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Plenary Session 4: The Economics of Sustainable Transit

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March 21, 2014 @ Berkeley CA

Airport Access Transit & Economic Benefits - Findings from Asia -



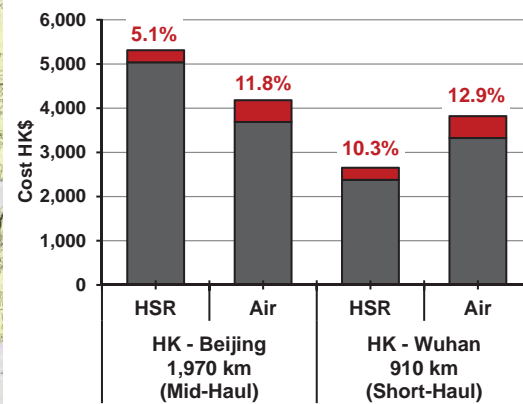
Mega Investment in Airport Access Lines across the World



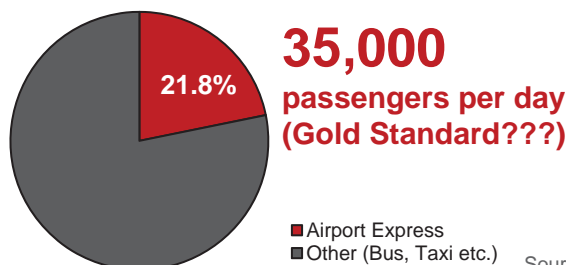
Intercity Travel Market & Intracity Last-Mile Cost



Intercity Travel Cost + Last-Mile Access Cost
*Generalized by the finance & business service sector's hourly GDP per worker in Hong Kong, 2012



Ground Transportation Access Market
Share of Airport Express Line, 2012



Insufficient User Benefit?



External Economic Benefit
(Justification for Mega Investment)

Sources: Jin Murakami with Weimin Lin (2013); MTR Corporation (2013)

Does Airport Access Transit Increase Economic Productivity?

90 Cities with the 100 Busiest Airports



Key Facts:

Rail Access: **57** of 90 airport cities
 Ave. Population: **8.9 million**
 Ave. Access Time: **35.3 minutes**
 Ave. Generalized Access Cost: **\$16.1**
 Ave. GMP per Capita: **\$41,095**

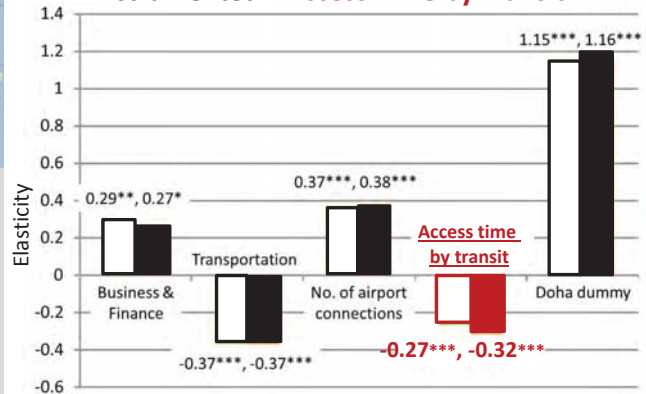
Determinants of GMP per Capita 2012 (Log-Log)

N = 90 World Busiest Airport Cities

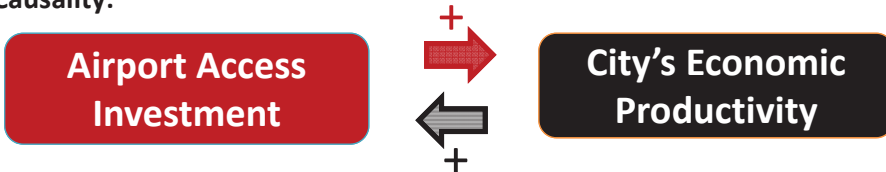
□ : OLS R squared = .44

■ : 2SLS R squared = .44

Instrumented: **"Access Time by Transit"**



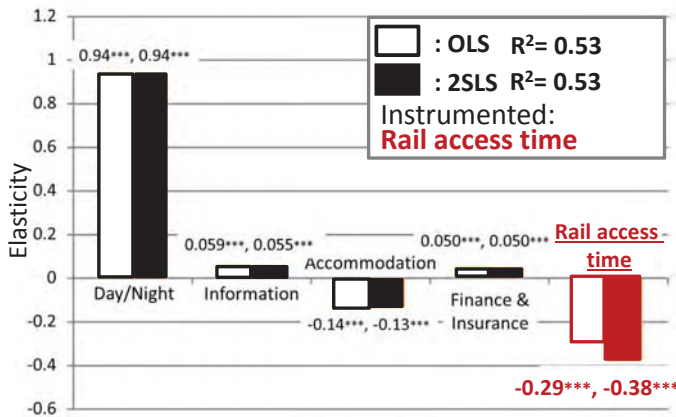
Two-Way Causality:



