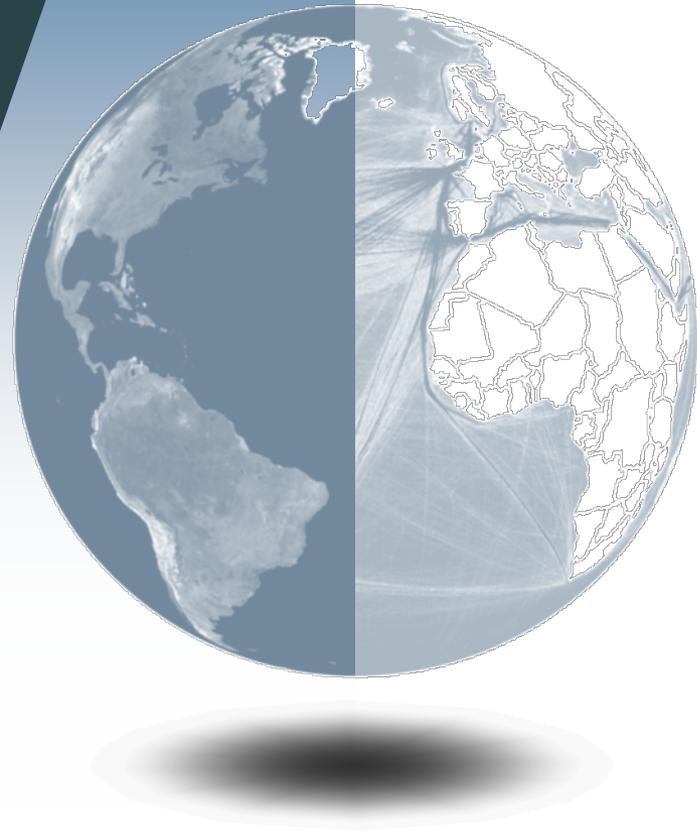




METROFREIGHT
Volvo Center of Excellence

FHWA Talking Freight Seminar, October 16 2013



The Geography of Urban Freight: A City Logistics Typology

Jean-Paul Rodrigue

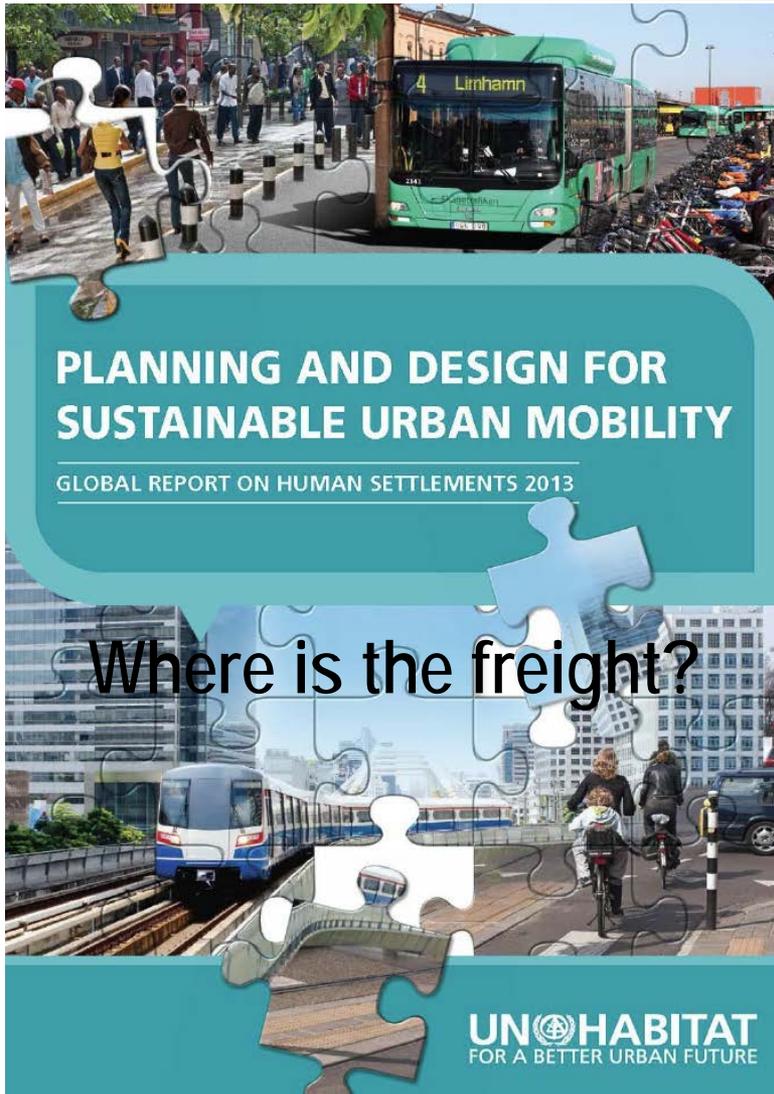
Professor, Dept. of Global Studies & Geography,
Hofstra University, New York, USA

