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Financial crisis, infrastructural projects and regional development. The economic and financial fragility of the bridge over the Strait of Messina

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Infrastructures-growth relationship

- Controversial:
- Esfahani & Ramirez (2003) = “substantial contribution of ingrastructure services to GDP”
- Dèmurger (2000) = infrastructural differenciation explains different growth performances at a regional level in China 1985-98
- Wang (2001) = the causal link: private production → infrastructure development is stronger than the inverse
- Holtz-Eakin & Schwartz (1995) = raising the rate of infrastructure have a negligible impact on productivity growth in US (1971-86)
- Herranz-Loncan (2007) = local-scope infrastrucutres have positive impact on growth, nation-wide infrastrucutres influence is close to zero (Spain, 1985-1935)

Problems with transportation infrastructures

- Transportation infrastructures can help regional growth only if economic, investment, and political conditions are respected (Banister & Berechman, 2001)
- Economic evaluation of transportation infrastrucutres (especially big infrastructures) is seldom strongly based, and even CBA is often week or even absent (Damart & Roy, 2009), and the rethoric of the “technological sublime” prevails (Frick, 2008), overcoming the mundane reality of technical assessment

The bridge over the Strait of Messina

- …is a clear example of the danger of the rethoric of “technological sublime”
- It is lacking in economic evaluation instruments
- And meets at least 11 of the 21 “sources of error and bias in transportation project appraisal” identified by Mackie & Preston (1998).

The project

- 251 b.c. – Lucius Cecilius Metellus built a floating bridge of boats and barrels to carry 140 elephants captured to the Carthaginians in the Battle of Palermo
- 1971 – a Parliament law (n. 1158/71) allowed the institution of a private corporation (funded with public contributions) with the aim of projecting and building a bridge over the Strait of Messina
- 1981 – the company "Stretto di Messina SpA" is established
- 1991 – a first project is provided
- 2002 – the "preliminary" project is delivered and approved (2003) by the Italian Government (Berlusconi I)
- 2006 – a General Contractor is appointed to prepare a "defintive" project, but the Prodi cabinet stops it for two years
- 2011 – the definitive project is delivered
- 2012 – the Environmental Impact Assessment Commission asks 223 integrations to the project

The bridge diseconomy

- In the 2002 project the number of crossings over the bridge increases with transportation demand due to the growth of Italian “Mezzogiorno” GDP
- Elasticity of transport demand to GDP = 1
- The “base” demand is then increased because of the “generative” effects of the bridge.
- $$P = \pi (\alpha + \tau y) (1 + g)$$

  passengers = base traffic + “generative” effect
- PROBLEM = “systemic risk”:
- The project formulated two “growth scenarios” for Mezzogiorno’s GDP in the period 2000-12: High Growth = +3.8% (annual rate); Low Growth = + 1.8% (annual rate)
- Actual growth (2000-08 annual average) = 0.5%

