International Transport Forum

Roundtable

Efficiency in Railway Operations and Infrastructure Management

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Efficiency Indicators of Railways in France

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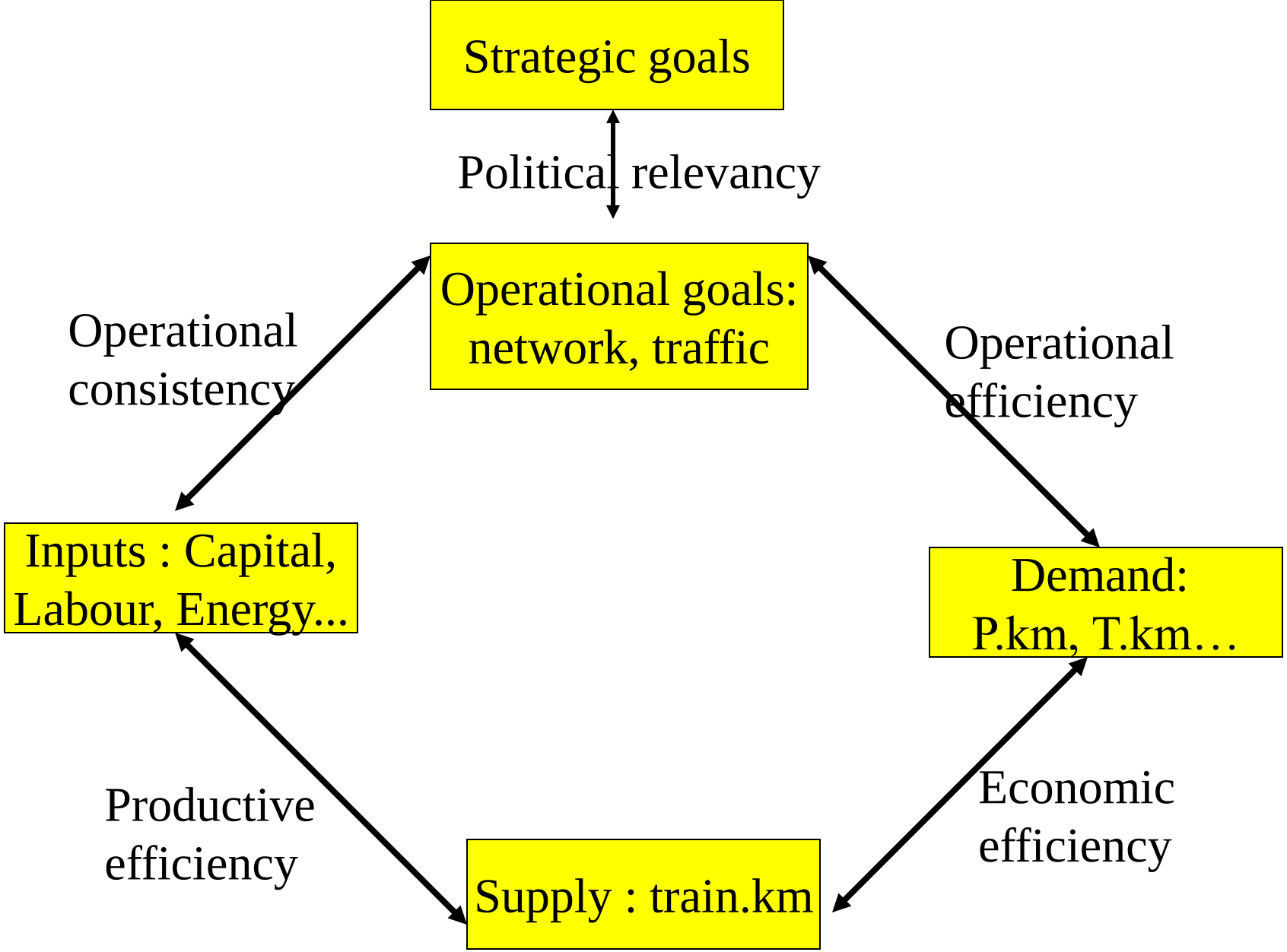
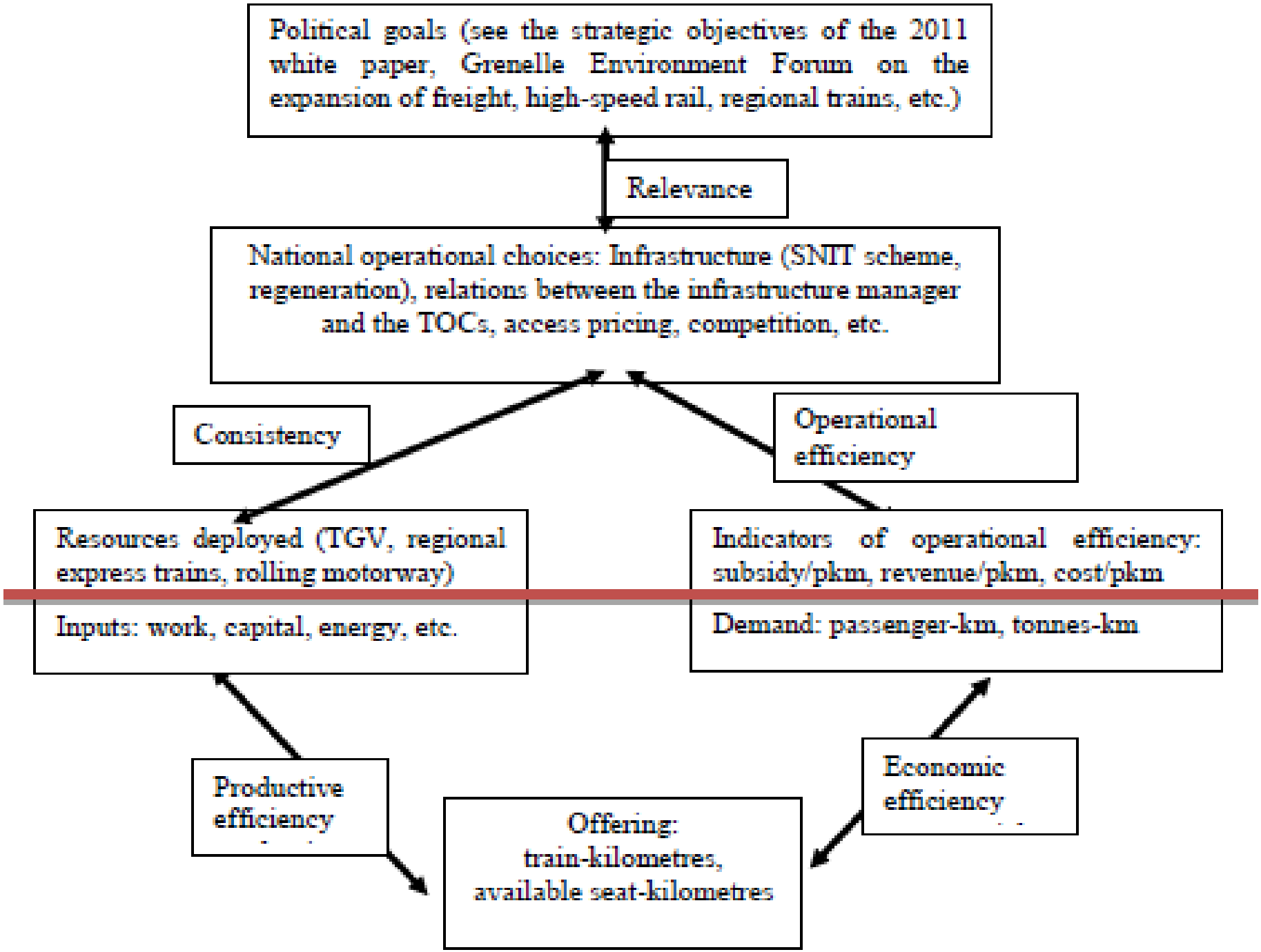
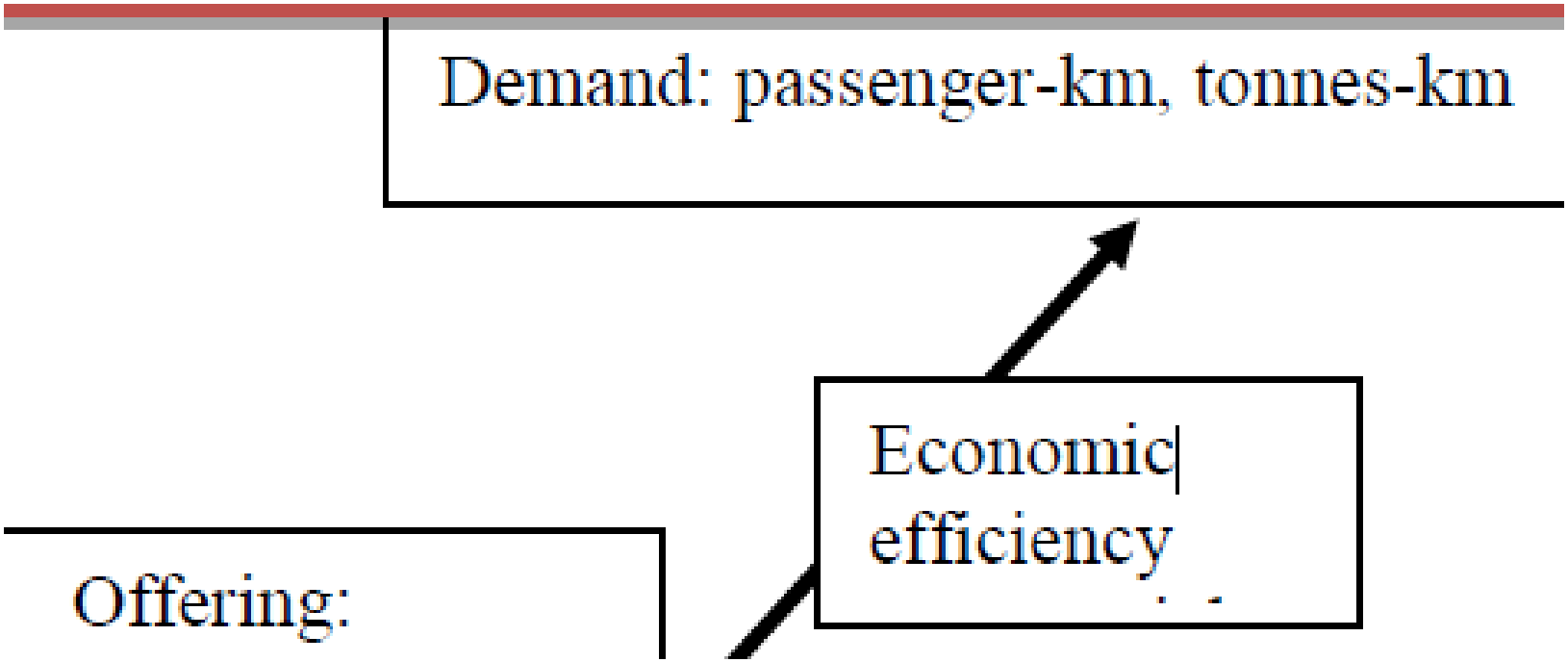