Laetitia Dablanc

Director of Research, French Institute of Science and
Technology for Transport, Universite de Paris-Est,
France



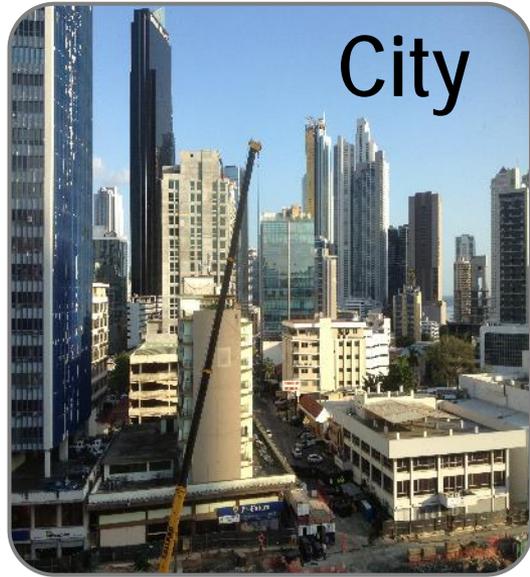
Planning and Design for Sustainable Urban Mobility — Global Report on Human Settlements 2013



- Basic readings:
 - [Chapter 4](#) on urban freight.
 - [City Logistics](#) section in the *Geography of Transport Systems*.
- Urban classification and sustainability measures are biased
 - No or little consideration to freight issues.