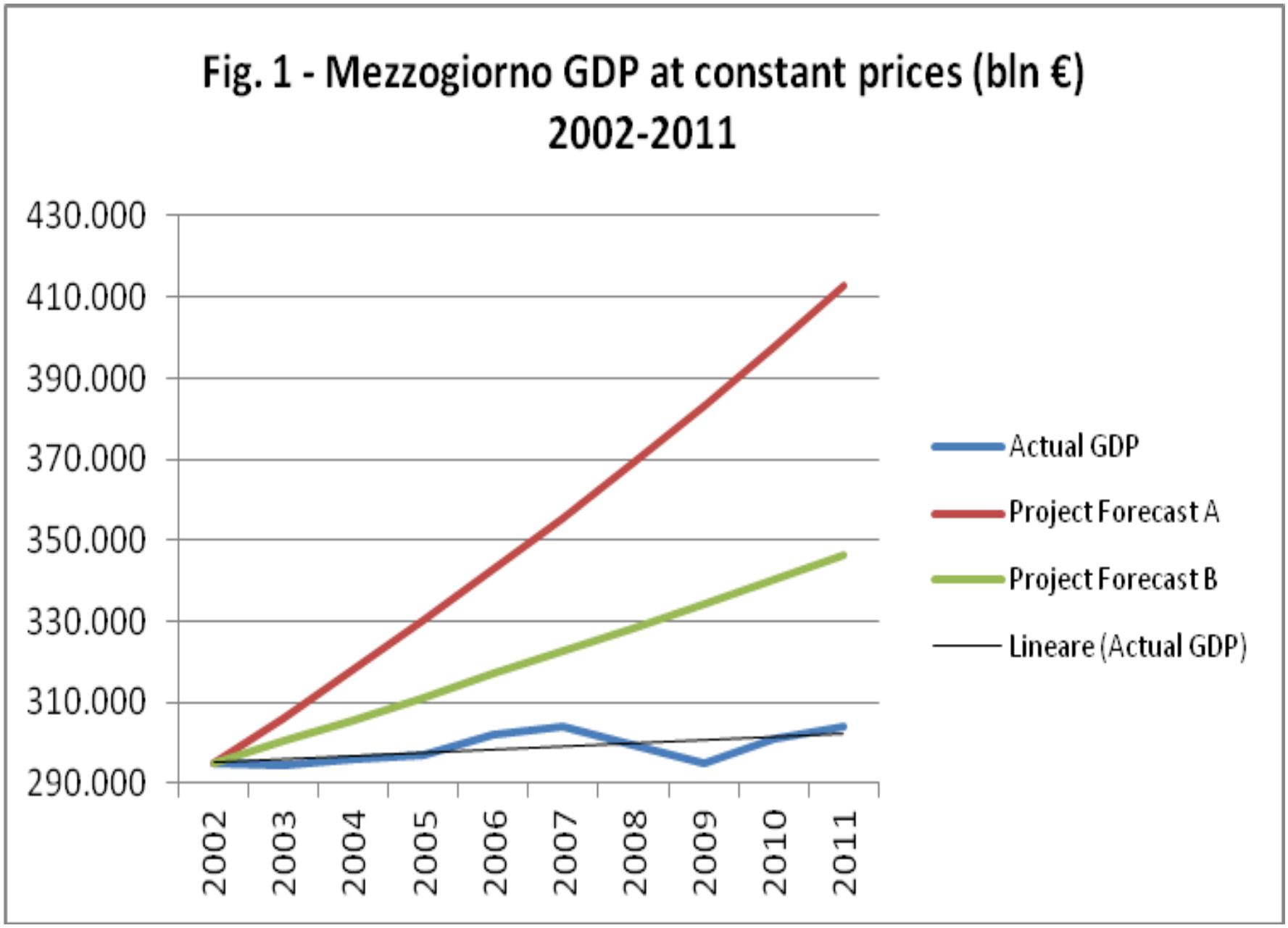


Fig. 1 - Mezzogiorno GDP at constant prices (bln €)
2002-2011
430.000
410.000
390.000
370.000
350.000
330.000
310.000
290.000
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Actual GDP
Project Forecast A
Project Forecast B
Lineare (Actual GDP)