Strategic goals
Political relevancy
Operational goals: network, traffic
Operational consistency
Operational efficiency
Inputs : Capital, Labour, Energy...
Demand: P.km, T.km…
Productive efficiency
Economic efficiency
Supply : train.km

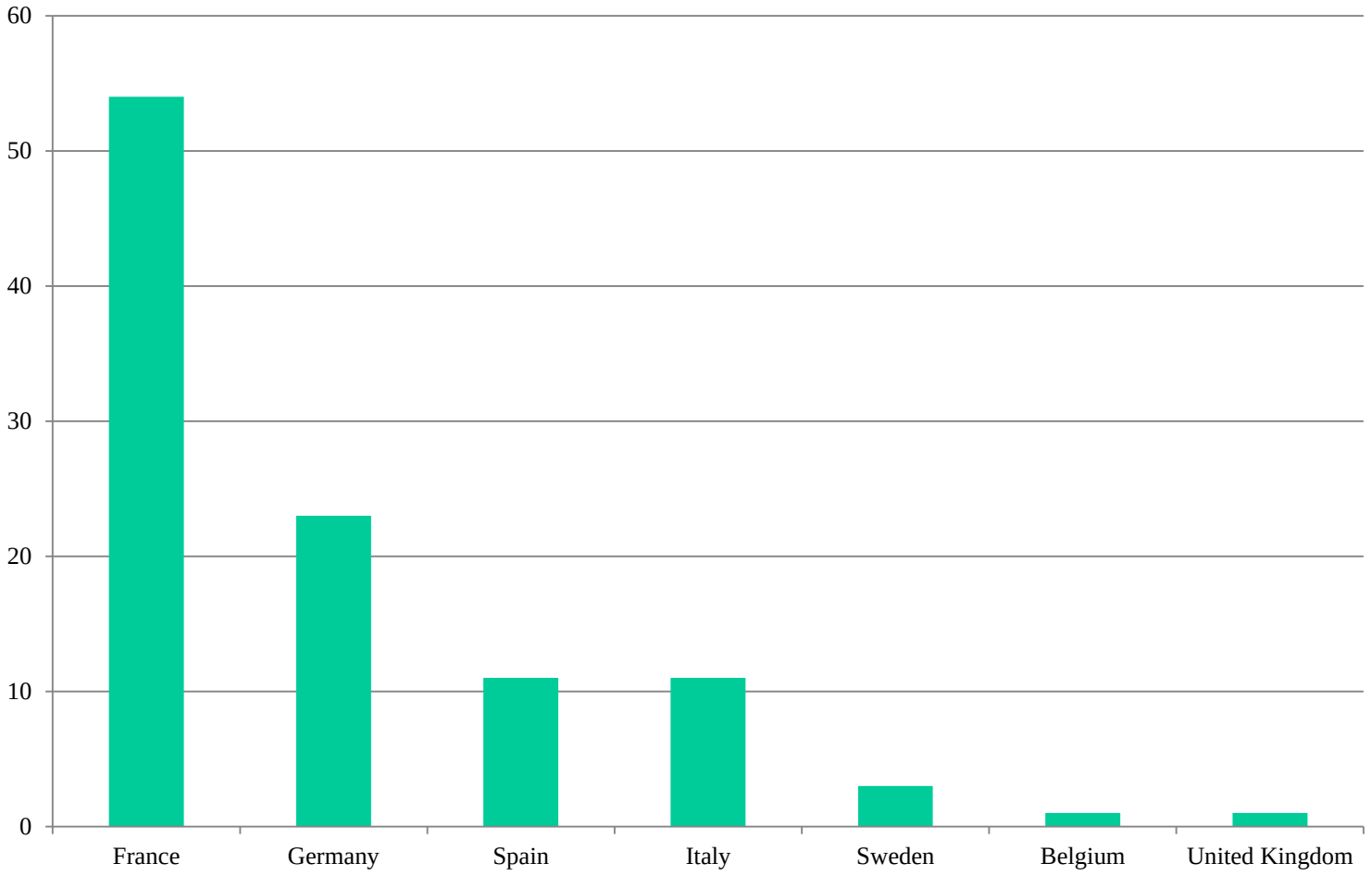
2) Efficiency of rail transport services


Political goals (see the strategic objectives of the 2011 white paper, Grenelle Environment Forum on the expansion of freight, high-speed rail, regional trains, etc.)
Relevance
National operational choices: Infrastructure (SNIT scheme, regeneration), relations between the infrastructure manager and the TOCs, access pricing, competition, etc.
Consistency
Operational efficiency
Resources deployed (TGV, regional express trains, rolling motorway)
Inputs: work, capital, energy, etc.
Indicators of operational efficiency: subsidy/pkm, revenue/pkm, cost/pkm
Demand: passenger-km, tonnes-km
Productive efficiency
Economic efficiency
Offering: train-kilometres, available seat-kilometres