The Rationale for a City Logistics Typology: City and Supply Chain Specific



Different landscapes



Different supply chains

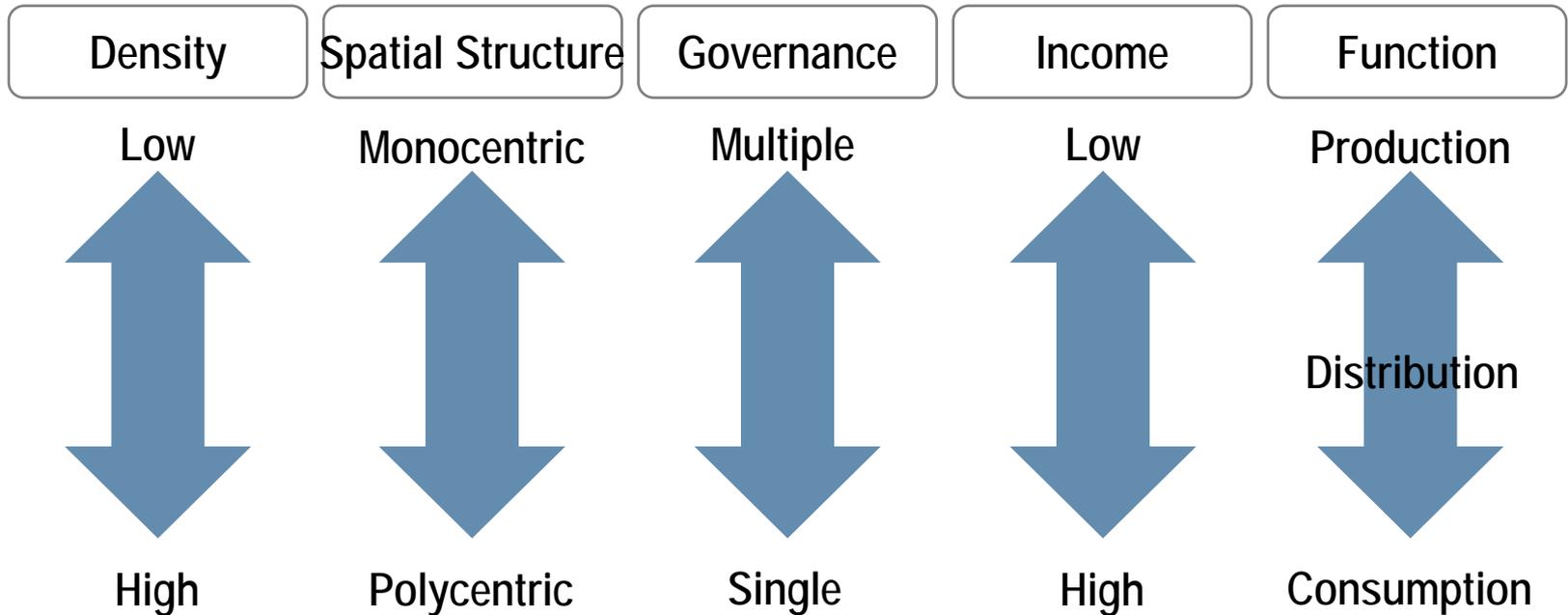
