Decarbonization Transport: Behavior and Mis-Behavior

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Today’s Approach to Transport, Energy and Environment: A Ponzi Scheme?
• Little Transport or Urban Planning
  - Few land use controls
  - Rapid building of flyovers
  - Little effort to organize urban transit
• Default is Inefficient Cars, Poor Transit
  - Fail to charge for externalities, subsidized fue
  - Reliance on car industry for development
  - Crowded cities waking up authorities
• Some Bright Spots
  - Curitiba, Singapore avoided the mess
  - Mexico, Bogota, other LA Cities turning around?
  - India, China coming to grips with cars? too late?
Some US Cities Struggling
Success Soon?

Even with a Carbon Free Fuel
We Still Have Transport Problems

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Per Capita Car Ownership and Per Capita GDP 1970 -2006

Precourt Energy Efficiency Center
Stanford University

• A research and analysis institute at Stanford
• Established in October 2006
• Initial funding: $30 million pledge by Jay Precourt
• Mission
  – To improve opportunities for and implementation of energy efficient technologies, systems, and practices, with an emphasis on economically attractive deployment
  – Focus on the demand side of energy markets
  – Energy efficiency: economically efficient reductions in energy use (or energy intensity)

“ASIF” Decomposition Of Transport: Behavior, not Technology the Key Issue

Lesson: Attack all Problems of Transport
Not Just Technological Efficiency and Fuels
Per Capita Carbon Emissions and Per Capita GDP from Passenger Transport

Driving and Per Capita GDP 1970 -2007

Motorized Travel 1970-2006/07

Evolution of Travel by Mode

Carbon Emissions from TRAVEL

Car Fuel Use and Per Capita GDP 1970 -2005/6: Is Growth Reversing after 50 years?
Economic Indicator:
CO2 Emissions for Cars/ Light Trucks and Fuel Prices, 1970-1995

Countries At Different Levels of Development
Even at Similar GDP, Great Differences

- Car Dominates Travel and People’s Lives
  - Europe, while lower total mobility and car share, still car dominated
  - Japan patterns today looks like Europe 1960 – result of density
  - Japan non-megacity looks like Europe 1980s-90s
- Role of Urban Transit
  - Europe denser, larger share live and work within 500 m of transit
  - Europe, Japanese cities legacy of density, wars
  - Transit helped by higher densities, higher fuel prices, lower car ownership
- Intercity Transport
  - Japan, Europe denser and well served by rail (roads are tolled)
  - US spread out except NE, so air dominates (and has been cheaper)
  - Will HSR break US mold while Ryanair changes Europe?

More on Differences in How We Travel
Is Europe or Japan that Different?

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