Economic efficiency



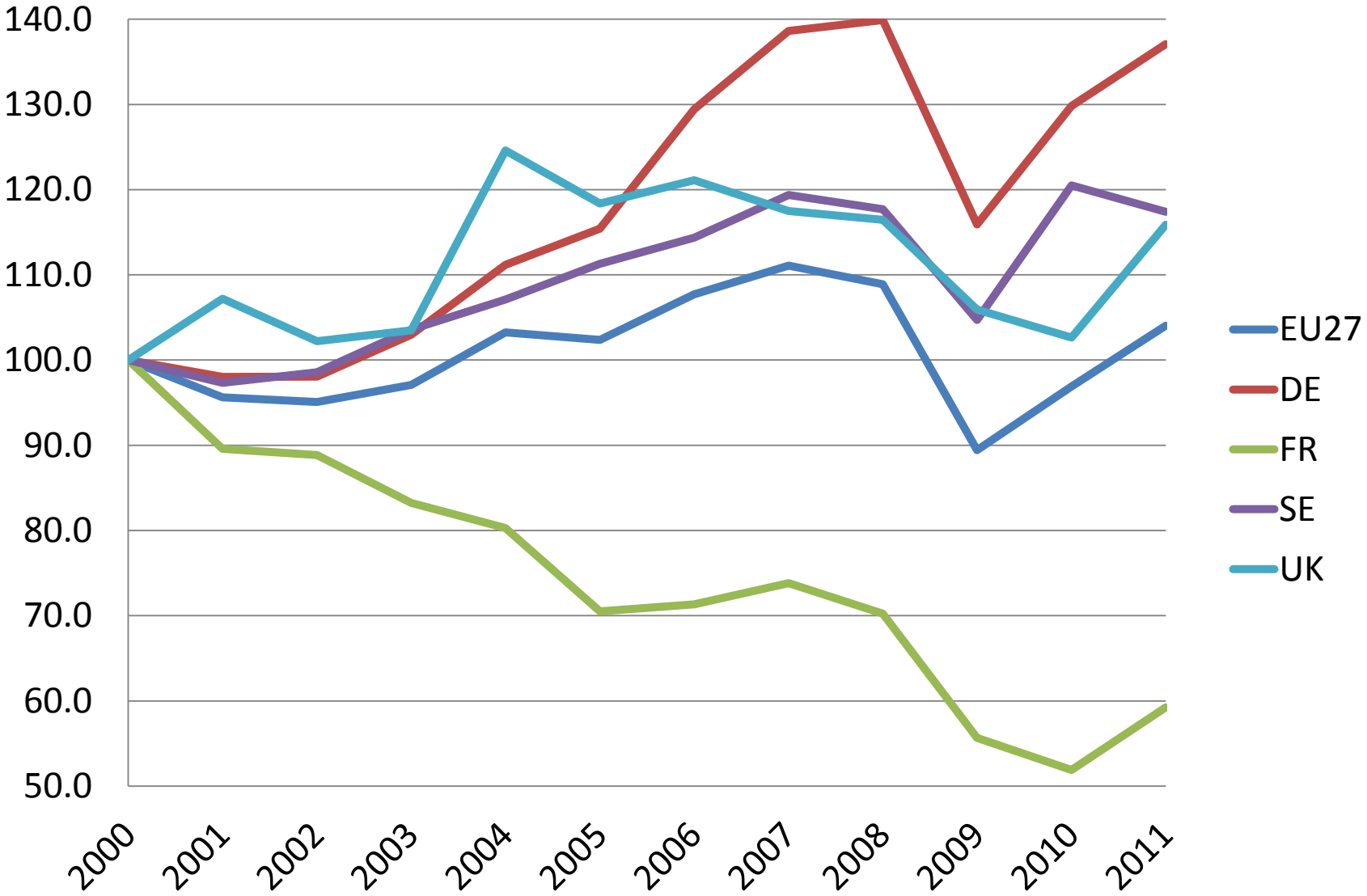
High Speed Trains Traffics in Europe (Billion of pass.km/year - 2012)



Rail passenger traffic

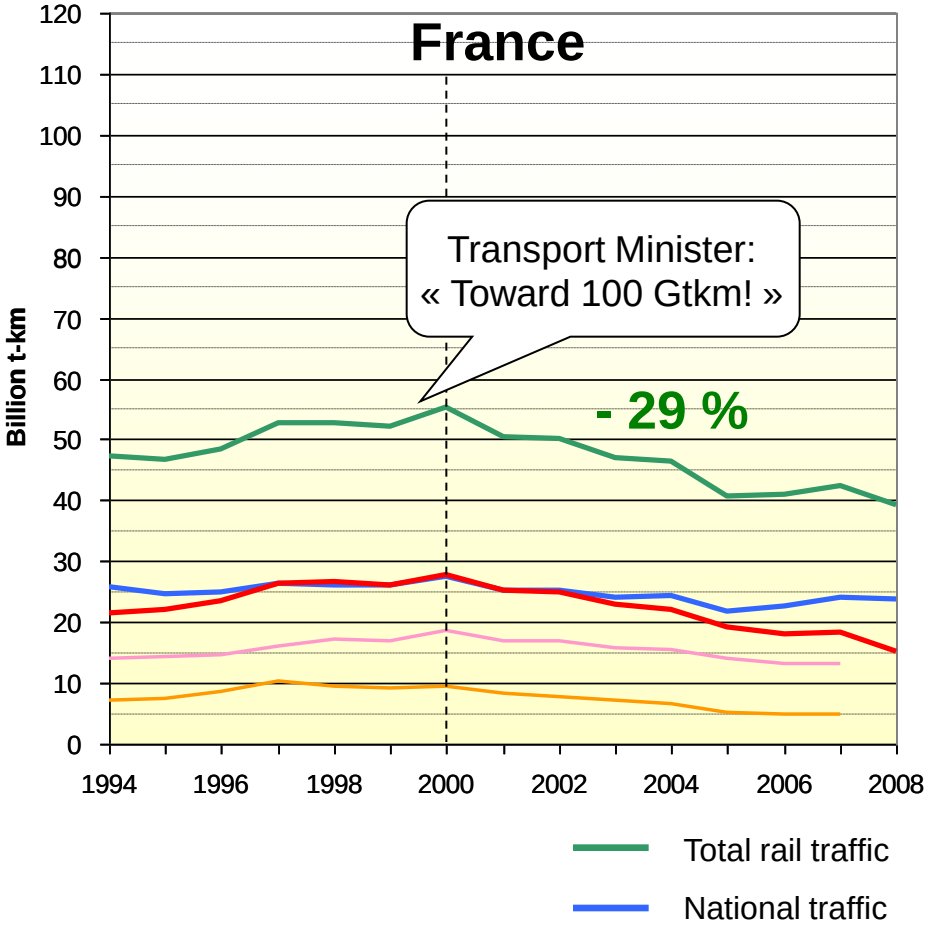
	2013	2009	2010	2011	2012	2013	2013/2008
Long distance	61 256	-1,4	-0,2	3,6	-2,7	-1,2	-0,4
- HSR	53 768	-0,7	1,8	2,4	0,0	-0,5	0,6
- Intercity	7 489	-4,9	-10,6	10,7	-17,6	-5,8	-6,1
Regional	31 184	-0,3	0,7	3,7	3,6	0,1	1,5
- TER	14 037	1,2	0,2	4,5	5,5	-1,2	2,0
-Paris region	17 147	-1,4	1,1	3,1	2,0	1,2	1,2
Total	*75 293*	*-0,9*	*-0,1*	*3,7*	*-1,2*	*-1,2*	*0,0*
Total with Paris	92 440	-1,0	0,1	3,6	-0,7	-0,7	0,2