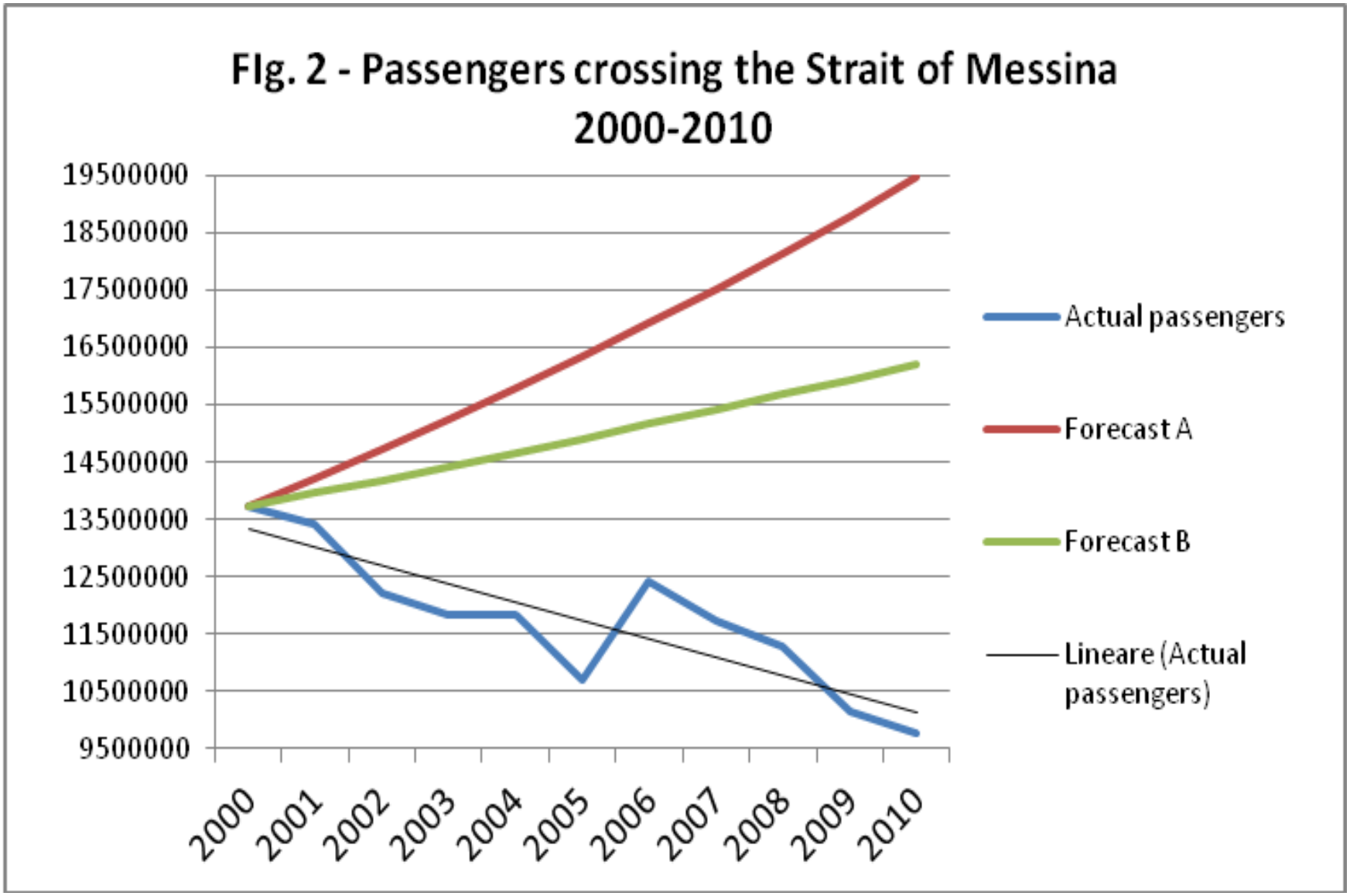


FIg. 2 - Passengers crossing the Strait of Messina
2000-2010
19500000
18500000
17500000
16500000
15500000
14500000
13500000
12500000
11500000
10500000
9500000
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Actual passengers
Forecast A
Forecast B
Lineare (Actual passengers)

The “new” model (2011 project)

- Based on Italy (not Mezzogiorno) growth rate
- Long run GDP estimates = + 1.8% (Italy); +1.3% (Sicily) (quite optimistic, but more realistic and obtained using affordable econometrics)
- New elasticity coefficient = 1.2
- Increased “generative” effect
- ➔ In spite of the more realistic long run Sicily growth rate, the total number of expected vehicles crossing the bridge is almost identical to the one of the preliminary project due to compensation between “restrictive” and “expansionary” forces

