High Speed Rail and Area Economic Development

International Experience with HSR-Supportive Strategies

Sustainable economic development is a primary objective for most HSR projects across the globe

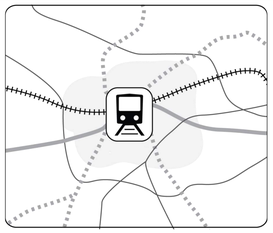
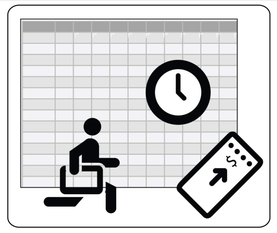
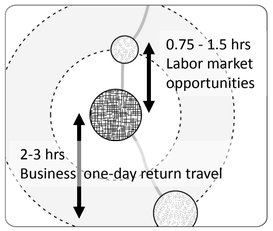
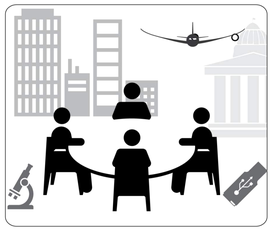
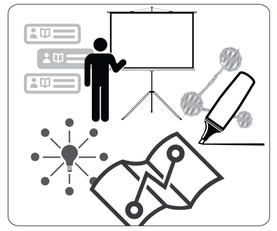
Economy
- Increase business productivity through **transportation efficiency gains**: travel time & cost reductions; **combat "limits to growth"** by freeing up capacity on other modes (roads, conventional rail)
- **Agglomeration economies:** broader labor and customer markets, enable business connections across networked cities, support growing technology clusters with regional, national, and global linkages

Equity
- Connect central & peripheral
- Benefit large cities *and* smaller intermediate areas

Sustainability

Environment
- Incentives for compact growth
- Preserve interstitial spaces
- Energy efficiency

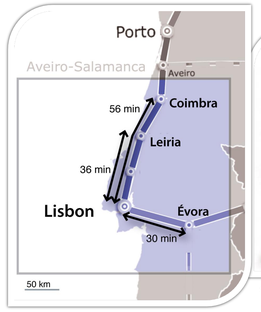
It's a powerful but **COMPLEX narrative, with many factors affecting development outcomes**

Network Connectivity			Level of service and price structure
Positioning in HSR network & travel time to major cities			Station placement, local accessibility, & local land market conditions
Economic base and pre-existing assets			Policies and planning

"**HSR is not a magic wand**. Since it may potentially redistribute growth spatially rather than generate it, the **level of a city's public capital investment and the quality of its urban planning** become very important…For station-area development to take off, **both the node and place qualities of a station should be considered**. The literature also touts the importance of selection of a **central-city location for the station** and the development of detailed and integrated local land use and transportation plans. Ensuring a **good level-of-service** and **connecting the station through different transportation modes** also enhances the possibility that private investment would be attracted to the station-area. In the end, **HSR's effect on economic and urban development can be characterized as analogous to a fertilizer's effect on crop growth: it is one ingredient that could stimulate economic growth, but other ingredients must also be present**."

Sideris et al. Tracks to Change or Mixed Signals? A Review of the Anglo-Saxon Literature on the Economic and Spatial Impacts of High-Speed Rail. Transport Reviews: A Transnational Transdisciplinary Journal (2013).

International case studies of HSR planning process in Portugal & the UK reveal that the uncertainty of long-term area economic development impacts can, in some cases, deter the implementation of HSR-supportive strategies



Source: RAVE, modified by Author

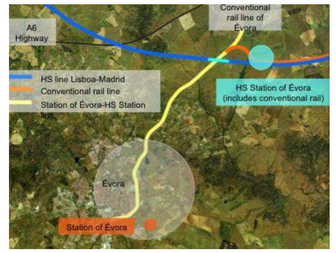
Source: DfT, modified by Author

Selection criteria: < 1 hour from a major city

HSR Planning: Multiple Geographic & Temporal Scales, Actors, Domains

External station locations can act as a constraint on future benefits and are the result of a decision-making process that struggles to adequately account for long-term growth impacts