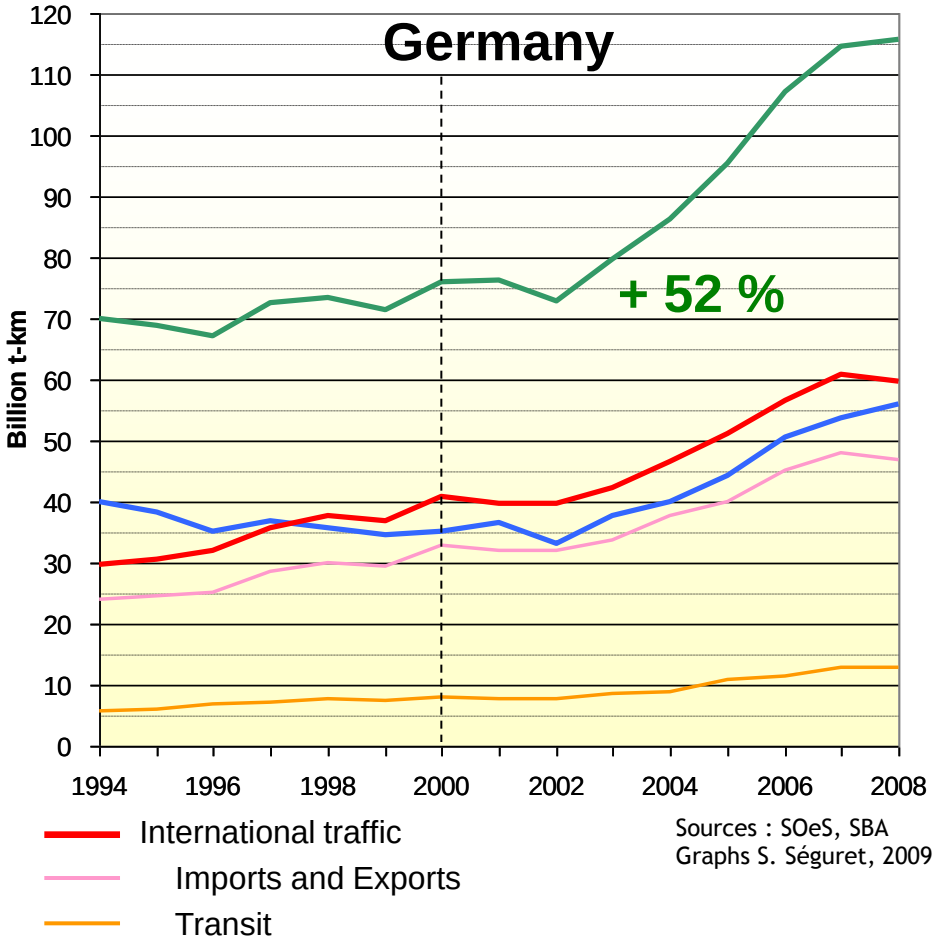
Rail Freight traffic Tkm



Focus on rail freight traffic

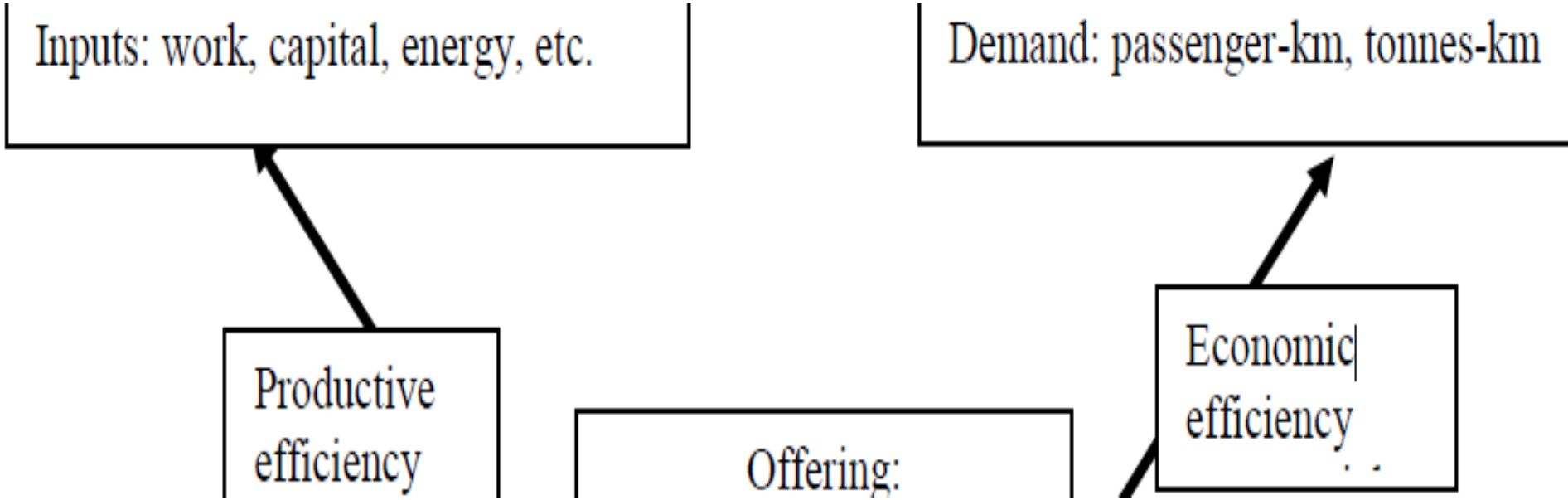
- **Competition on the market**
- **Germany saw liberalization as a way to support rail ≠ France**
- **Modal share rail Germany 2003-2008: + 1,6 pts, thereof 1,2 from competitors**



