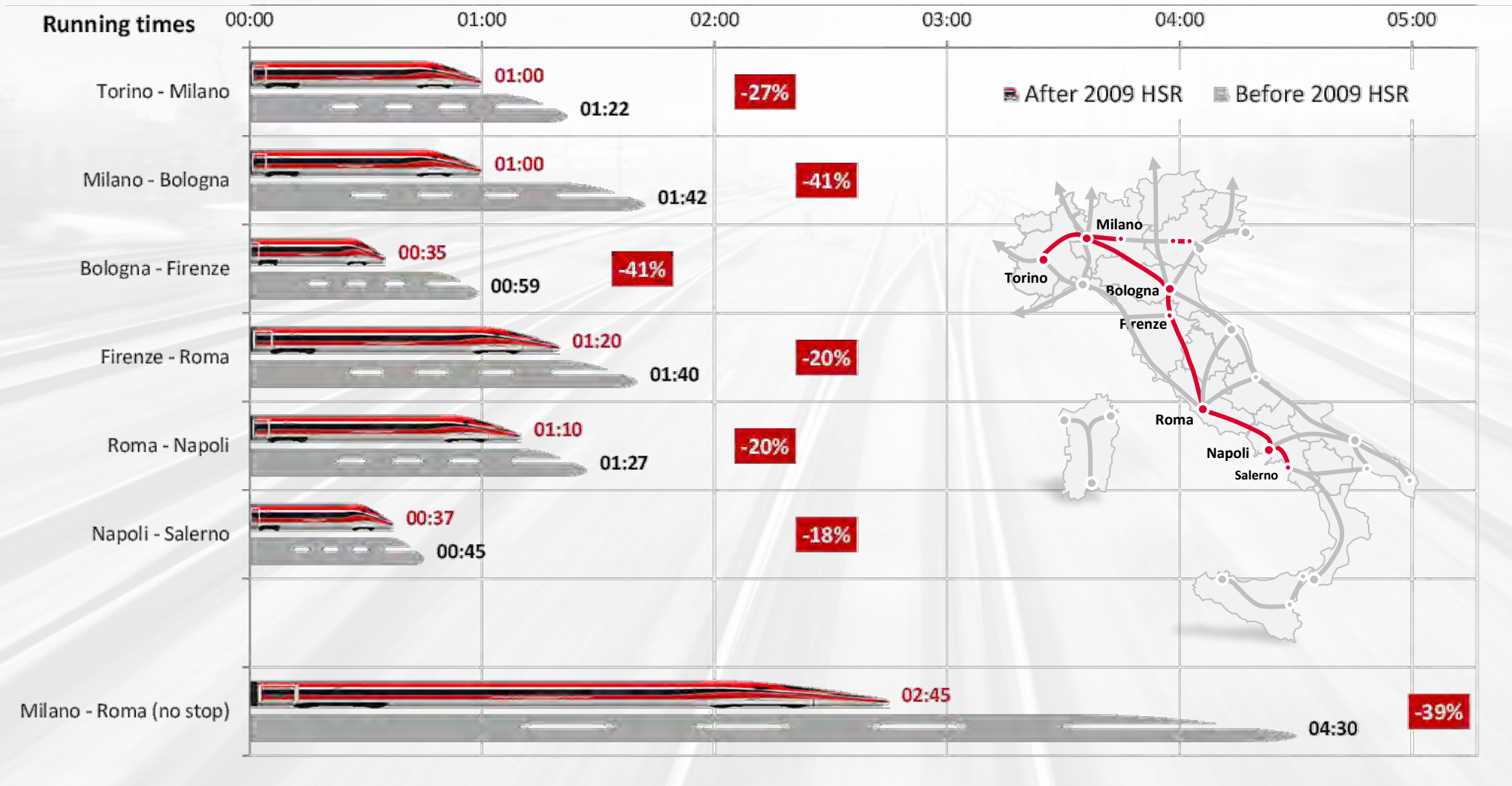
The HSR infrastructure evolution



Italy's HSR investments history



Time savings at the entry into service



Rail services



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Image source: Ferrovie dello Stato Italiane

