Green Urbanization in Asia

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Main Messages

• Asia’s urbanization is unprecedented & unique in several aspects
• ... leading to enormous challenges, including environmental degradation
• But urbanization can help!
• To ensure a win-win scenario, green urbanization policies shall exploit unique features of Asia’s urbanization and late comer’s advantage
Asia’s urbanization is unprecedented

Increase in Urban Population in Asia and the Pacific (millions)

Unique feature 1: very fast speed

Number of Years from about 10% to 50% of Urbanization Rate

- **Latin America and Caribbean**: 10% to 49% in 210 years
- **North America**: 10% to 51% in 105 years
- **Europe**: 10% to 51% in 150 years
- **Asia and the Pacific**: 11% to 51% in 95 years
- **Viet Nam**: 12% to 50% in 90 years
- **Indonesia**: 12% to 54% in 65 years
- **Lao PDR**: 10% to 52% in 60 years
- **Bhutan**: 10% to 51% in 55 years
- **China, People’s Rep. of**: 11% to 51% in 61 years

Unique feature 2: highest densities in the world...

Top 25 World's Cities Ranked by Density, 2007

Source: www.citymayors.com
Unique feature 3: many megacities

Megacities, 2010

Note: The circles indicate population sizes ranging from 10 million to 39 million. The circles do not reflect the physical extents of the cities and any overlap between them merely reflects their relative population sizes and not any official acceptance or endorsement of any geographical sovereignty.

Source: UN (2012).
Unique feature 4: low starting base

Unique feature 5: the largest cities are likely to grow bigger

… thus more and bigger megacities are emerging

Megacities, 2025

Note: The circles indicate population sizes ranging from 10 million (10 million) to 39 million (39 million). The circles do not reflect the physical extents of the cities and any overlap between them merely reflects their relative population sizes and not any official acceptance or endorsement of any geographical sovereignty.

Source: UN (2012).
Unprecedented urbanization poses enormous challenges already serious

- Growing inequalities
- Rising urban crimes
- Expansion of slums
- Above all, environmental degradation
  - Pollution
  - Vulnerability to flooding
67% of Asian (vs. 11% Non-Asian) cities fail to meet EU air quality standard

Cities with PM$_{10}$ above 100 ug/m$^3$ (2008-2009)

- **Asia and the Pacific (34/57)**
- **Non-Asia and the Pacific**

CO₂ emissions grow fast in Asia

Growth of Per Capita CO₂ Emissions over 2000-2008 (%)

Asia: 97%
Non-Asia: 18%

Environment may degrade further with growth

Asia’s Environmental Kuznets Curve

2010=$6,107  Peak=$40,971

CO$_2$ emissions may triple under the business-as-usual scenario

Projected CO2 emissions based on latest EKC

Vulnerability will rise with urbanization

Population at Risk (million)

Coastal Flooding

- East Asia: 154 M, 198 M
- South Asia: 63 M, 92 M

Inland Flooding

- East Asia: 141 M, 192 M
- South Asia: 33 M, 46 M

Source: Balk and Montgomery (2012).
Unique features of Asian urbanization make challenges more serious...

- Low level = a long way to go
- Fast speed = little time to adjust or learn
- More & bigger megacities = hard to manage
- More slums = higher vulnerability
But, can urban agglomeration help?

- Service sector pollutes less
- Manufacturers relocate (e.g., decline manu.)
- Efficient provision of infrastructure and services
- Innovation and higher labor productivity
- Nurture middle class and property owners
- And ...
Urbanization leads to lower fertility

Reduction in Projected Population due to Urbanization

- 2010-2020: 48.4 million
- 2020-2030: 42.6 million
- 2030-2040: 39.0 million
- 2040-2050: 39.3 million
... and more human capital

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The environmental impacts of urbanization

- The growth impact may be negative
- The composition effect is positive
- Technical effect is also positive
Environment-Urbanization relation has improved over time

Environment-Urbanization Curves

Source: ADB estimates.
Green urbanization can help shift the curves further

• Megacities with satellite cities:
  ➢ ToD, BRT, green/compact/eco- cities concepts

• Exploit late comer advantage:
  ➢ Leapfrog technology by import or R&D;
  ➢ Timely introduction of regulations: pollution/emission pricing, carbon tax or cap & trade, reduce subsidies, increasing block tariffs, ...
Conclusions

• It is counter-productive to contain urbanization, even for environmental concerns

• But, urbanization must be steered into a green path that exploits own unique features

• Asia can achieve green urbanization!
Thank You

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