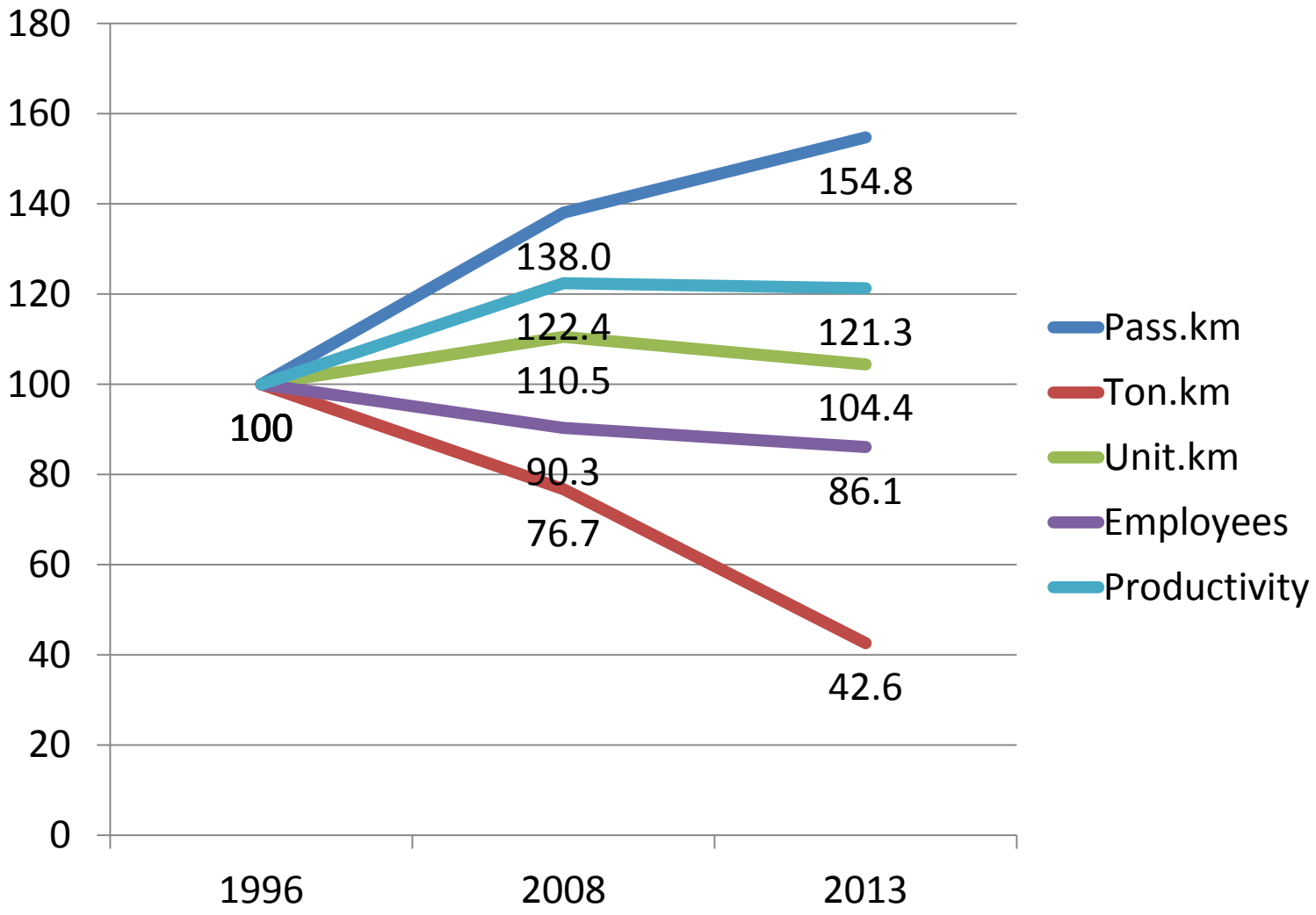


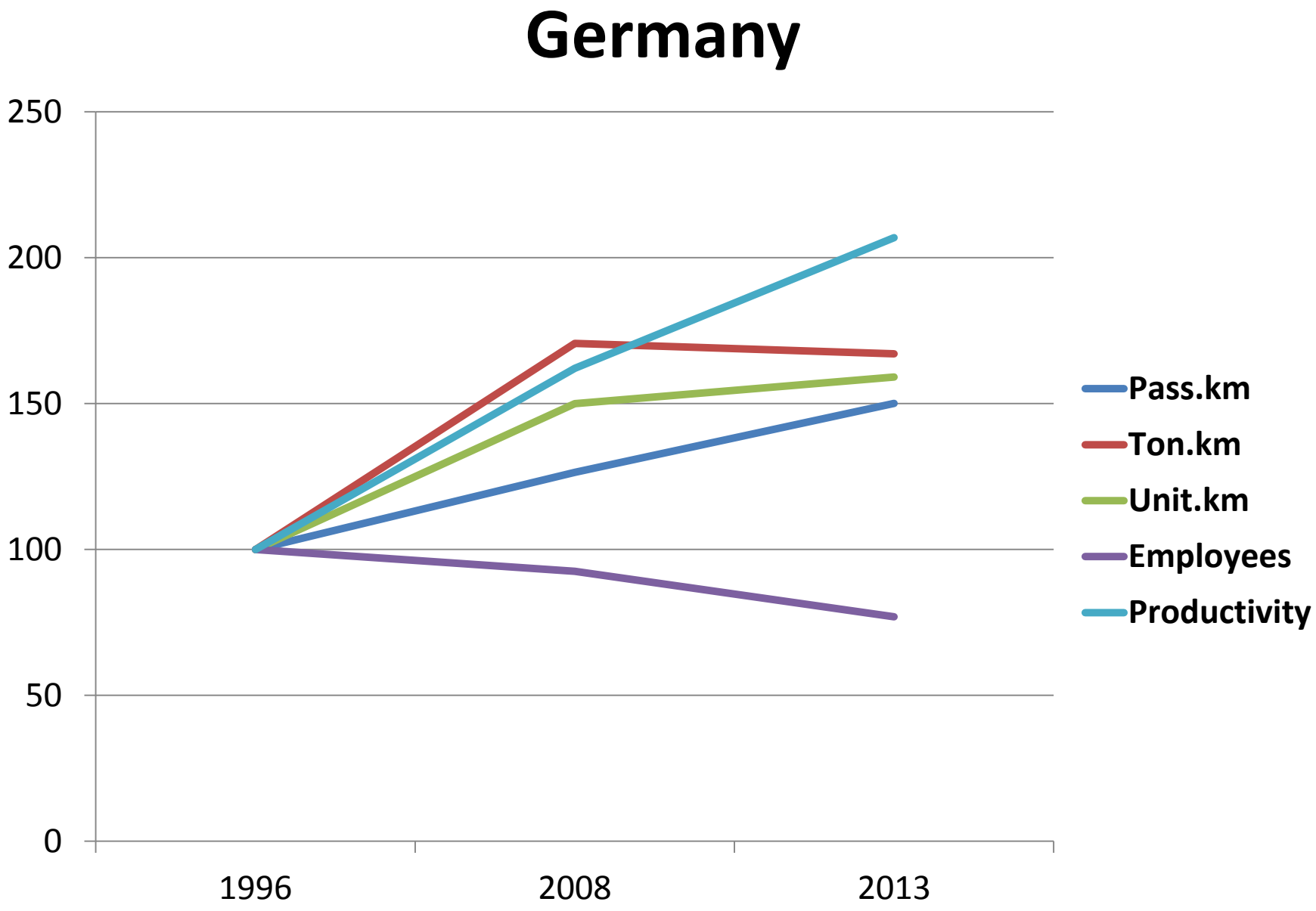
Sources : SOeS, SBA
Graphs S. Séguret, 2009

