

High-speed rail boosts corporate profits but centralises high-skill jobs in big cities

blogs.lse.ac.uk/businessreview/2017/05/19/high-speed-rail-boosts-corporate-profits-but-centralises-high-skill-jobs-in-big-cities/

5/19/2017



The improvements in communications made possible by high-speed rail in France has boosted profit margins for big firms with many sites around the country, who benefit from the infrastructure. Our research has found that HSR improves their profit margins by 0.6 to 0.8 percentage points.

The study finds that the easier and faster circulation of managers across the different sites of a business allowed by the HSR technology has a significant impact on their overall managerial organisation, and ultimately a statistically significant but small impact on their profit margins. The latter represents 2 per cent of the total operational profit margins of those businesses on average.

The research further investigates the precise nature of the mechanisms driving this productivity impact. It finds that the easier communication between headquarters and remote affiliates decreases the need to locate managerial functions at remote production plants, thus fostering their specialisation in purely production activities.

In contrast, managerial jobs tend to concentrate at headquarters, in particular those requiring high skills. This organisational rationalisation is also associated with wage adjustments because the need for skilled workers decreases at remote affiliates.

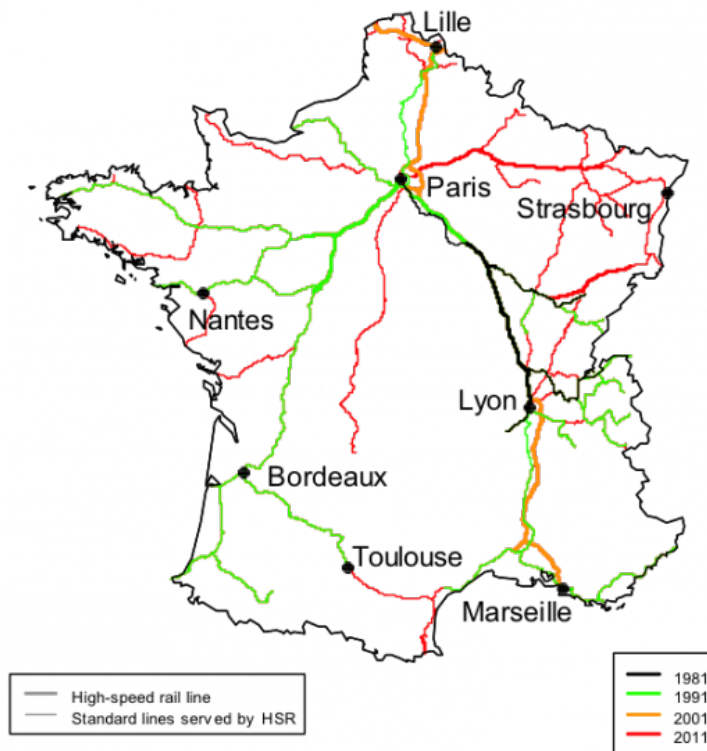
The magnitude of these adjustments differs across industries. Managerial reorganisations are most pronounced in the service industries, where the availability of the HSR infrastructure is estimated to induce the creation of one production job per affiliate (benefiting from the technology for the travel to their headquarters). The number is only 20 per cent of a job for affiliates operating in the retail, trade or manufacturing industries.

But in most industries these increases in production jobs are almost compensated by transfers of managerial jobs from affiliates to headquarters. This contributes to geographical job polarisation and the clustering of high-skill (managerial) jobs in the largest cities, in particular in the capital city (Paris) where a large fraction (35 per cent) of

headquarters are located. The same phenomenon would most likely occur if London, in the UK, became connected via high-speed rail to the northern part of the country.

