



Is there a tradeoff between track access charges and public service contributions?

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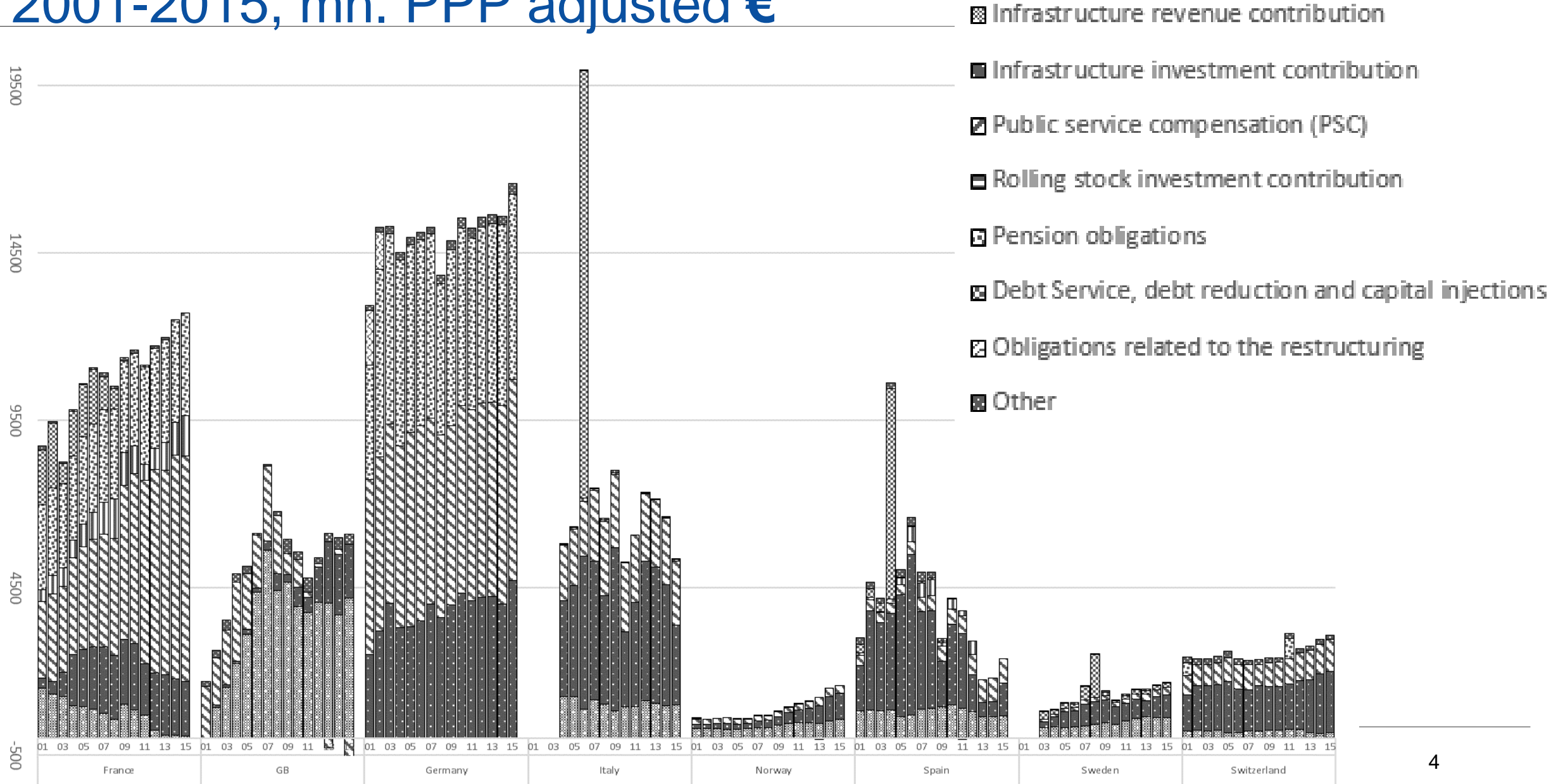
Definitions - Preliminaries

- TACs
 - Need to cover direct cost plus a rate of return which the market can bear („marginal cost“)
 - Freight in France
 - Might also be set to cover full cost of infrastructure operation
 - Germany
- Public Service Obligations/Contributions (PSO/PSC)
 - Mostly urban and regional passenger train services
 - Competitive tendering vs. direct awarding