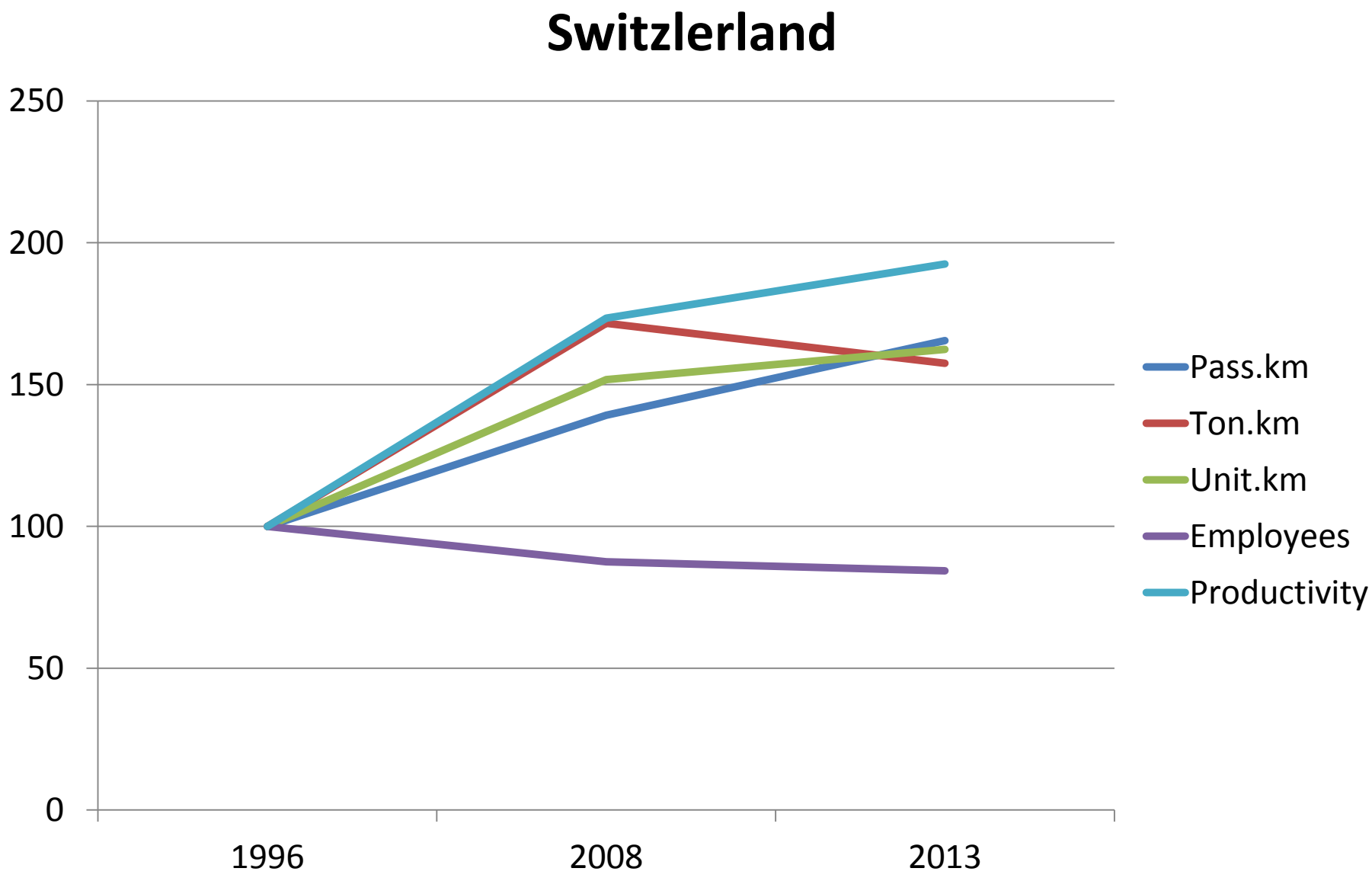
Productive efficiency



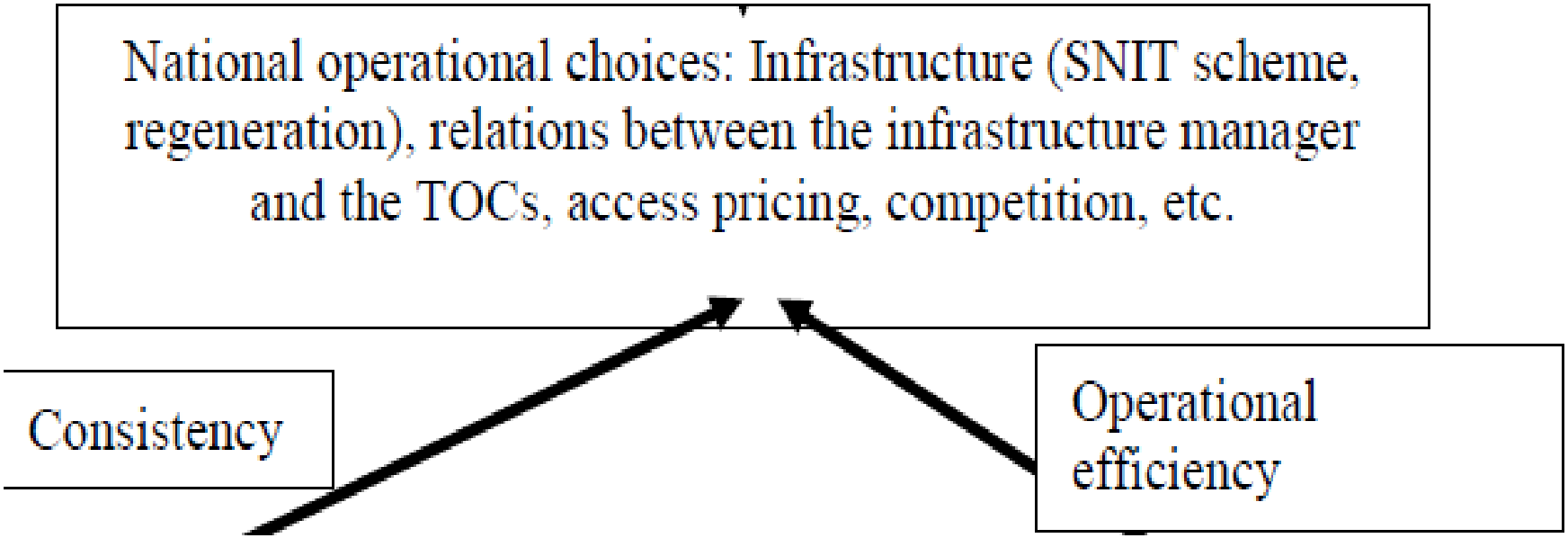
Main indicators (France)



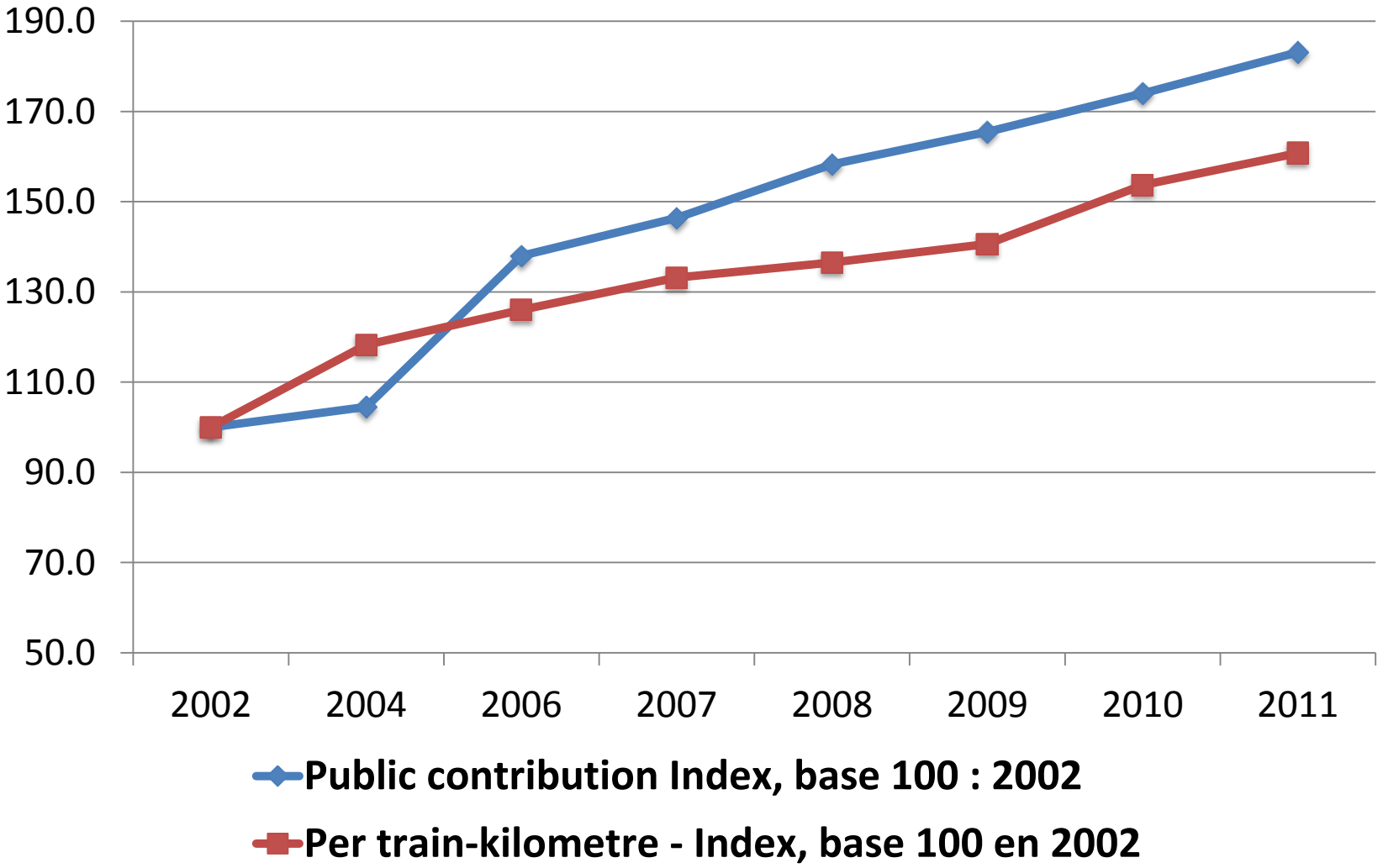

Germany
250
200
150
100
50
0
1996
2008
2013
Pass.km
Ton.km
Unit.km
Employees
Productivity