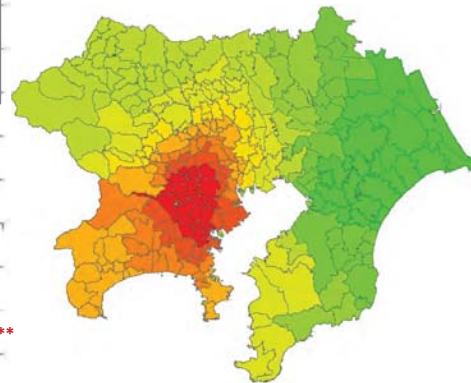
Source: Jin Murakami with Yurika Matsui & Hironori Kato (2014) The University of Tokyo

Airport Access & Worker Productivity within Tokyo

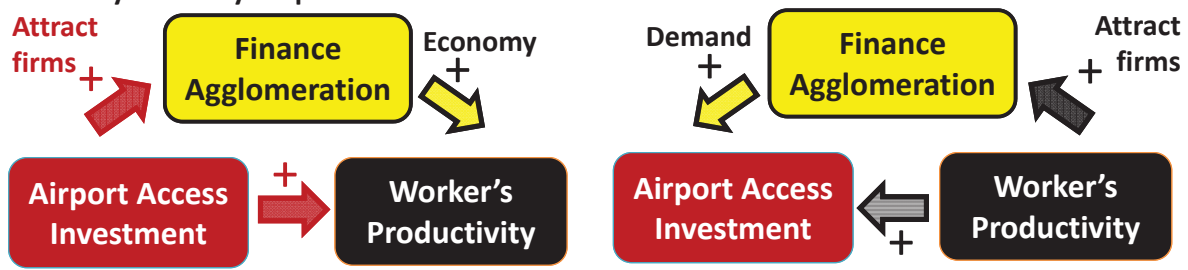
Determinants of Value Added per Worker, 267 municipalities within Tokyo, 2012



Geographically Weighted Regression (GWR): Coefficients of Rail Access Time



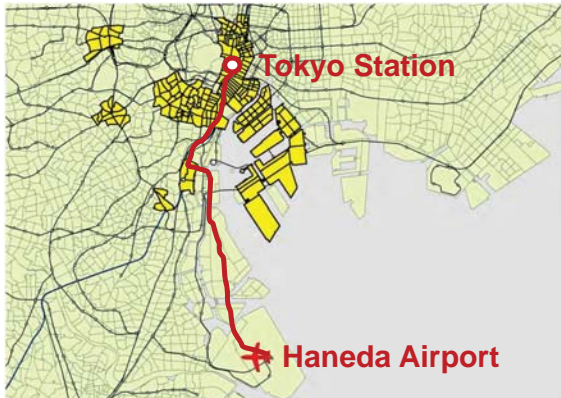
Two-Way Causality & Spatial Effect:



Source: Jin Murakami with Yurika Matsui & Hironori Kato (2014) The University of Tokyo

Scenario Test: Airport Access for Tokyo's Global Competitiveness?

New Investment Proposal (2013)



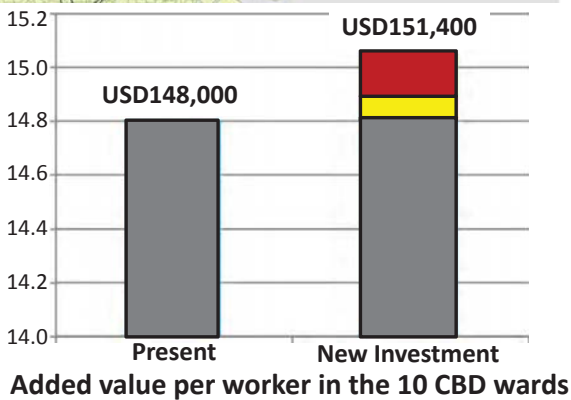
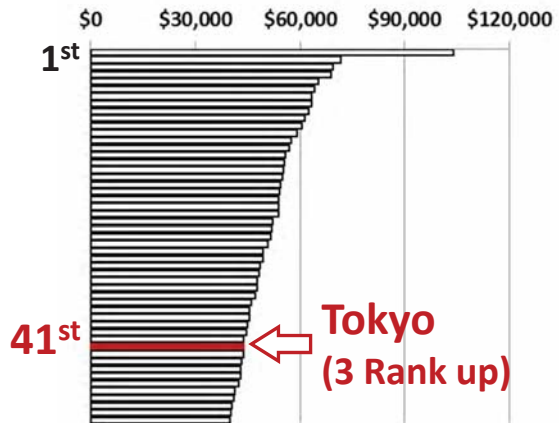
Scenario

✓ The (foreign) finance sector's share increases in the 10 CBD wards by 12.5%.