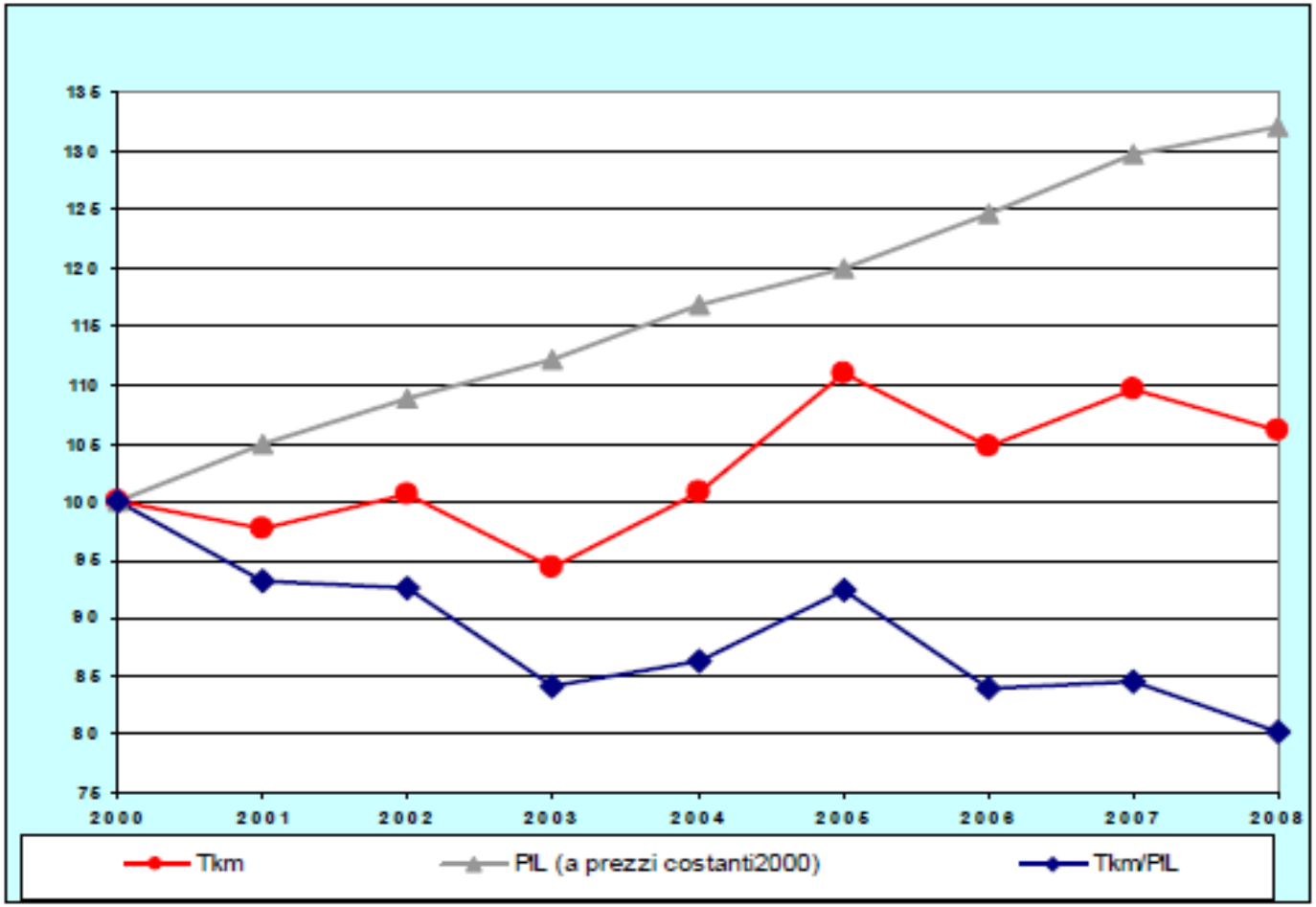
Critical aspects of the transportation model