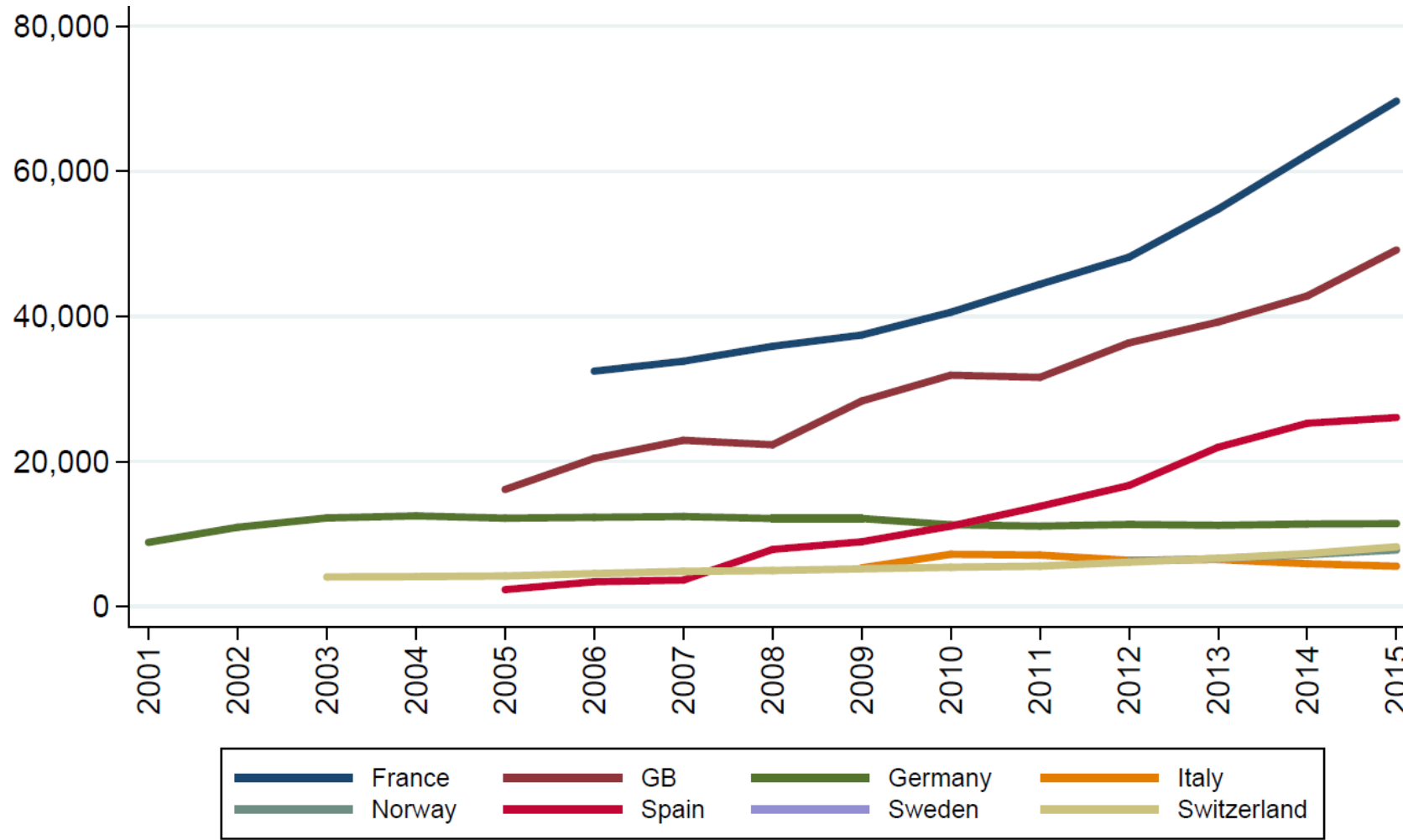
The starting point

- Significant government funding of railways
 - E.g., share of revenue passenger railway undertakings covered by governments (=PSC) on average 28%, ranging from -9.5% to 85%
 - Funding structure is complex
- Level of TACs depends on both the level and the structure of public contributions
- PSCs/PSOs vs. Infrastructure revenue contributions (vs. Infrastructure investment contributions)

