Los Angeles, San Francisco, San Diego, San Jose & Sacramento are ranked in the nation’s top 50 city-pairs for HSR investments (America 2050’s assessment).

California is the largest beneficiary, receiving a federal contribution of $2.34 billion.

The passage of Proposition 1A in 2008 authorized $9.95 billion in the state’s general obligation bonds.

The California HSR Authority expects that the HSR project will generate 600,000 construction-related jobs over the course of building and induce 450,000 permanent new jobs over the next 25 years (CAHSRA, 2010).

Small downstream economic benefits? (Levinson, 2010; Givoni, 2006)
Conventional wisdom holds impacts are:

- Spatially **redistributive** within a city-region
- Highly **localized**, focused on rail hubs/nodes & shaped by other accompanying factors.

(Banister & Berechman, 2000; Bertolini & Spit, 1998; Cervero & Landis, 1997)
Objectives

This research examined recent job and labor market trends in proposed California HSR station areas, focusing on:

1. The spatial distribution of economic activities across different types of cities that might be spurred by HSR in California;

2. Opportunities for leveraging transit-oriented developments & enhancing access to international airports and other large-scale activity centers that add further increments of agglomeration benefits; and

3. The application of value capture techniques to recoup some of the costs of the California HSR project from rail-induced agglomeration & accessibility benefits.
International Comparison

<26 Proposed California HSR Stations>

<17 Developed Tokaido Shinkansen Stations>

Legend

- Proposed HSR Station
- Developed Tokaido Shinkansen Station

Population Density, 2007 [per sq km]

- Green: 0 - 2,161
- Yellow: 2,162 - 5,350
- Orange: 5,351 - 10,057
- Red: 10,058 - 24,658
- Dark Red: 24,659 - 91,274

Distribution of Population Density

Number of Proposed or Developed Stations:

- Tokyo: 4 stations
- Nagoya: 2 stations
- Osaka: 3 stations
- Kyoto: 1 station

Distance: 220 Kilometers
## International Comparison

<table>
<thead>
<tr>
<th></th>
<th>California HSR</th>
<th>Tokaido Shinkansen</th>
<th>Tokaido/California</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Year</td>
<td>-</td>
<td>1964 (46 years)</td>
<td>-</td>
</tr>
<tr>
<td>Service Distance</td>
<td>695.2 (San Francisco and Los Angeles)</td>
<td>552.6 (Tokyo and Shin-Osaka)</td>
<td>0.80</td>
</tr>
<tr>
<td>Max. Speed kph</td>
<td>354</td>
<td>270</td>
<td>0.76</td>
</tr>
<tr>
<td>Travel Time</td>
<td>2 hrs 40 mins (Estimate in 2010)</td>
<td>2 hrs 20 mins (2010)</td>
<td>0.88</td>
</tr>
<tr>
<td>Passengers per day</td>
<td>91,000~194,000 (Phase I Estimate for 2030)</td>
<td>378,000 (FY2009)</td>
<td>1.95~4.15</td>
</tr>
<tr>
<td>Initial Costs per km US$M</td>
<td>5.63 (Estimate in 2008)</td>
<td>1.79 (1964)</td>
<td>0.32</td>
</tr>
</tbody>
</table>
Station Catchment Area

Units of Analysis:

In **5 km** of the 26 California HSR & 17 Tokaido Shinkansen Stations

1. The HSR project must economically encompass a larger radius around the proposed stations than the 500 meter radius (e.g., 1-3 miles; Catz and Christian, 2010).

2. The exact locations of many of the 26 HSR stations are still unknown, so the station catchment areas are likely to shift more than 500 meters.
Job & Worker Distributions: California

Change: 2002-08

Data Source: LEHD, 2002 and 2008
Job & Worker Distributions: Japan

2006/05

Change:
2000/01-2005/06
Industrial Typologies: California

Job Markets (NAICS code)

2002

8 Types

Legend

- Knowledge-based Business (KB)
- Public & Finance (PF)
- Transportation (TP)
- Public Service (PS)
- Information + Entertainment (IE)
- Leisure Service (LS)
- Agriculture (AG)
- Energy (EG)
Industrial Typologies: California

Job Markets (NAICS code)

2002

8 Types

Legend
Job Market Typology, 2002
- Knowledge-based Business (KB)
- Public & Finance (PF)
- Transportation (TP)
- Public Service (PS)
- Information + Entertainment (IE)
- Leisure Service (LS)
- Agriculture (AG)
- Energy (EG)

2008

8 Types

Legend
Job Market Typology, 2008
- Finance + Business Service (FB)
- Industrial + Business Service (IB)
- Public Service (PS)
- Agriculture (AG)
- Energy (EG)
- Information + Entertainment (IE)
- Leisure Service (LS)
- Education + Business Service (EB)
Industrial Typologies: California

Job Markets (NAICS code)