Switzlerland
250
200
150
100
50
0
1996
2008
2013
Pass.km
Ton.km
Unit.km
Employees
Productivity

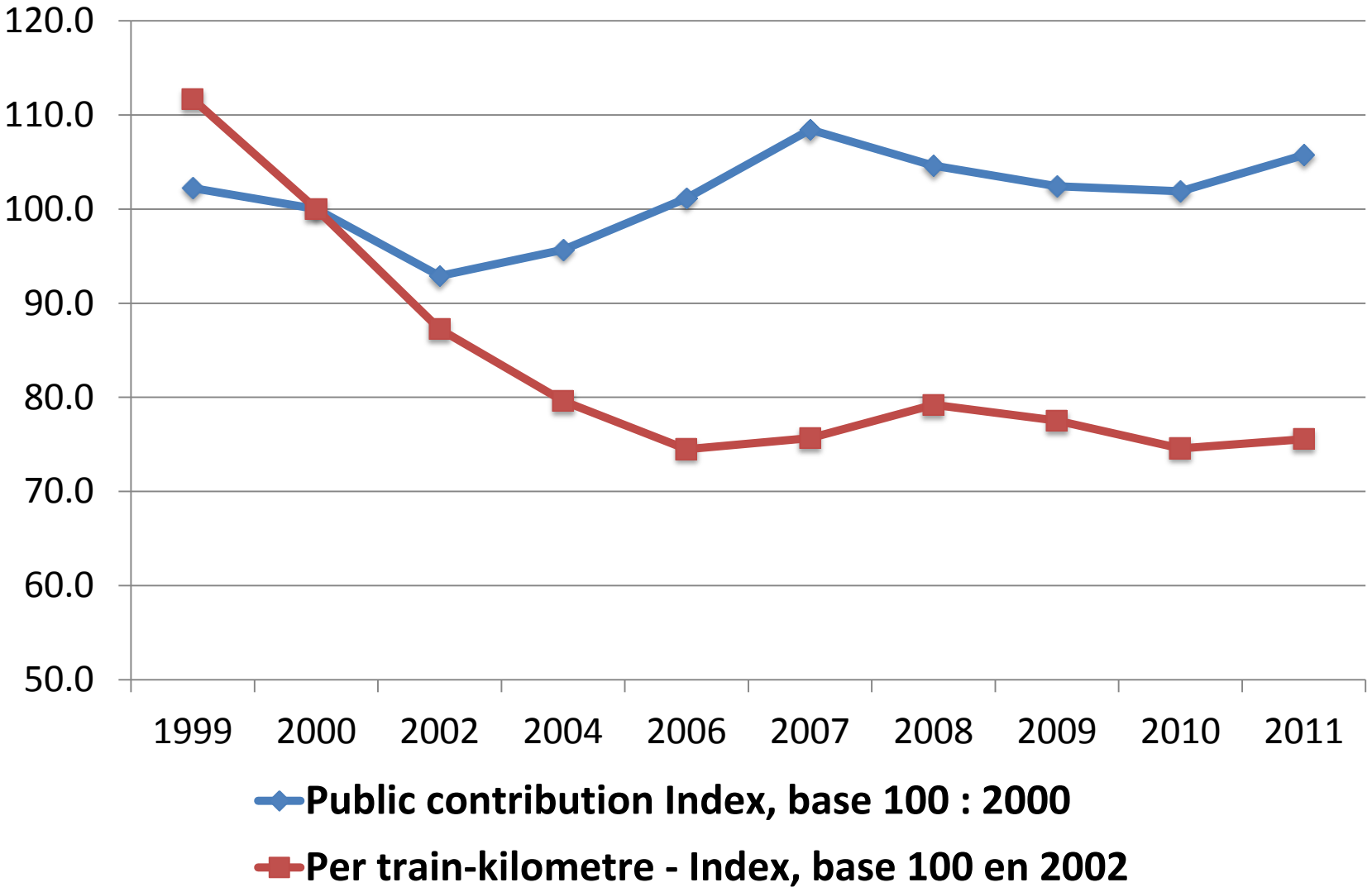
Operational efficiency



Public subsidies to TER (France)



Public subsidies in Switzerland



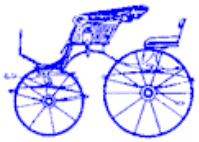
Public subsidies to HSR up to what extent?

Tours-Bordeaux
Public Subsidies
5 euros/passenger
during 50 years

Marseille-Nice
Public subsidies
30-35 euros/pass
during 50 years.

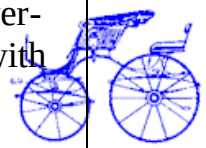
3) Network efficiency

- The efficiency of basic operations .



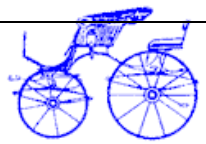
Summary annual performance chart for 2012 (last year of the first performance contract, 2008-2012)

Strategic objective 1: Adapting to market liberalisation and increasing business revenue	
6 sub-objectives: Mainly focused on customer satisfaction	4 sub-objectives achieved, 2 partially achieved: 1) the quality of freight paths has not improved as fast as expected; 2) costs are better reflected in charges.
Strategic objective 2: Modernising infrastructure and improving network performance	
13 sub-objectives: Maintenance, maintenance management, safety	7 sub-objectives achieved, 5 partially achieved: mainly concerning the elimination of level crossings (only half the targeted number), the standard of programming and ensuring that renewal investment is effective. One failure: the multiannual view of renewals.
Strategic objective 3: Breaking even and establishing sustainable financing	
6 sub-objectives: Improving the coverage of cost by revenue	2 sub-objectives achieved, One partially achieved: management control adapted to the strategic segmentation of the network; 3 sub-objectives not achieved because of the freezing of €341m of the operating subsidy: costs not fully covered by revenue (charges or balancing subsidy); accounting targets consequently missed.
Strategic objective 4: Dynamic steering and responsible governance	
8 sub-objectives: Improving governance design and control	7 sub-objectives achieved, One partially achieved, concerning the slower-than-expected establishment of the liaison with regional authorities (regional transport organising bodies).



Strategic objective 1	Examples of indicators
Adapting to market liberalisation and increasing business revenue	- Rate of satisfied customers. - Rate of acceptance of the pricing. - Number of paths affected by the maintenance. - Rate of regularity in 5mn.

Strategic objective 2	Examples of indicators
Modernising infrastructure and improving network performance	- Track length renovated (with respect to the objective in 5 years). - Number of turnouts renovated (id.). - Number of level crossings removed (id.). - Cost of renewal of a km of track (id.). - % of the network in poor condition. - New centralized controls (with respect to the program). - PDCA for investments (Plan-Do-Check-Act). - % of realized investment (with respect to the program). - % of investment without cost overruns. - % of investment without exceeding deadlines.