✓ Access travel time to Haneda Airport is reduced by 10 minutes.

✓ There is no locational redistribution of activities within the metropolitan area.

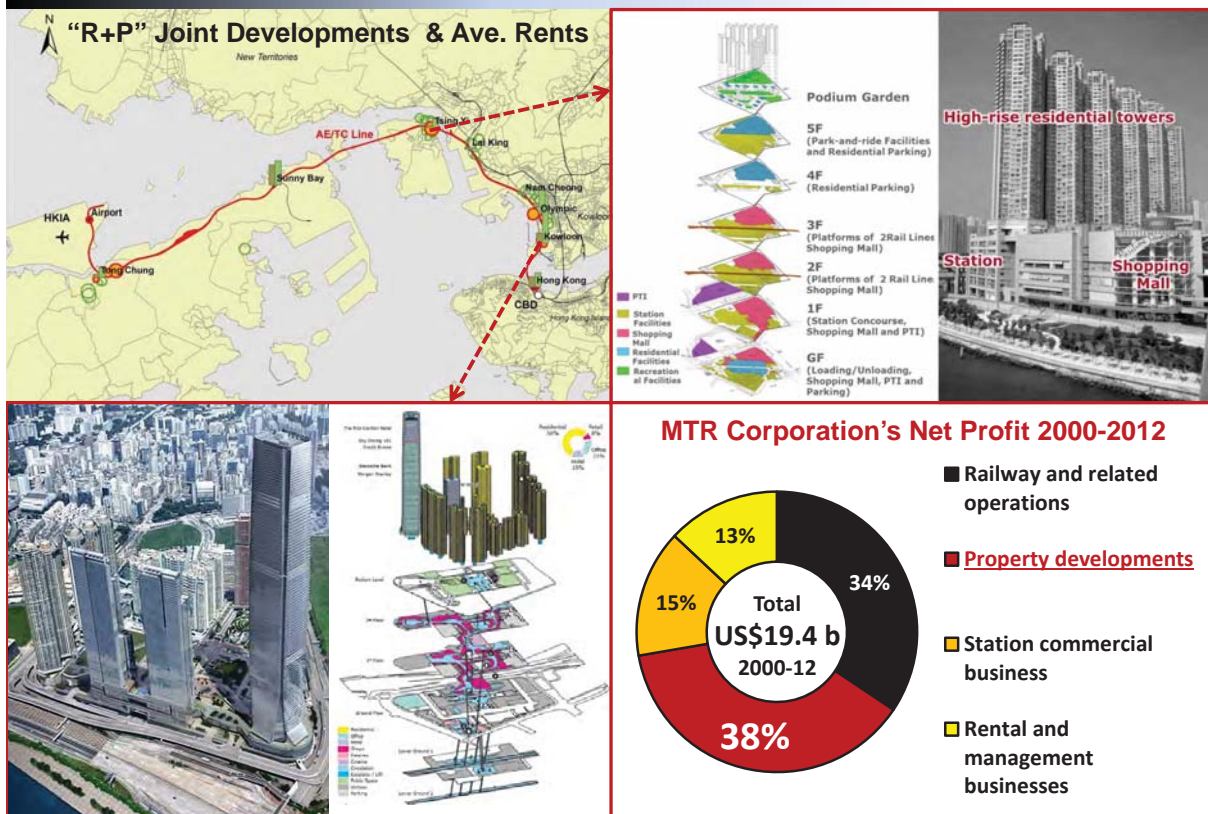
Impact on GMP per Capita Ranking among the 90 Airport Cities



Debatable & Missing Points

- Waiting, baggage handling, and delaying costs at airports are much greater than last-mile access/egress costs? -- *Airline vs. HSR*;
- With low ridership, reduction in traffic congestion, car parking costs, and emissions around airports could be sufficient to justify such large public spending in airport access transit? -- *environmental outcomes*;
- Non-business purpose travelers and local small business owners gain external economic benefits? -- *impact on tourism*;
- Airport access transit enhances international business competitiveness at the expense of local community livability in redistributive ways? -- *lack of place making and social equity*;
- How to finance competitive and sustainable airport cities or the "Aerotropolis" in practice? -- *proactive land use plans and specific value capture techniques along airport-access transit corridors*

Land Value Capture Practice along HK's Airport Express Line



Sources: Murakami & Cheung (2014); Cervero & Murakami (2009); AI, Stefan (2014); Suzuki et al. (2014)

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