Main events in the Italian HSR service market



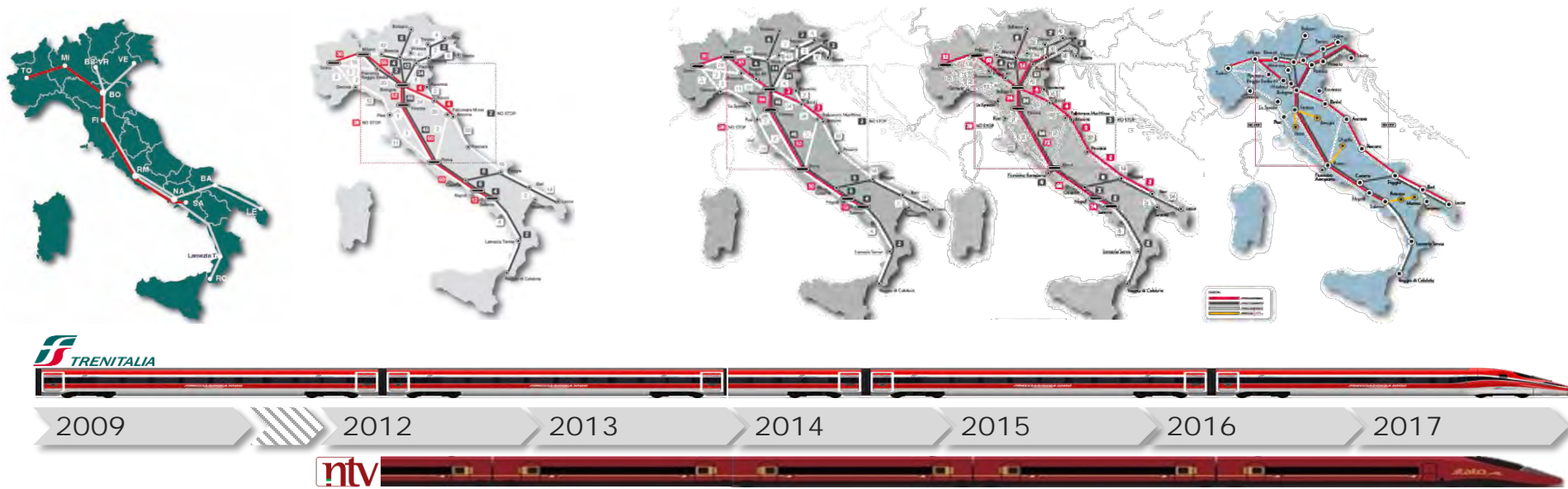
Introducing new HSR features

- ❖ Following the realization of the Italian High-Speed network, some new features were set up in addition to the simple transport service:
 - ✓ dramatic **improvements of rolling stock quality**, by both revamping (Trenitalia, since 2006) and purchasing new rolling stock (NTV, 2012 and 2017; Trenitalia, 2015)
 - ✓ **new levels of service** substituting the prior two-classes supply system, available on both Frecciarossa (since 2011) and Italo trains (since 2012)
 - ✓ **new fare systems**, including various price types and discounts
 - ✓ lots of **ancillary services**, including:
 - **on board** services (e.g. snacks and beverages, silence areas, entertainment such as cinema and news)
 - **last mile** transport support services (e.g. car renting, car sharing, bike sharing, parking at stations)
 - **Visitors and tourist support** (e.g. discounts and agreements with hotels, museums, exhibitions, events at destinations)

Rolling stock at the entry into service

			Vmax	Capacity	Cars
		FRECCIAROSSA ETR 1000	400 km/h	457 seats	8 cars
		FRECCIAROSSA ETR 500	360 km/h	574 seats	11 cars
		.italo AGV 575	360 km/h	462 seats	11 cars
		FRECCIARGENTO ETR 600	280 km/h	432 seats	7 cars
		FRECCIARGENTO ETR 485	280 km/h	489 seats	9 cars
		FRECCIABIANCA ETR 460	280 km/h	603 seats	9 cars
		FRECCIABIANCA	200 km/h	479 seats	9 cars