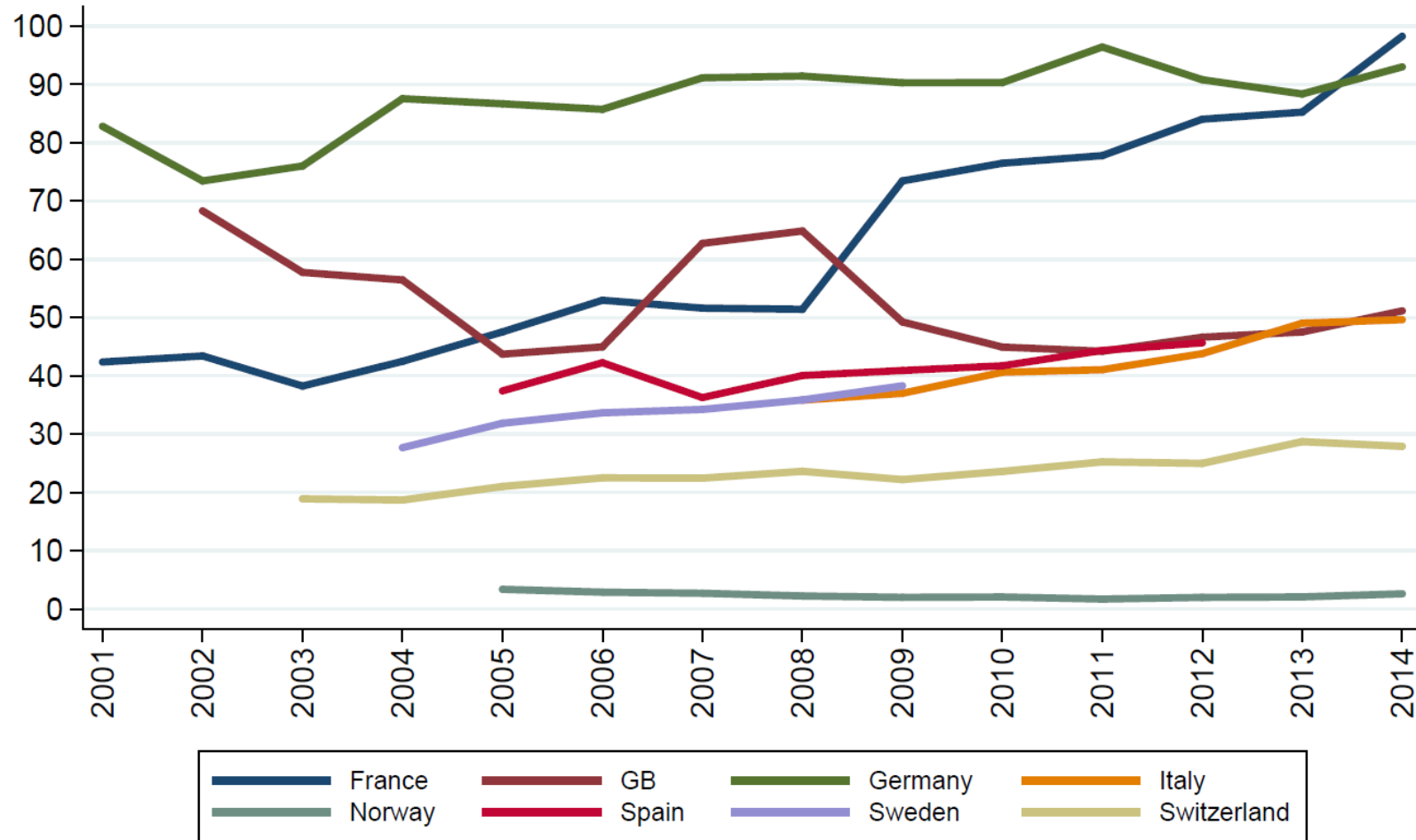
Development and Breakdown of Public Budget Contributions 2001-2015, mn. PPP adjusted €



Non-Current liabilities of main infrastructure managers 2001-2015 in mn. PPP adjusted Euro

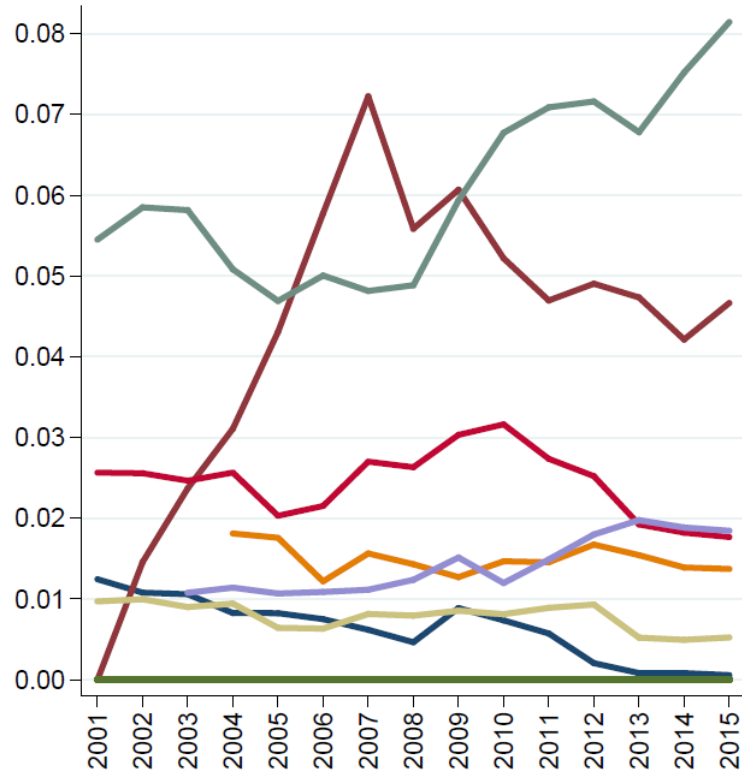


Share of infrastructure operating cost covered by access charges, 2001-2014 in percent