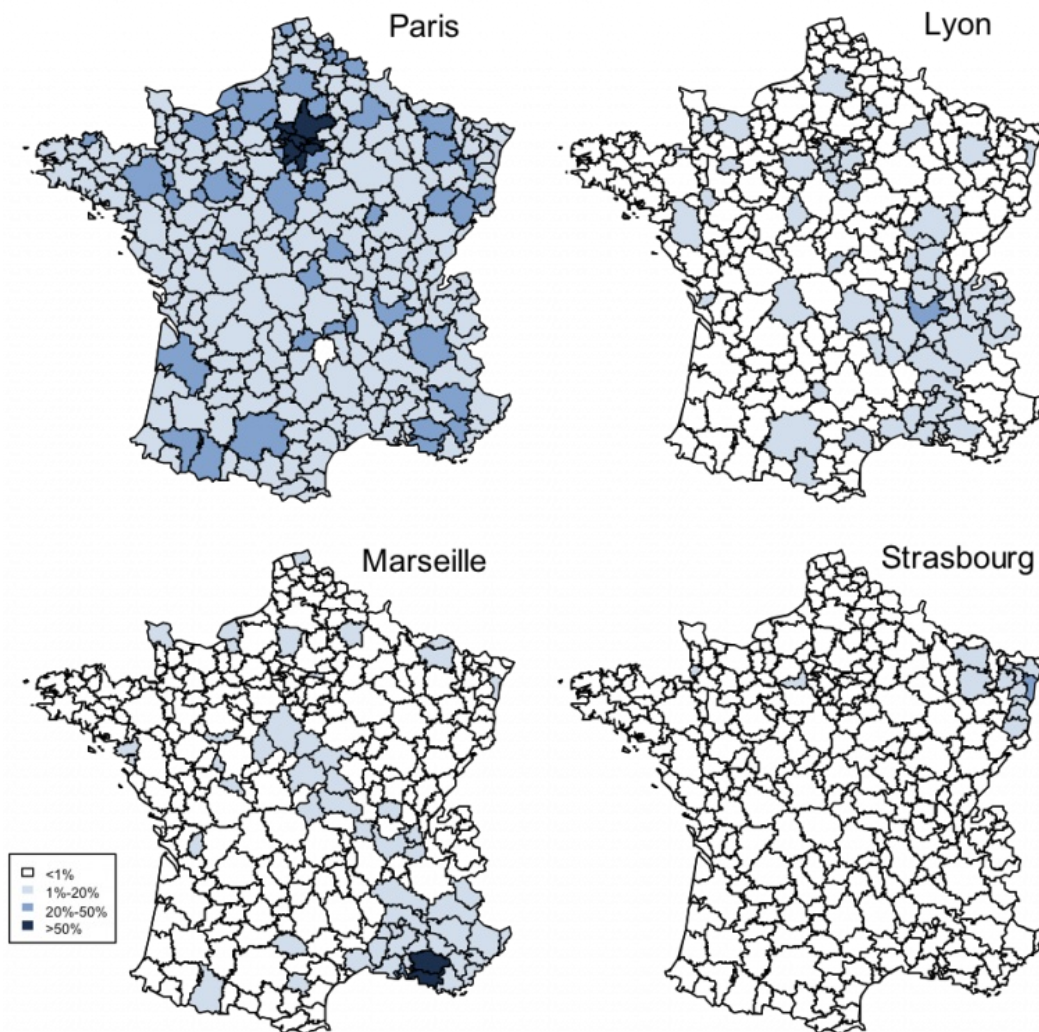
On a methodological level, the paper implements econometric techniques to address the facts that HSR might have fostered local growth in served areas (especially in industries related to tourism), and that areas served by HSR might be specific because they have been selected on specific criteria by the administration in charge.

Figure 1. Evolution of the French HSR network between 1981 and 2011 (click to enlarge)



Sources: Archives and open-data platform of the French national rail company; rail fan web sites. Authors' computations

Figure 2. Sphere of “corporate influence” of 4 of the largest French cities, in 2011 – Share of private employment in each zone that is under control of headquarters located in the respective cities, as a percentage of total private employment.



Sources: Matched DADS files and LIFI survey. Notes: the four maps describe the share of private employment in each commuting zone that is under control of HQs located, respectively, in Paris, Lyon, Marseille or Strasbourg.

More importantly, the article also provides estimates of the overall cost of geographical dispersion for multi-site businesses. In French corporate groups with multiple sites, geographical dispersion implies an average of two hours of travel time between remote affiliates and their headquarters. Abolishing these distances by a ‘perfect’ communication technology would increase production capacity by 4 per cent in the service and transport industries, and by around 2 per cent in the manufacturing, retail and trade industries.

These quantifications are to be interpreted as upper bounds ‘other else equal’ for the ‘productivity’ effect that can be expected from internal communication technologies, whatever their type (for example, ICT or transport).

They would be associated with relatively large aggregate employment shifts because large, multi-site business organisations are prevalent in the economy: in France, they account for 56 per cent of total employment in the for-profit sector (when taking account of groups headquartered from abroad), and the availability of more efficient communication technologies would most probably increase this share.

Last, the paper only focuses on the productivity gains that are to be expected from decreases in internal communication costs. But the HSR technology is likely also to ease communication with stakeholders that are external to the firms: their suppliers or customers, the investors, etc. These aspects are likely to generate significant

productivity and profitability gains as well.



Notes:

- This blog post is based on the authors' paper [Communication Costs and the Internal Organization of Multi-Plant Businesses: Evidence from the Impact of the French High-Speed Rail](#), presented at the Royal Economic Society's Annual Conference, at the University of Bristol in April 2017.
- The post gives the views of its authors, not the position of LSE Business Review or the London School of Economics.
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