2002

2008

FB: Finance + Business Service

San Francisco

Los Angeles

Legend

Job Market Typology, 2002

- Knowledge-based Business (KB)
- Public & Finance (PF)
- Transportation (TP)
- Public Service (PS)
- Information + Entertainment (IE)
- Leisure Service (LS)
- Agriculture (AG)
- Energy (EG)

Legend

Job Market Typology, 2008

- Finance + Business Service (FB)
- Industrial + Business Service (IB)
- Public Service (PS)
- Agriculture (AG)
- Energy (EG)
- Information + Entertainment (IE)
- Leisure Service (LS)
- Education + Business Service (EB)
Industrial Typologies: California

Job Markets (NAICS code) 2002

Legend:
- Red: Knowledge-based Business (KB)
- Orange: Public & Finance (PF)
- Yellow: Transportation (TP)
- Blue: Information + Entertainment (IE)
- Green: Leisure Service (LS)
- Blue: Agriculture (AG)
- Purple: Energy (EG)

Legend:
- Blue: Information + Entertainment (IE)
- Green: Leisure Service (LS)
- Blue: Education + Business Service (EB)

Job Markets (NAICS code) 2008

Legend:
- Black: Finance + Business Service (FB)
- Gray: Industrial + Business Service (IB)
- Light Gray: Public Service (PS)
- Light Gray: Agriculture (AG)
- Light Gray: Energy (EG)
- Blue: Information + Entertainment (IE)
- Green: Leisure Service (LS)
- Black: Education + Business Service (EB)
Industrial Typologies: Japan

Job Markets, 2006

7 Types

- Finance + Business Service (FB)
- Information + Business Service (IB)
- Sub-regional Business (SB)
- Leisure Service (LS)
- Industrial (ID)
- Regional Business (RB)
- Agriculture (AG)
Key Point 1: Global Cities

The new HSR project is likely to induce knowledge- and service-based business agglomeration benefits, mostly to large, globally connected cities. e.g., San Francisco & Los Angeles in California / Tokyo, Shinagawa, Nagoya & Shin-Osaka in Japan
Key Point 1: Global Cities

Urban Renaissance Program, 2001-
- Public land sales (national rail yard)
- Density bonus
- Approval process reduction
- Local infrastructure provision
- Public open space requirement

Joint Development around Tokyo Station, 2001-2006

- Mixed Commercial
- Office
- Hotel
- Retail

Floor Use Share

Scale & Density
- Site Area = 10.59 [ha]
- GFA = 55.82 [ha]

Mixed Commercial

Office

Hotel

Retail
Key Point 1: Global Cities

Commercial Land Value Premiums in the Catchment Area

Source: Jin Murakami, Results of Hedonic Price Models

<table>
<thead>
<tr>
<th>Distance from Tokyo Station [m]</th>
<th>Land Value Change %</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>35%</td>
</tr>
<tr>
<td>1000</td>
<td>5%</td>
</tr>
<tr>
<td>1500</td>
<td>15%</td>
</tr>
<tr>
<td>2000</td>
<td>2%</td>
</tr>
<tr>
<td>2500</td>
<td>2%</td>
</tr>
</tbody>
</table>
Key Point 2: Edge Cities

The new HSR project can guide the clustering of time-sensitive manufacturing and business service activities in edge-city locations, accompanied by regional airport development plans and local transit feeder services.

e.g., Ontario Airport on the edge of Los Angeles / Shin-Yokohama on the edge of Tokyo
Key Point 3: Leisure Cities

The new HSR project might be able to promote regional tourism and local leisure services in relatively large cities, with high-quality urban design and unique social capital.

e.g., Anaheim in Southern California / Kyoto in Western Japan
Key Point 4: Other Intermediate Cities

The new HSR project is likely to yield regional accessibility and agglomeration benefits predominantly to major cities at the expense of small intermediate cities. e.g., Stockton, Modesto, Merced, Fresno & Bakersfield in California / Odawara, Shizuoka, Hamamatsu, Gifu-Hashima & Maibara in Japan

Stockton Station, CA  Gifu-Hashima Station, JAPAN
Conclusion

The California HSR project is likely to induce knowledge- and service-based business agglomeration benefits that accrue mostly to globally connected cities and shift some service activities to edge cities, airports, and leisure-entertain hubs at the expense of small, intermediate cities.

HSR’s redistribution effects need not be a “zero-sum” game. When leveraged through far-sighted, proactive public policies, increased agglomerations that take form through redistribution can have “generative” economic qualities, to the benefit of the state at large.
Public Policy Implications

Strengthen **strategic planning** at the regional and sub-state levels, matched by sustained, flexible funding programs

- Metropolitan **polycentrism**: linking airports, edge cities, major activity centers
- TOD as a sustainable **community strategy** (SB 375), HSR & feeder links
- Aggressively pursue **joint development/value capture opportunities**