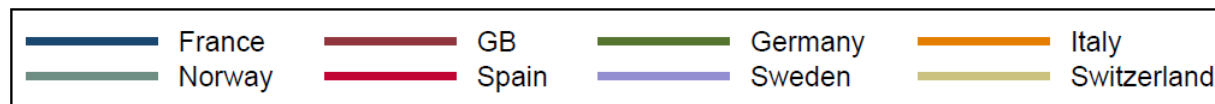
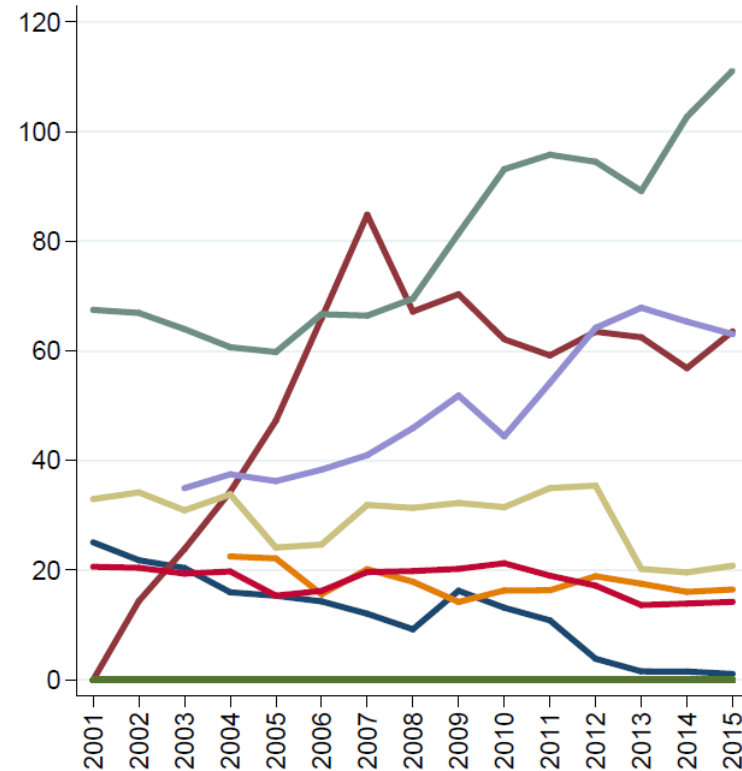


Infrastructure revenue contribution 2001-2015

(a) €PPP/ptkm



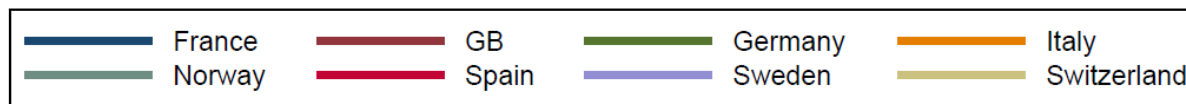
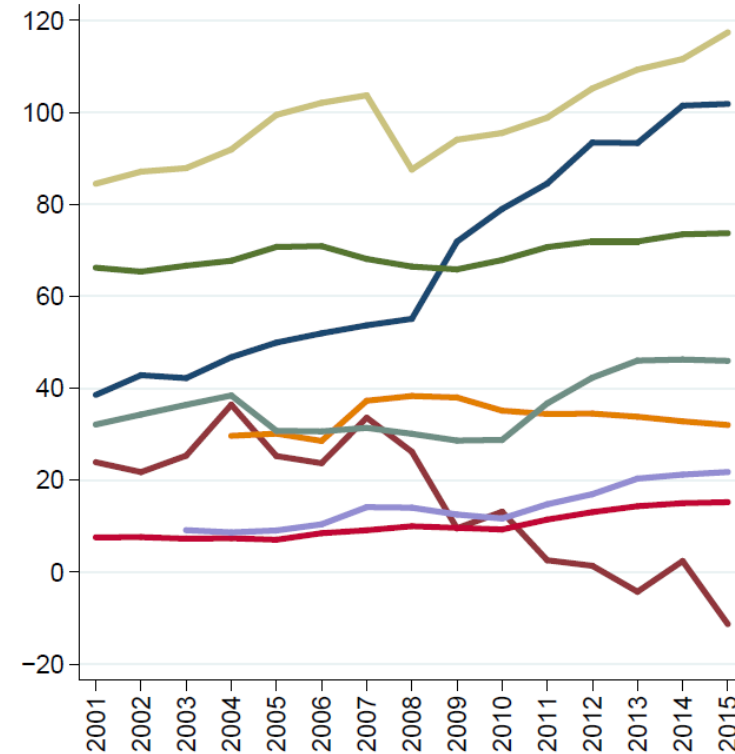
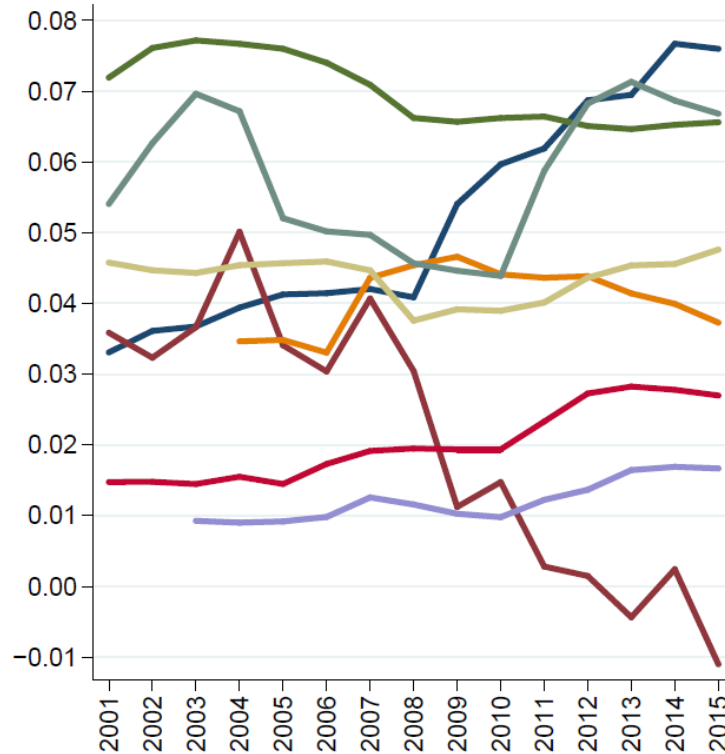
(b) €PPP/inhab.