Typology

Commonality in operations, modes, vehicles, infrastructure and policies



Typological Criteria for City Logistics

URBAN CRITERIA



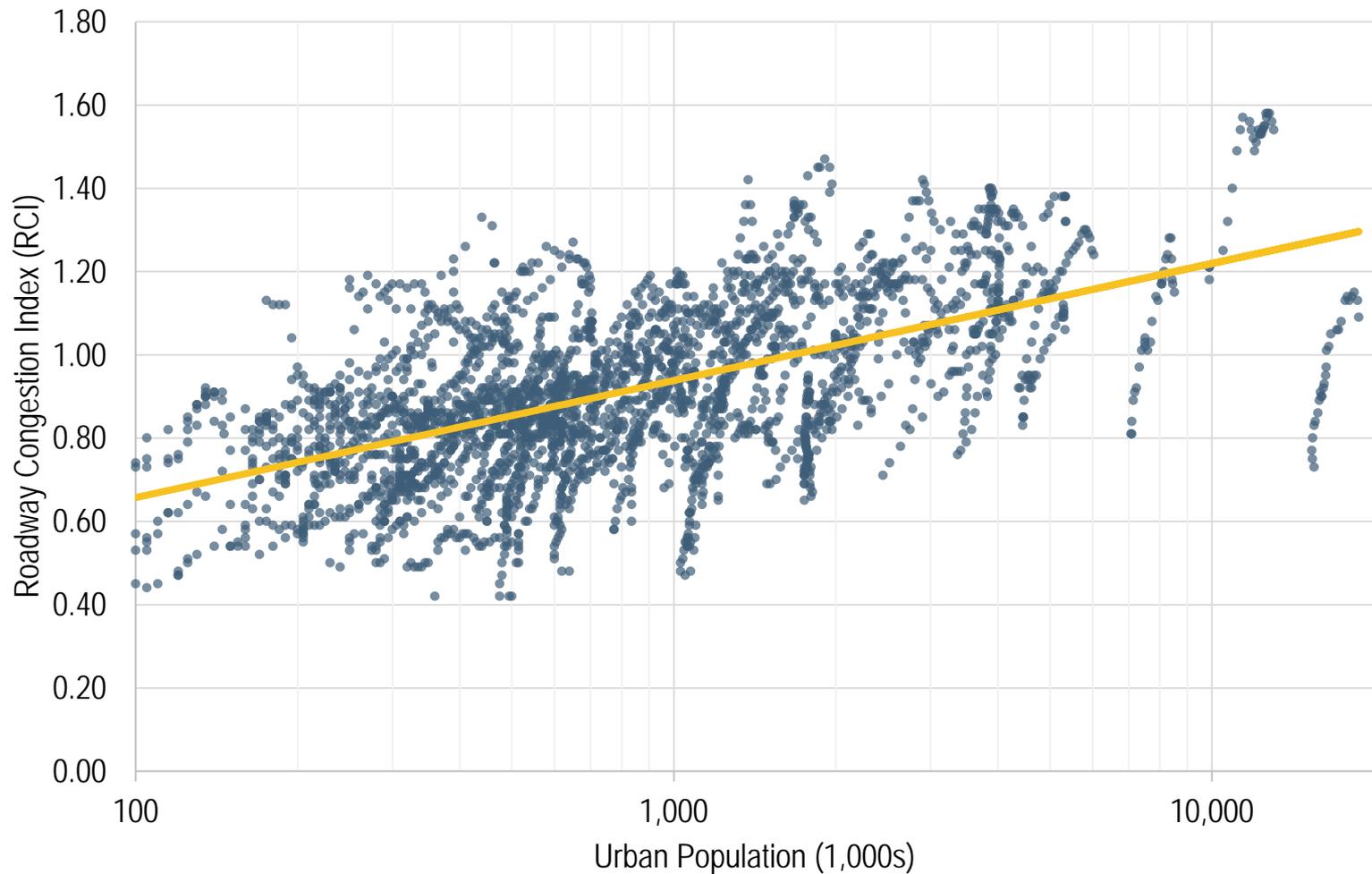
CITY LOGISTICS CRITERIA





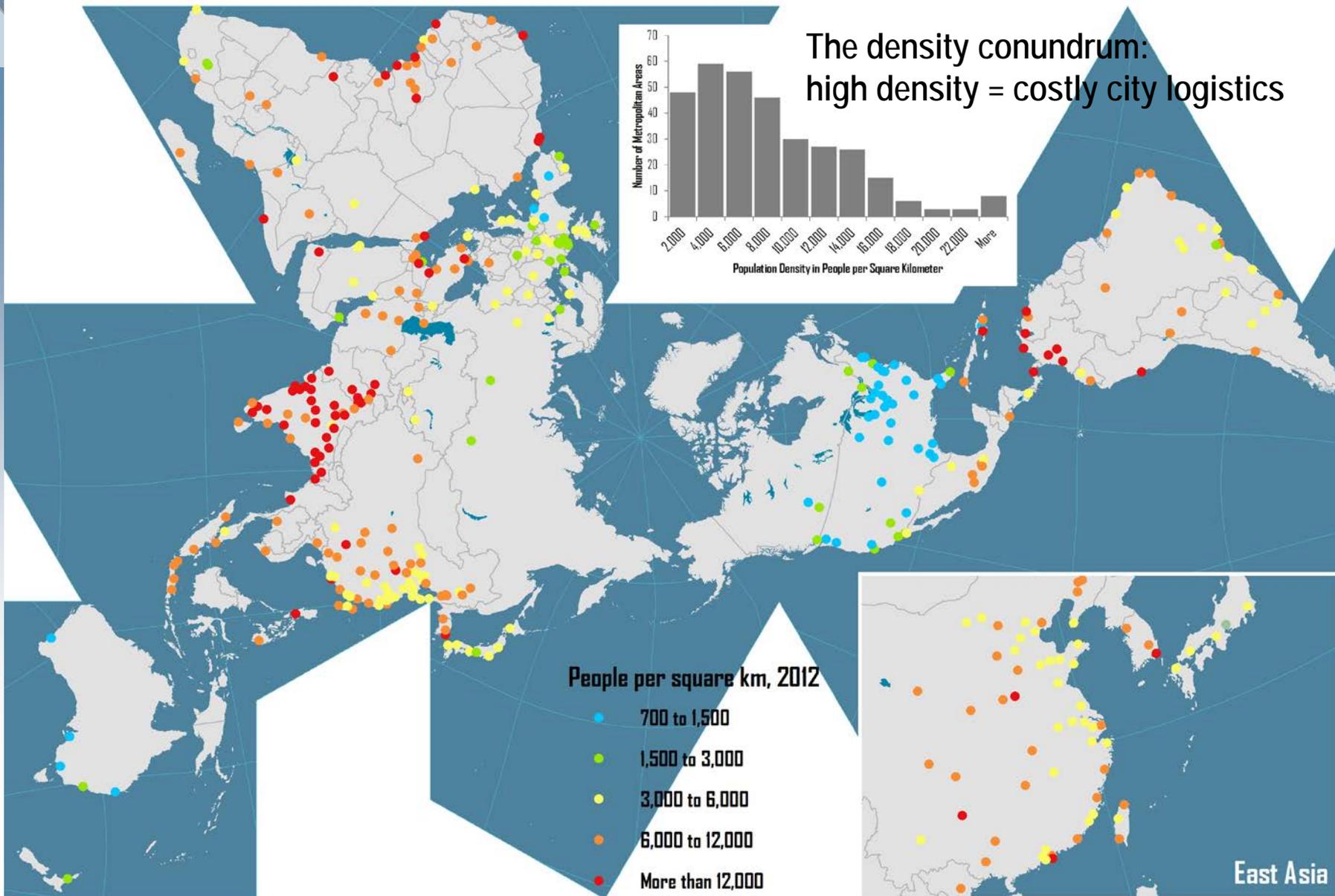
The One Million Population City Logistics Threshold