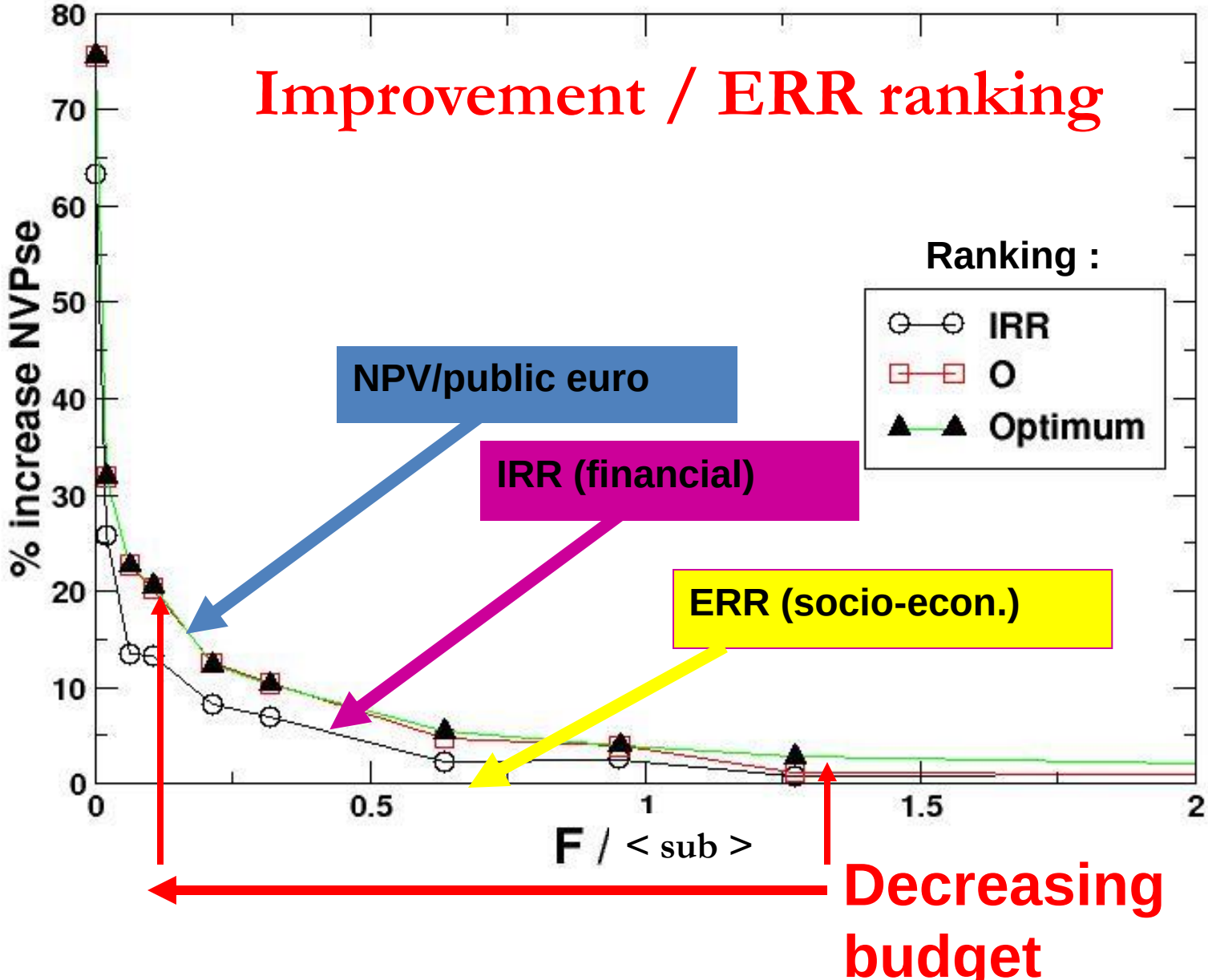
Strategic objective 3	Examples of indicators
Breaking even and establishing sustainable financing	- Revenue (with respect to the forecast of the business plan). - Government subsidies (with respect to its commitments). - Ratio revenue/full cost. - Accounting results with respect to the business plan. - Ex-post financial assessment of major projects (1 year, 5 years, 10 years)

Strategic objective 4	Examples of indicators
Dynamic steering and responsible governance	- The provisions are mainly related to the organization of the company and its management and is not amenable to performance indicators except ratings of specialized agencies.

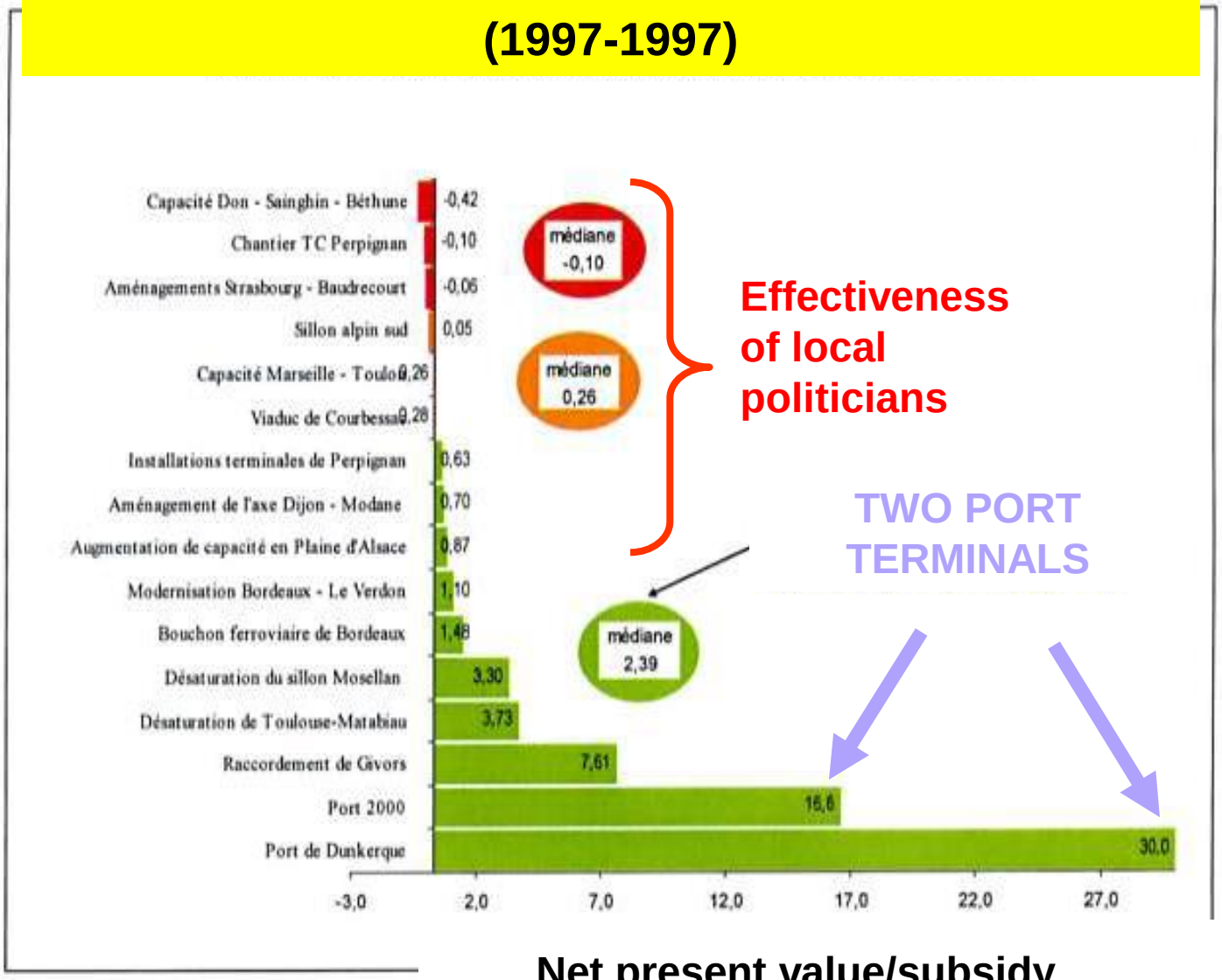
Network efficiency

- The marginal capital efficiency .

Optimal ranking under budget constraint



First investments of RFF to promote rail freight (1997-1997)



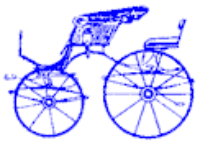
Net present value/subsidy

Source : RFF

If we consider the 40 candidate projects between 1997 and 2007:

If the ten most profitable projects were selected every billion subsidy would have generated 8 billion net present value.

If the ten less profitable projects were selected every billion subsidy would have generated 0.5 billion net present value.



A global programme efficiency indicator (value-for-money criterion)

For a given time series of subsidies the virtual optimal programme is ranked by the decreasing NPV/public subsidy ratio.

This virtual optimal programme generates the overall Net-Present-Value Wo.

The actual programme generated the overall Net-Present-Value W.

The overall efficiency indicator: W/Wo

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