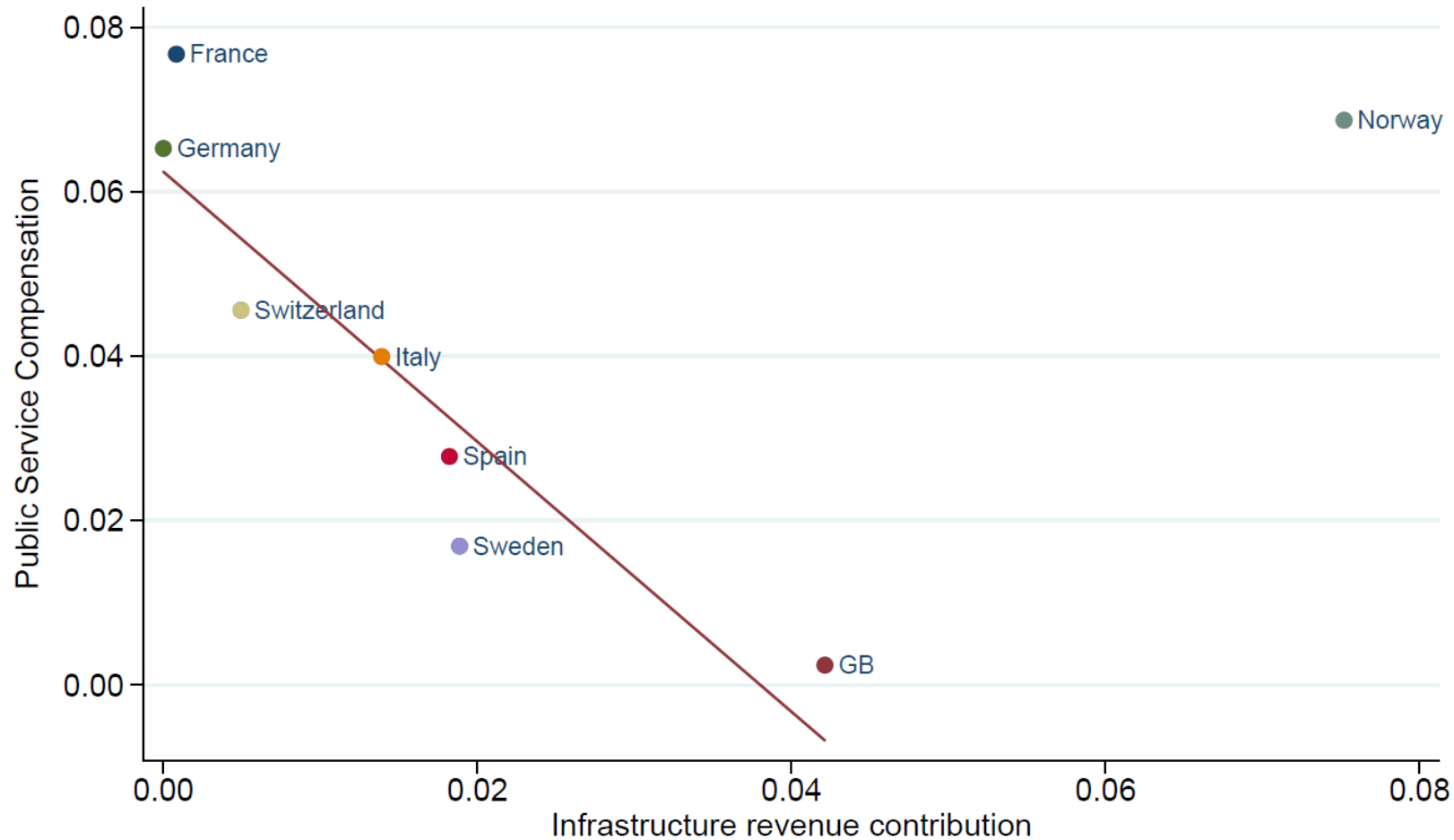
Public Service Compensation 2001-2015

