HS2: time to proceed or time to review alternative strategies?

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High-speed railways and regional development
A French perspective

Pr. Yves Crozet
Contents

• 1) HSR in France: where does the success come from?
  - Key figures and maps
  - Geography and demography
  - Economy

• 2) HSR and regional development: wishful thinking and reality

3) Conclusion
High Speed Trains Traffics in Europe (Billion of pass.km/2012)
National Scheme of Transport Infrastructures (2009)

- 2500 km of new HSR lines within 2020 ???
- To be compared with the HSR network in 2009 = 1875km
200Km = 125 miles
400Km = 250 miles
253 gares au total
dont 53 à l'étranger

(1) à partir du 5 juillet 2009
Intensity of traffic

Travel Volume versus Network Length (1964 - 2011)

- Japan
- France
- Spain
- EU 27

Travel Volume (million passenger-km per year)

High-speed rail network in operation (route-km)
HSR: the key factor of success

• Geography: size of the cities, distance between cities (gravity model)
• Economy: Speed/GDP elasticity
• History and institutions (Monopoly of SNCF)
• Rail industry + rail operator
• Technology
• Politics....
Who are the winners of HSR?

• Civil engineering companies
• Rail manufacturers
• Rail operators (sometimes)
• Infrastructure managers (sometimes)
• Rail users (time gains)
• Some specific firms of sub-part of firms (managers, metropolitan functions...)
• Regions ?? Cities ??
Contents

• 1) HSR in France: where does the success come from?

• 2) HSR and regional development: wishful thinking and reality
  - No obvious regional impacts
  - City-specific impacts: winners and losers
  - Cost and benefits of HSR...

3) Conclusion
Give me a lever long enough and a fulcrum on which to place it and I shall move the world.

Archimedes
Number of Jobs

<table>
<thead>
<tr>
<th>Year</th>
<th>Alsace+Lorraine</th>
<th>Nord-Pas-de-Calais</th>
<th>Aquitaine</th>
<th>Midi-Pyrénées</th>
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Areas: Alsace+Lorraine, Nord-Pas-de-Calais, Aquitaine, Midi-Pyrénées
Évolution de l'emploi des fonctions métropolitaines par zones d'emploi entre 2006 et 2011 et contributions des fonctions, en région Nord-Pas-de-Calais

Sources : Insee, Recensements de la population 2006 et 2011 (exploitations complémentaires au lieu de travail)
Évolution de l'emploi par fonctions en région Nord-Pas-de-Calais de 1982 et 2006 puis de 2006 à 2011

Note : La taille des bulles correspond au poids de la fonction dans la région en 2011
Sources : Insee, Recensements de la population 1982 et 2011 (exploitations complémentaires au lieu de travail).
492 urban units

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<th>2000 - 10</th>
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<td>11</td>
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<td>20 000-200 000</td>
<td>24</td>
<td>24</td>
<td>31</td>
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<td>201</td>
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<td>&gt; 200 000</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>1</td>
<td>29</td>
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<td>Total</td>
<td>42</td>
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<td>360</td>
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Change in population (%, 2000-2006)
Main learnings

• High speed rail has been a success in France
• Demography, geography, economy (macro and micro) are more important than accessibility
• Accessibility is not the same thing than density and proximity. Agglomeration effects are mainly the result of density
• I do not contest the relationship between agglomeration and local productivity gains
• But I contest the transformation of
  1) accessibility gains due to speed into agglomeration effects
• 2) the gains of HSR users into regional GDP growth
Conclusion (future)

• The main risk now is for public funds
• For Tour-Bordeaux, 4 billion of public money for 30 million (maximum) of passengers per year = 4,4 euros/p/day/50 years...
• But for Marseille-Nice, 15 billion of public money (2%) for 20 million of passengers per year = 24 euros/passenger/day/50 years.... but
HSR... “whatever the cost”!

- Public authorities are risk lovers, they have a convex utility function.
- Due to wrong (biased?) expectations concerning the economic impacts of the infrastructure, they prefer receiving a random wealth to receiving its mean with certainty (Expected utility).
- It is a big incentive for consultants and private companies to develop strategic behaviors.
- Traffic forecast overestimation, building cost underestimation, high burden of financial charges..
References

• Crozet Y., 2016, *Regional Impacts of High Speed Rail and Cross-Chanel Rail System in France: Accessibility is not enough*, paper presented in Canterbury, 16 03 2016, 20 years under the channel and beyond: accessible regions, growing regions?