E.g. Évora, Leiria



Source: REFER

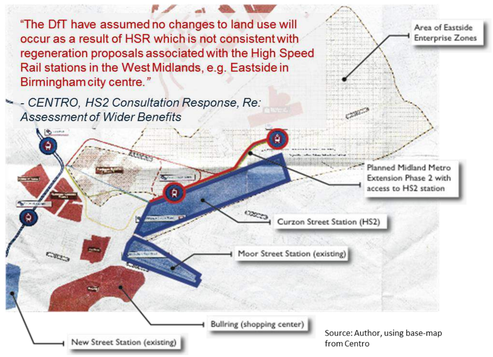
Station placement affects:
- Development prospects
- Incentives for local government involvement
- Policy tools available to influence HSR outcomes

Evaluation dominated by more **near-term** considerations:
- Reduce travel times between dominant O-D pairs
- Provide easy regional car access for **origin users**
- Avoid localized cost associated with urban construction

Issue: What degree of certainty is required in predictions of contingent development to justify altering HSR system designs?

Challenge: how can the evaluation process adequately account for potential but uncertain future development that might justify a more centralized station location?

Birmingham, UK



Source: Author, using base-map from Centro

Pre-existing metro plans & "enterprise zone"

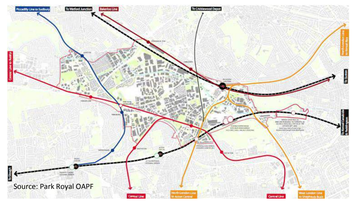
Co-dependence of HSR & local initiatives

Uncertainty of local initiatives as a barrier to their inclusion within the national evaluation process

London, UK

Old Oak Common:
- Convergence of transport infrastructure & industrial land
- TfL & the Mayor's office want a strategic transport interchange

Source: Dijkhuis and Siraut



Source: Park Royal OAPF

London Overground connections and decking above the rail yard could be justified **if major redevelopment occurs**

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Strategies for building a HSR implementation process that successfully incorporates HSR-supportive local /regional policies to maximize economic benefits

1) Improve management processes

Any HSR project is subject to: long timelines, high stakes (high cost, political), iterative design, and *challenge*

Formalized commitments	Informal coalition building
•Local representation in decision-making	•HSR changes the competitive landscape
•Contractual agreements that formally incorporate local plans	•Introduces incentives for cooperation
•Designating a % of HSR funds for complementary schemes	•Take the opportunity to reevaluate other regional land use/transportation strategies
•Inclusion of local accessibility requirements in HSR authorizing documents	•Build a broader coalition for change
	•Partnerships gain durability from stakeholders interested in broader vision

2) Improve understanding of wider economic benefits

At present our capacity to assess agglomeration economies is constrained to **aggregate methods that do not provide the type of insight into underlying causality that are needed to plan with intentionality**– particularly when wider economic benefits are central rather than incidental to the goals of high-speed rail projects.

Urbanization Economies
Business productivity benefits gained from the ability of firms to gain access to a larger labor market or larger supplier market in adjacent or surrounding areas.

Localization Economies
Business productivity benefits gained from the ability of firms to interaction with other similar or complementary firms nearby.

Spatial/Temporal Decay
Different types of agglomerative forces are likely to function at different spatial and temporal scales. What is the difference between proximity and transport-enabled connectivity?

Industry-Specific Needs
The need for access to consumers, collaborators, suppliers, resources, global and local networks etc. are likely to differ considerably between types of firms.

- Tradeoffs: Travel speeds / local connectivity / service frequency/ affordability?
- Benefits from congestion relief vs. benefits from HSR service itself?
- Land use patterns – efficiency gains from regional spatial sorting?
- Which sectors support/require multi-destination or only part-of-the-week commuting?
- What types of firms can successfully locate in secondary cities, thus benefiting from lower costs, while still benefiting from close ties to broader economic networks?
- Which sectors need to remain in the CBDs of large metro areas?

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