(a) €PPP/pkm

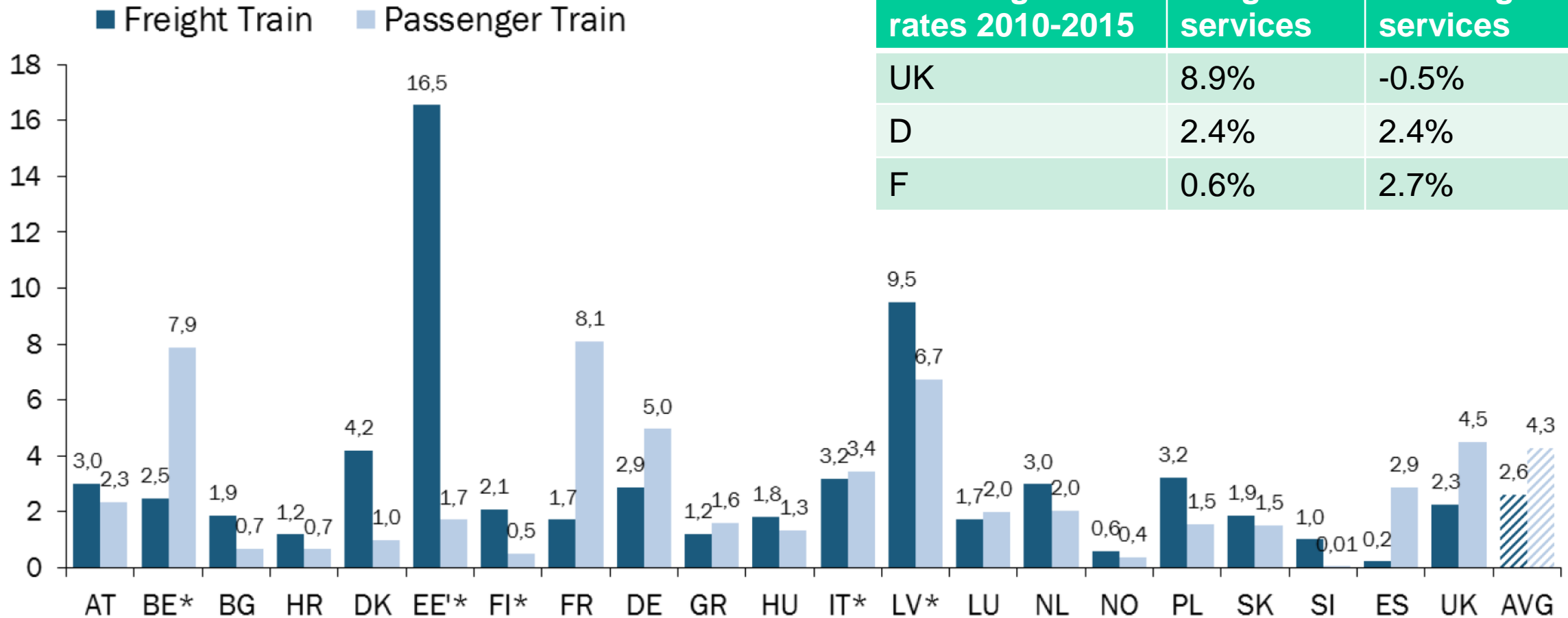
(b) €PPP/inhab.