The service networks evolution



The service networks in 2022

The two competitors provide services on (almost) the same routes



Competition



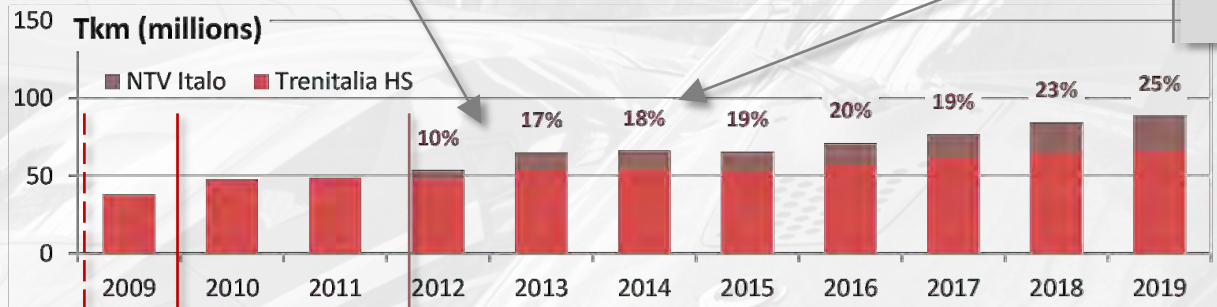
Features of the Italian high speed rail competition

- ❖ The Italian rail network is the very first case where a *competition in the market* occurred for the High-Speed services within an open-access regime.
- ❖ NTV adopted a *full range competition model*, that included cost leadership, product differentiation, and focusing on niche markets:
 - ✓ providing high-quality services with *new rolling stock*; Trenitalia reacted quick and early, achieving the same service quality well before the NTV entrance
 - ✓ taking advantage of a *lower industrial cost* due to a different work contract and trying to use cheaper paths inside urban areas
 - ✓ shaping a *service network* very similar to the Trenitalia's one; initially, NTV chose different stations inside urban areas, but quickly addressed the same Trenitalia's stations; NTV attempted to *differentiate its product* or focus on niche markets (e.g. the Bologna – Ancona non High-Speed sline) but was generally overcome by Trenitalia
 - ✓ *cutting its fares*, immediately followed by Trenitalia. But not clearly positioning as a low-cost operator, but rather as a lower-cost operator
 - ✓ due to rolling stock availability, NTV services have been always *less frequent* compared to Trenitalia's ones
- ❖ Then, the two competitors supply is currently very similar, and they started *sharing the whole market demand* more or less proportionally to their production rates

The intra-modal competition: supply and demand evolution

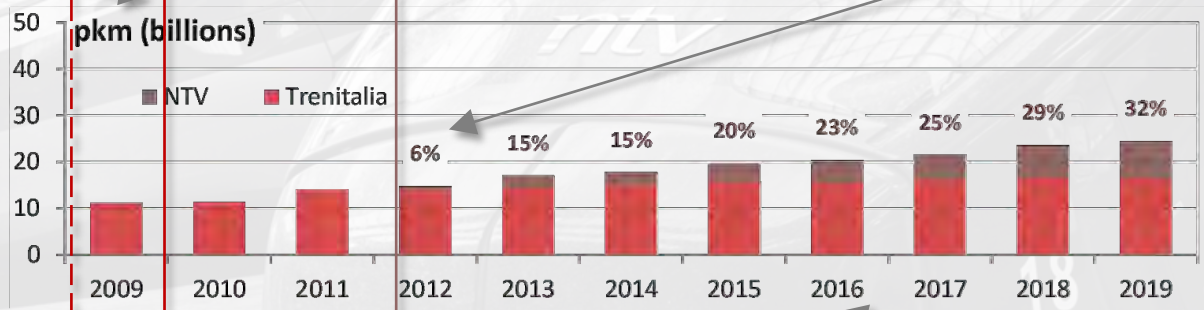
A second big supply increase occurred with the NTV entrance, between 2012 and 2013