- Extending the territorial “influence area” of the bridge is a crucial mistake, as a “transportation transition” is happening in Italy and the financial sustainability of the infrastructure only relies upon the evolution of vehicular traffic
- GDP cannot be used as the only dependent variable in a long-run model (> 30 years) (population, vehicular stock)
- Due to the bridge construction, a curious effect is introduced that redoubles the growth of GDP in Sicily and Calabria for 12 years: the construction period (6 years) and a 6-years of a curious dragging effect (with no theoretical foundation)
- The 20% increase of the elasticity coefficient is incompatible with actual trend of vehicular transportation

“Decoupling” in Italy

Source: Forte and Siviero, *Crescita economica e trasporto merci in Italia 2000-2008*

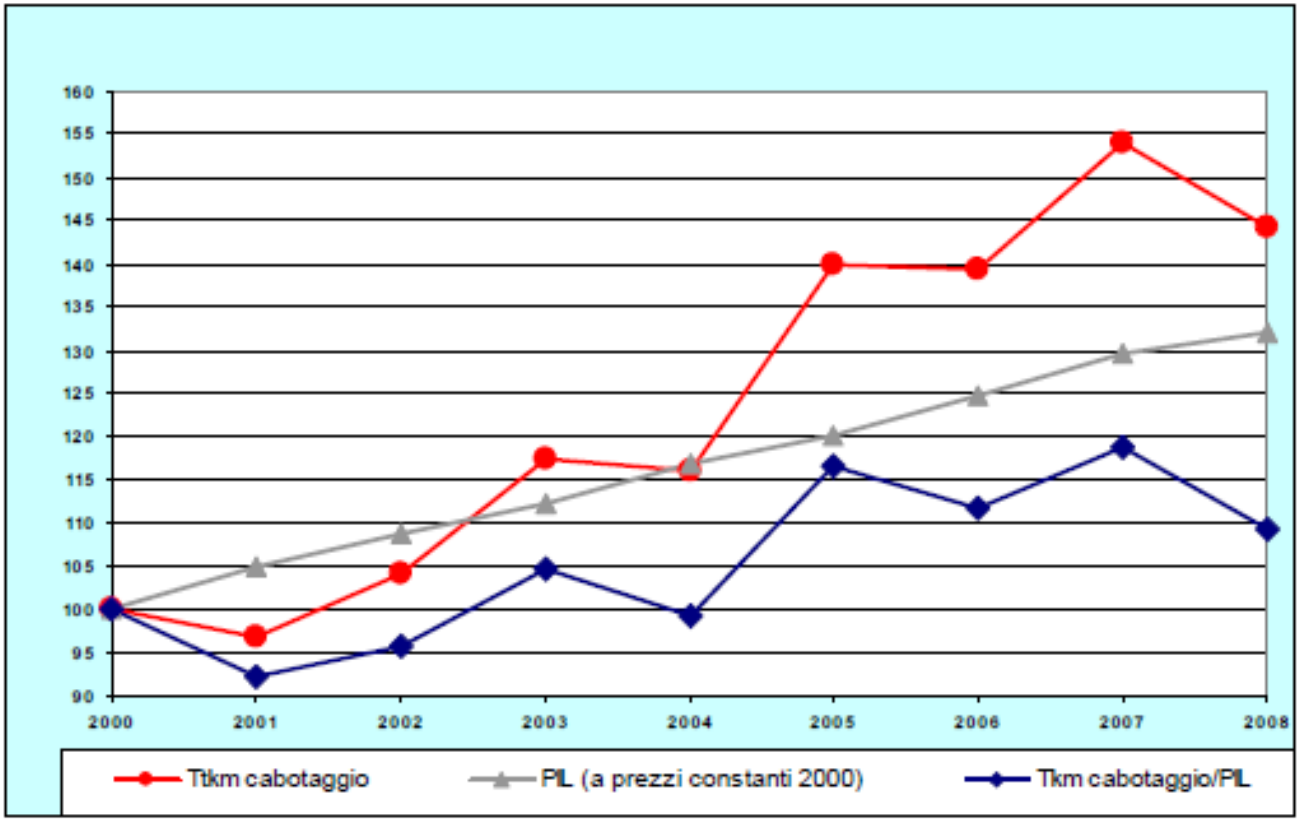
Fig. 2 – Indice del trasporto merci interno in relazione al PIL in Italia 2000-2008 (2000=100)