Ratio of PSC and infrastructure revenue contribution in 2014 in €/ptkm



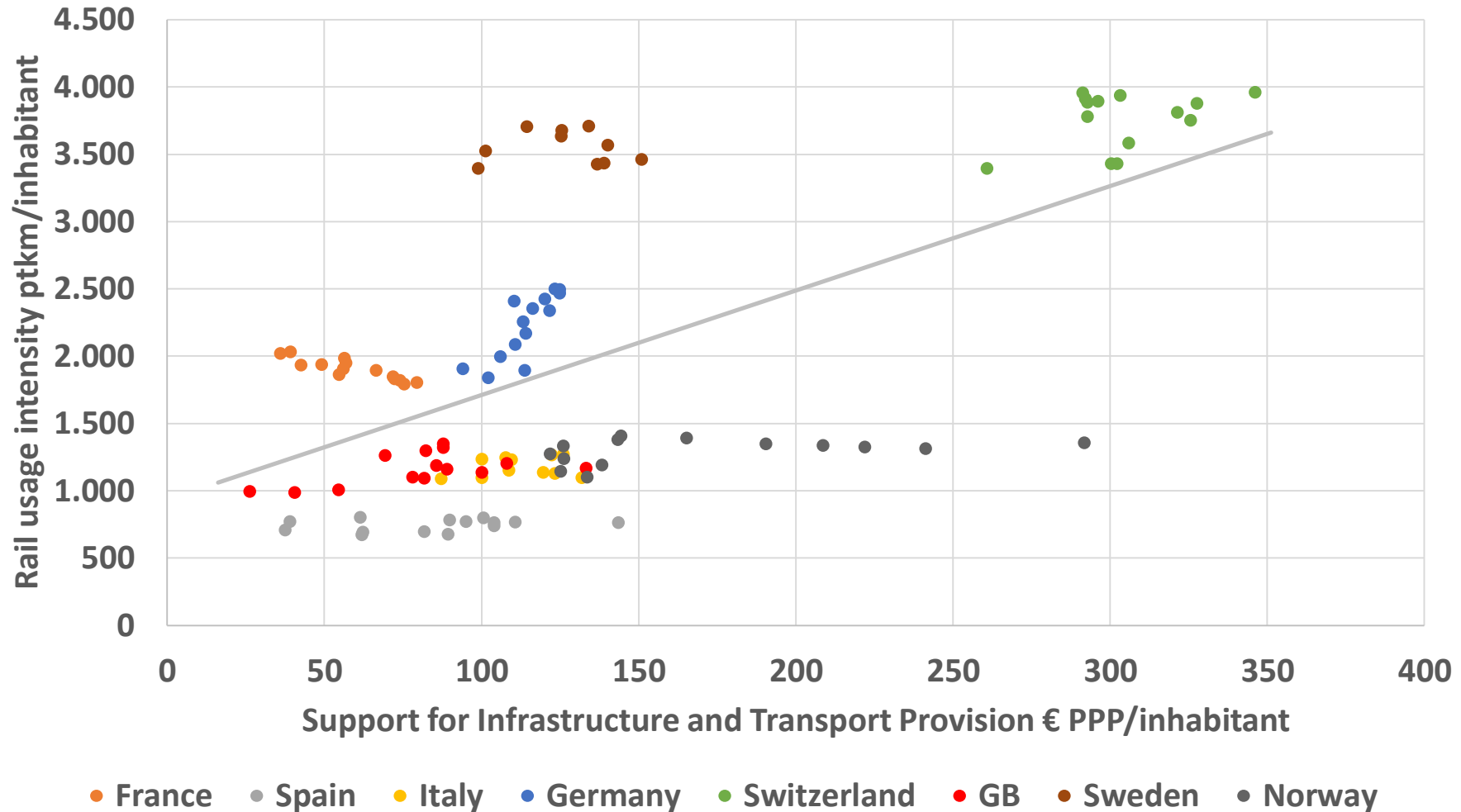
Average Level of TACs in European Countries €/tkm in 2015 (IRG-Rail)