After the debut in 2012, NTV supply settled around 20% of the overall supply



A first remarkable supply and demand increase occurred in 2009/2010, with the launch of FS HSR

Further demand increases occurred after the NTV entrance



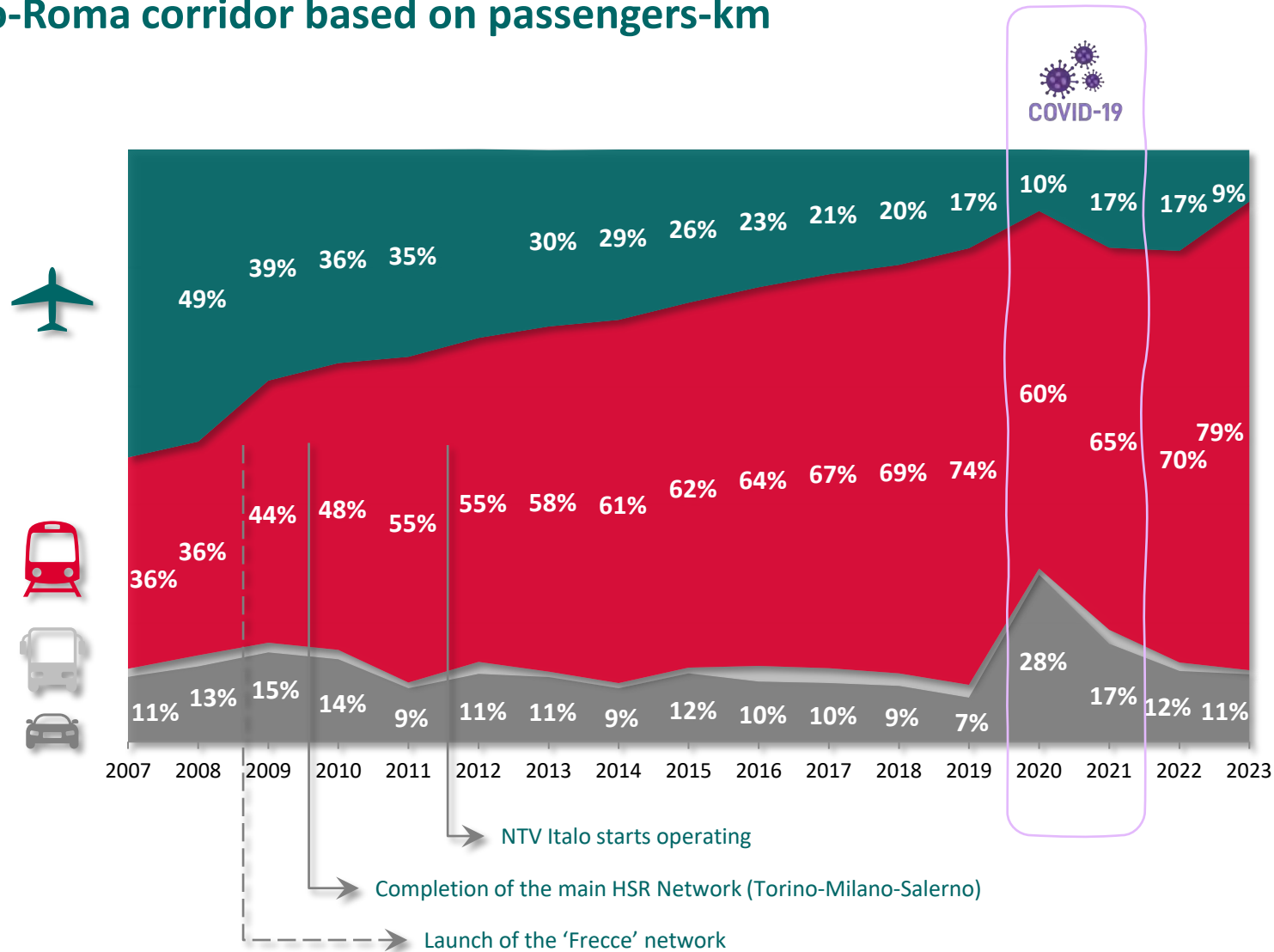
Completion of the main HSR Network (Torino-Milano-Salerno)