Fonte: elaborazione su dati Istat e CNIT

Cabotage trend

Fig.5 – Indice del trasporto merci di cabotaggio interno in relazione al PIL in Italia 2000-2008 (2000=100)



Decopuling and elasticity coefficients for different transportation modes

- Cars = strong decoupling: ε = - 0.03
- Lorries = weak decoupling: ε = + 0.66
- Ships = expansive decoupling: ε = + 1.36
- → incrising the elasticity (from 1 to 1.2) to estimate future use of the bridge is wrong
- The transportation transition: goods and commodities transportation shifts towards shipping, and average distance decreases for cars and lorries
- Short-distance trips mean that extending the "influence area" of the bridge is a mistake

The “desappeared” CBA

- CBA was presented in the 2003 project, providing positive NPV for the intermediate scenario.
- A 15% increase in the construction cost would have brought the project into the negative field.
- The 2011 project did not offer any CBA.
- However, in front of identical estimates for the bridge passengers, its cost increased of about 100%: from 4.4 to 8.5 b.ns €
- ➔ a negative NPV is expected, and the project should be rejected.

Demand Overestimation

1. High elasticity of traffic to GDP
2. Improper extension of the “influence area” of the bridge
3. The revision of the definitive project provided in 2012 shows many problems:

3.1 data for passengers crossing the Strait of Messina at 2010 are corrected, indicating 1.000.000 passengers less than the 2011 version, but no correction is provided in the final estimation

3.2 there is the implicit forecast of an impossible 88% increase of the “local” traffic, while the total expected increase of passengers from/to Sicily is just 15%

Technical and health shortcomes of the project

- Under the technical aspect, part of the 2011 project, according to the Government Commission for the Environmental Assessment of the project, “has not the characteristics to be considered a ‘definitive’ project”, and should be remade.
- The document relative to “public health” does not meet the criteria estabilished by WHO to obtain an Health Impact Assessment.
- The Financial and Economic Plan of the work is not yet ready, even though the estimated cost is of about 8.5 b.ns €, and the public contribution should cover 40% of total (3.4 b.ns).
- And with the “Valore di riscatto dell’opera”, at the conclusion of the first 30 years, the State may repay up to 50% of the investment cost.

The bridge in the age of austerity

- Last Berlusconi's right-wing Government invested a lot of its image into the project of the bridge, assessing a clear willingness to build the infrastructure, before its technical, financial, economic and social feasibility was actually evaluated.
- In the "age of austerity", in line with the decision not to support the city of Rome as a candidate for 2020 Olympic Games, the "technical Government" led by Mario Monti, in many occasions stated an alleged reluctance to finance the bridge, because of its committment to put under control public finance.
- Under this respect, austerity should imply a more accurate evaluation of infrastructural projects, and avoid money wastes and "white elephants".

A suprise in the stability law

- However, very recently some surprise happened.
- In the “Stability Law”, 300 m.n € hav been reserved to the bridge, in order to pay (undue) penalties
- And a further Government decision (Nov. 2° 2012), instead of providing a technical and economic assessment of the project, annulled all previous contracts and “froze” any decision about feasibility and financiability of the bridge for almost two years.
- Despite its “technical” character, the present Government tooke the hyper-political decision of “not deciding”.

The need for a new culture

- “The bridge to nowhere” (The Independent, Nov. 15, 2012) overcomes even technocracy and austerity.
- The reason is, obvioulsy, the strength of interest groups that manipulate political decisions.
- If we really want decisions to be taken in the light of public interest, we cannot reliy upon austerity.
- We need a new culture deeply rooted in the values of the prevalence of collective well-being over the particular.