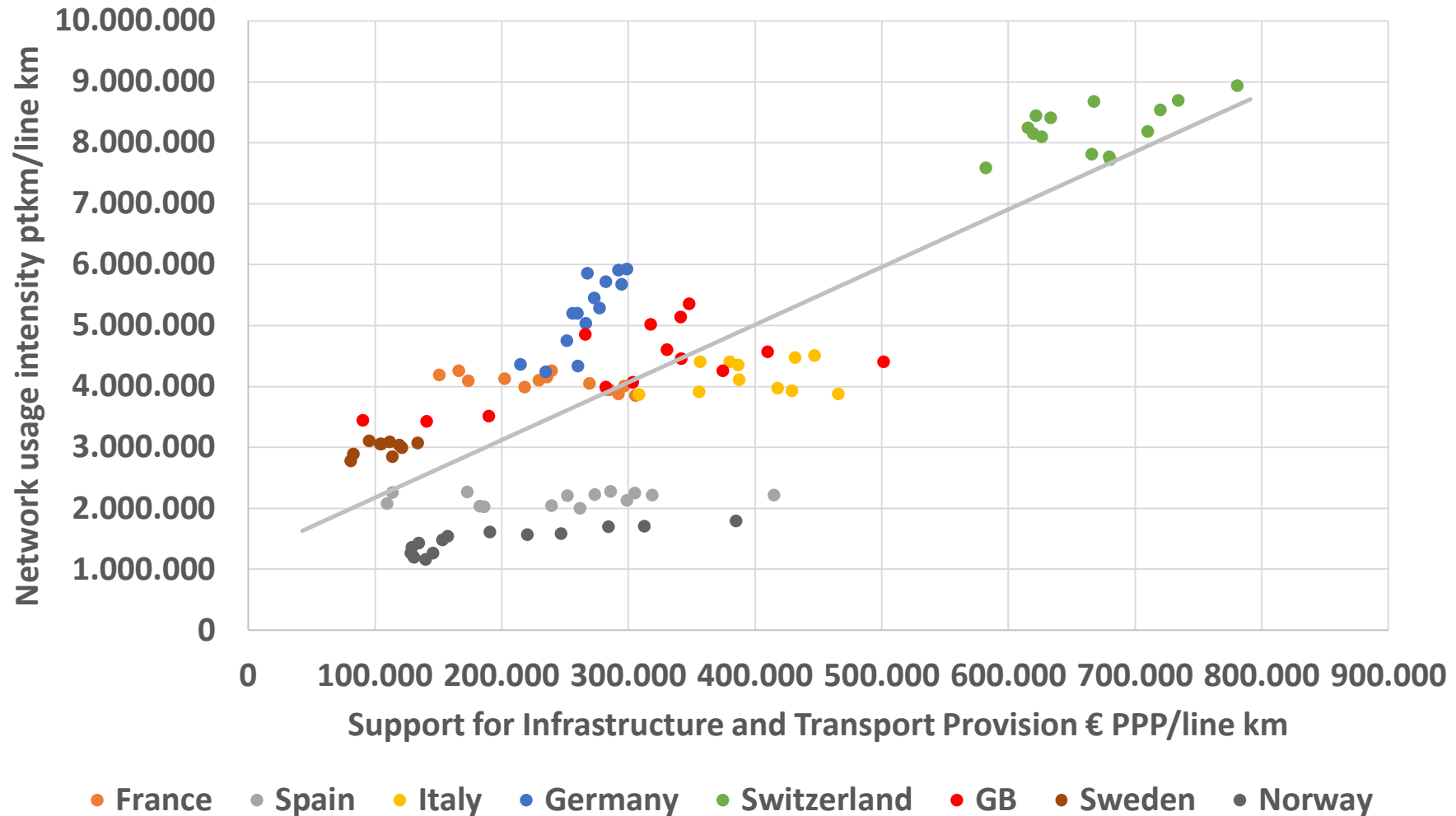
Annual growth rates 2010-2015	Freight services	Passenger services
UK	8.9%	-0.5%
D	2.4%	2.4%
F	0.6%	2.7%

Performance and Efficiency

Rail usage intensity and support for infrastructure and transport provision per inhabitant 2001-15



Network usage intensity and support for infrastructure and transport provision per line km 2001-15



Efficiency effects

- More funds lead to higher output/efficiency
- How you spend the money also matters: Directly finance infrastructure
 - + Allocative efficiency: Price = Marginal cost
 - + Competition effect?? Open access
 - Governance problems, in particular for network expansion and line closures
 - Investment incentives for infrastructure manager

Empirical analysis – the effect of the level and structure of funding on performance (Input-Output-Analysis: DEA)

	Model 1	Model 2
TOC+IC/CAPITA	-0.00224*** (0.000800)	-0.00172** (0.000783)
SHARE OF REVENUE CONTRIBUTIONS TO IM	-0.00679*** (0.00165)	-0.00556*** (0.00154)
LOG(POPULATION DENSITY)		-2.444** (1.211)
SHARE FREIGHT TRANSPORT		-0.0469*** (0.00991)
CONSTANT	1.674*** (0.287)	16.32** (6.380)
sigma	0.214*** (0.0150)	0.195*** (0.0137)
Observations	115	115
Wald Chi2	3210.1	3688.1

Standard errors in parentheses

Individual and year fixed effects included.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Conclusions

- Performance depends on government funds
- Is it clear that we should restructure financing?
 - Allocative efficiency and empirical analysis points to investment revenue contributions (and lower TACs)
 - Downsides?
 - Long run investment decisions on network expansion or reduction
- Overall approach necessary, taking into account all modes of transportation
 - Would there be no funding and charging problem if road transport were priced according to its (external) cost?

QUESTIONS & REMARKS

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