Launch of the 'Freccie' network

The NTV market share increased progressively from 2012 on

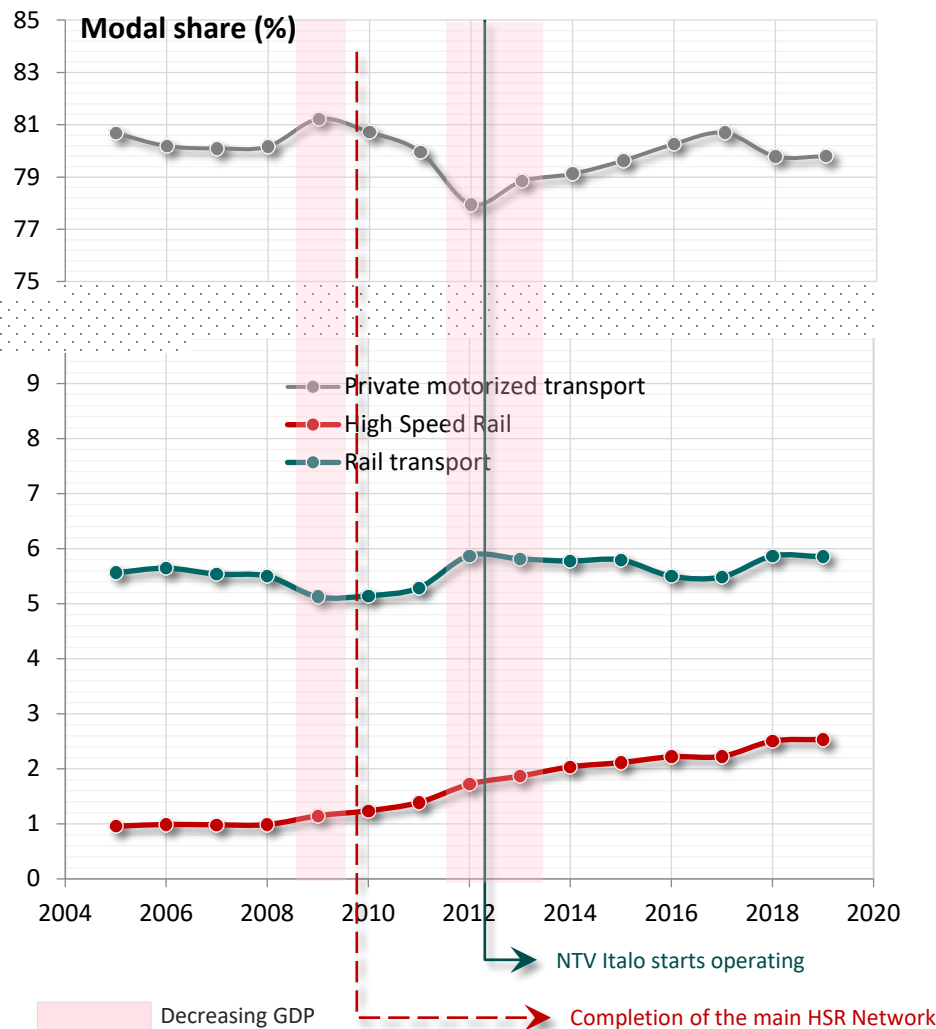
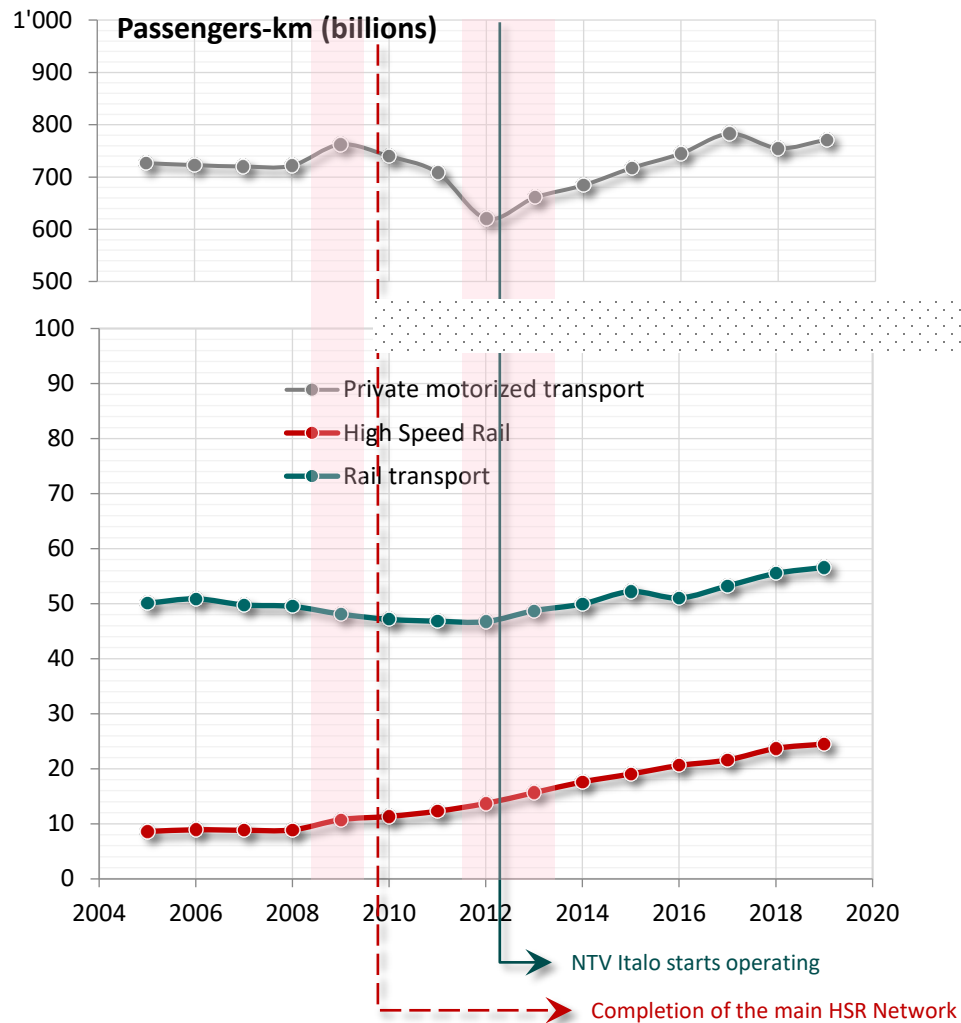
The inter-modal competition

Modal share changes in the Milano-Roma corridor based on passengers-km

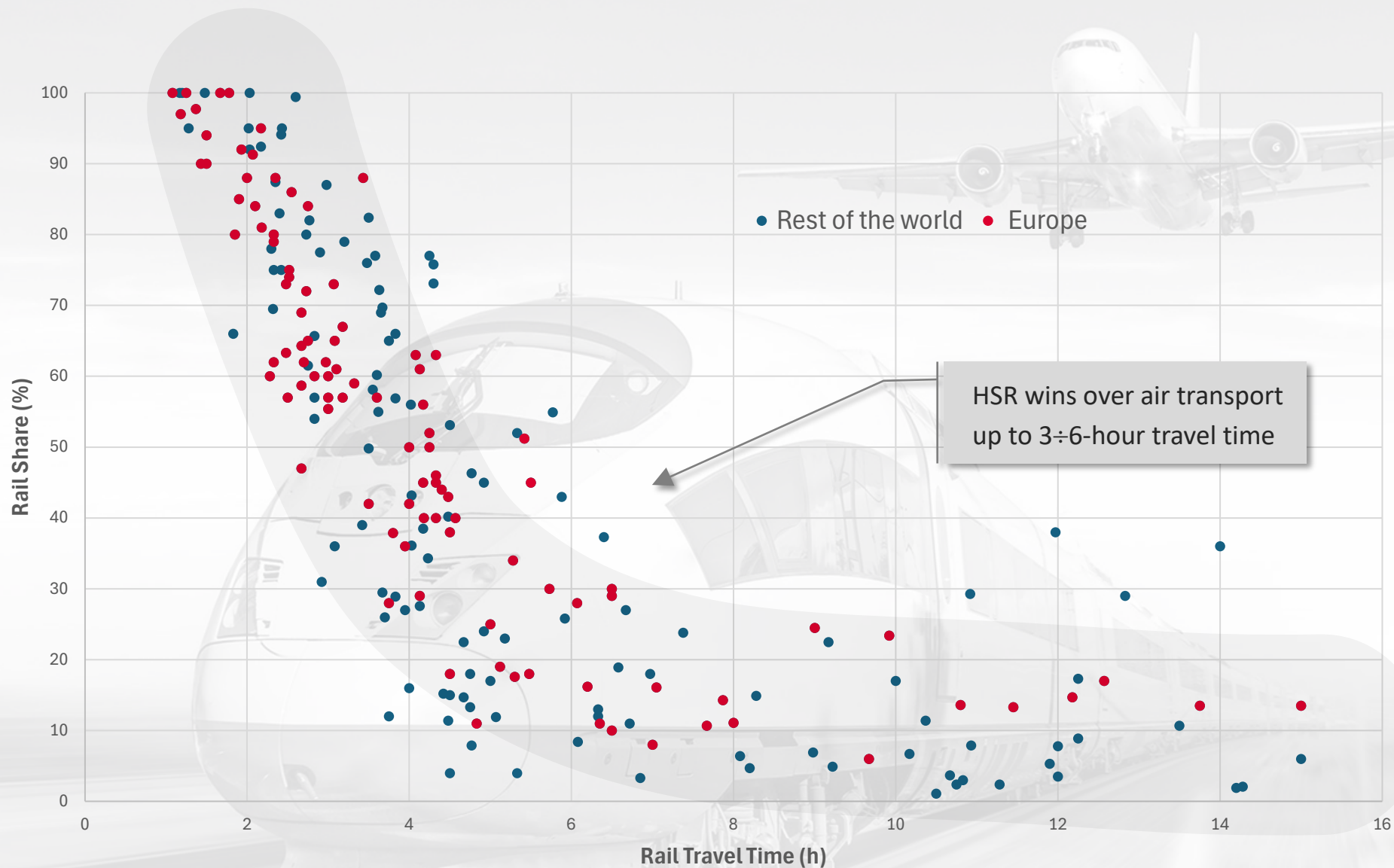


The inter-modal competition: modal shares at country level

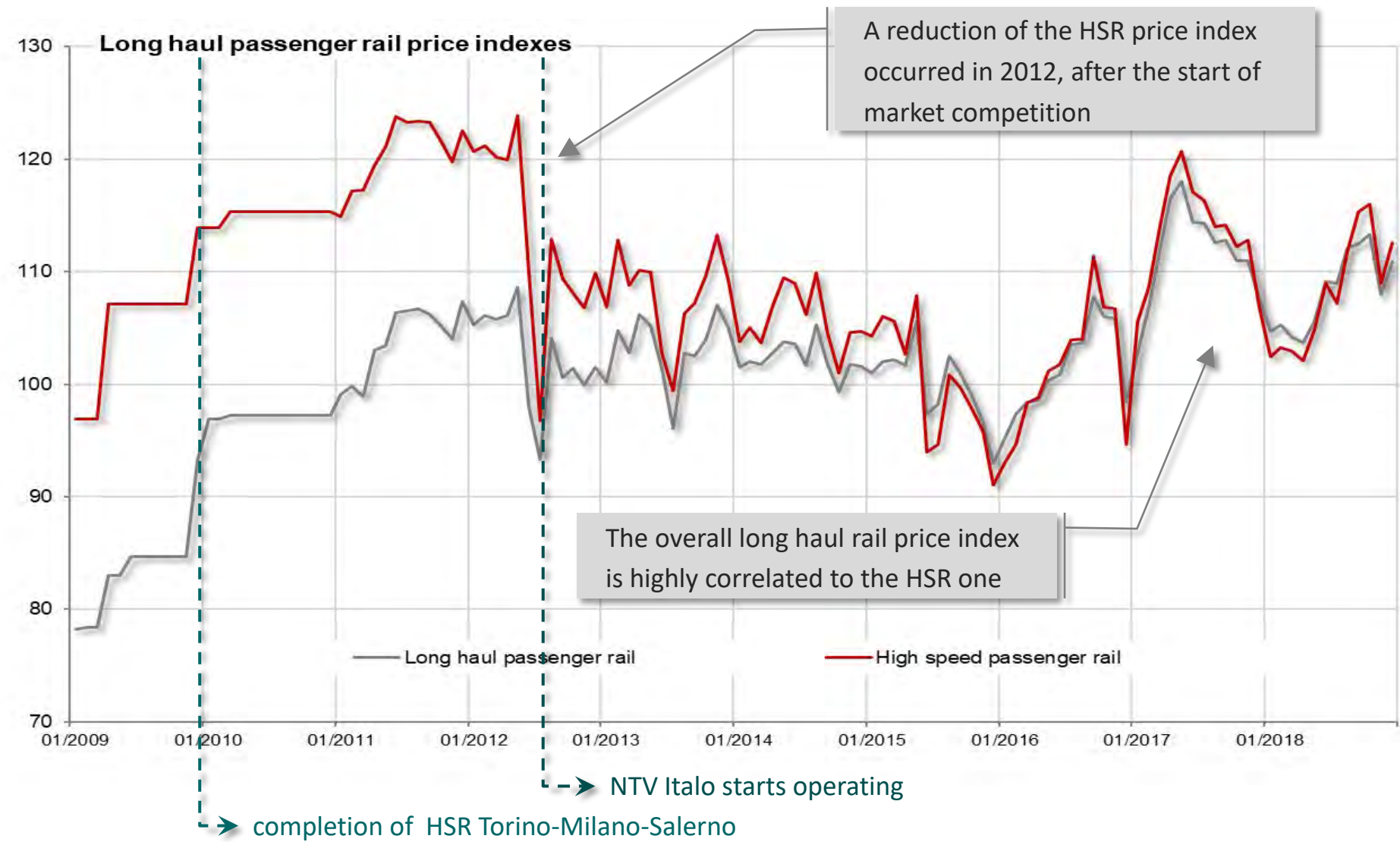
Some effects on national modal shares occurred after the core network entry into service



Worldwide Air-Rail competition



The intra-modal competition: consumer price changes



Benefits



A brief appraisal of ten years of HSR operation in Italy

2008-2018

350 Mio passengers



up to 144 daily FS HS trains



380 Mio km travelled



~1,000 Km HSR network



80+ cities connected



Up to +10% real estate value



€32 Billion invested in HSR network



+0.15% to +0.24% annual GDP



500,000 new workplaces



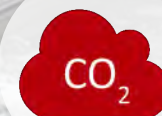
18.5 Mio hours saved



New long-distance commuting



20 Mio ton CO₂ saved



€32 Billion external costs savings



Conclusions



Final remarks

- ❖ The realization of the new Italian high speed rail infrastructure enabled a **huge supply increase** due to the new capacity availability, allowing the start of competition
- ❖ City-to-city **speeds increased as well**, joined to a remarkable increase of the **level of service**
- ❖ The main **demand growth** occurred with the rearrangement of Trenitalia's services and the increase of their quality level, even before the actual start of competition
- ❖ As soon as competition took place, a remarkable **price decrease** occurred
- ❖ The introduction of High-Speed rail produced some effects on **national modal shares**, especially during the start-up time frame
- ❖ **Higher modal shift effects** have been registered on the **directly served area** and on some **corridors**, such as the Milano – Roma one
- ❖ High-Speed rail produced **positive impacts** on several sectors such as accessibility, tourism, economic integration and output, external costs, competition, demography, employment.

Thanks for your attention!

Any questions?

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