City Size and Roadway Congestion Index, United States, 1982-2009



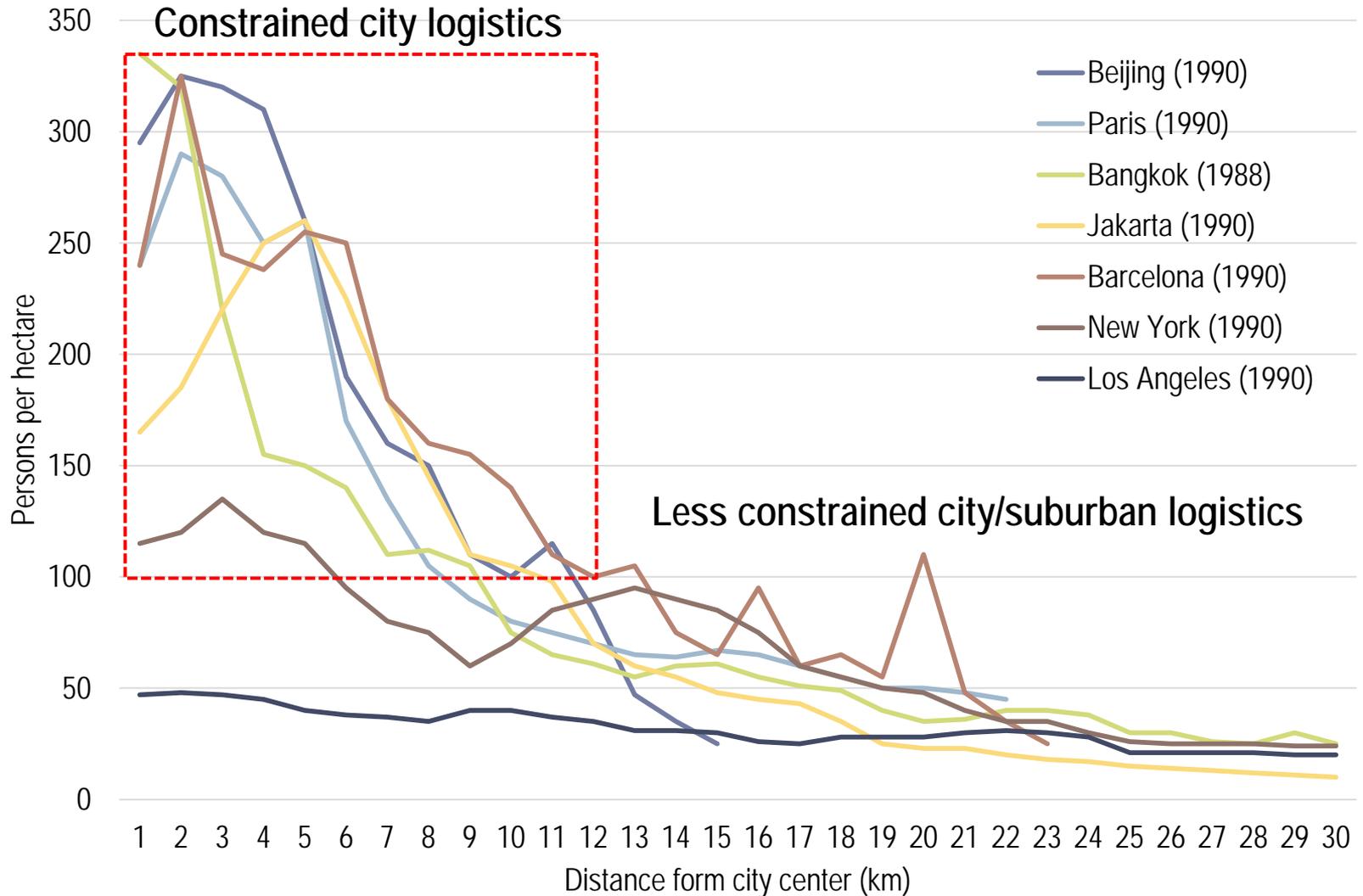


Population Density of the World's Largest Metropolitan Areas, 2012





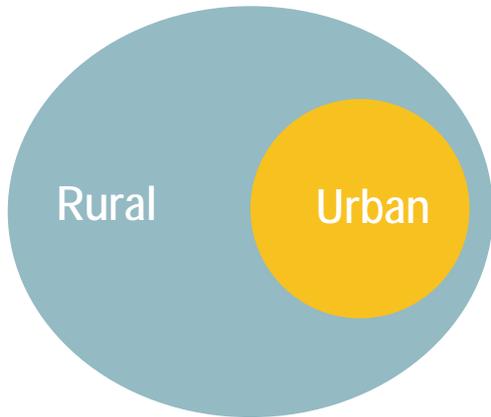
Population Density by Distance from City Center, Selected Cities



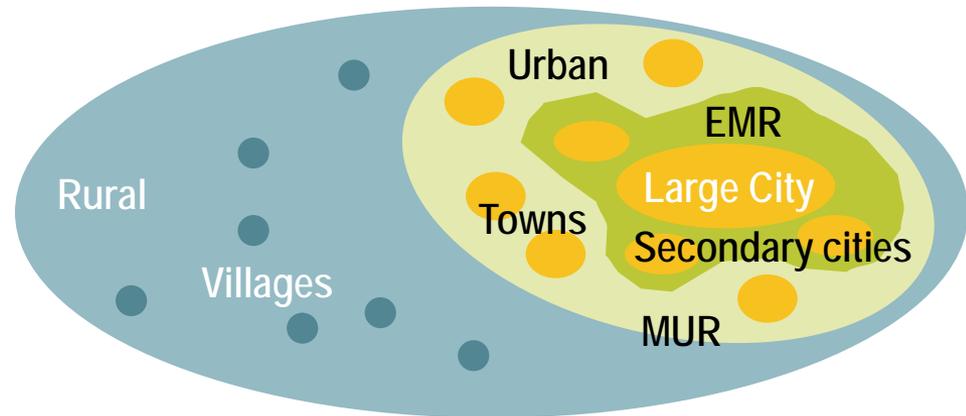


Perspectives about the Urban Spatial Structure: From Dichotomy to Continuum

Dichotomy



Continuum

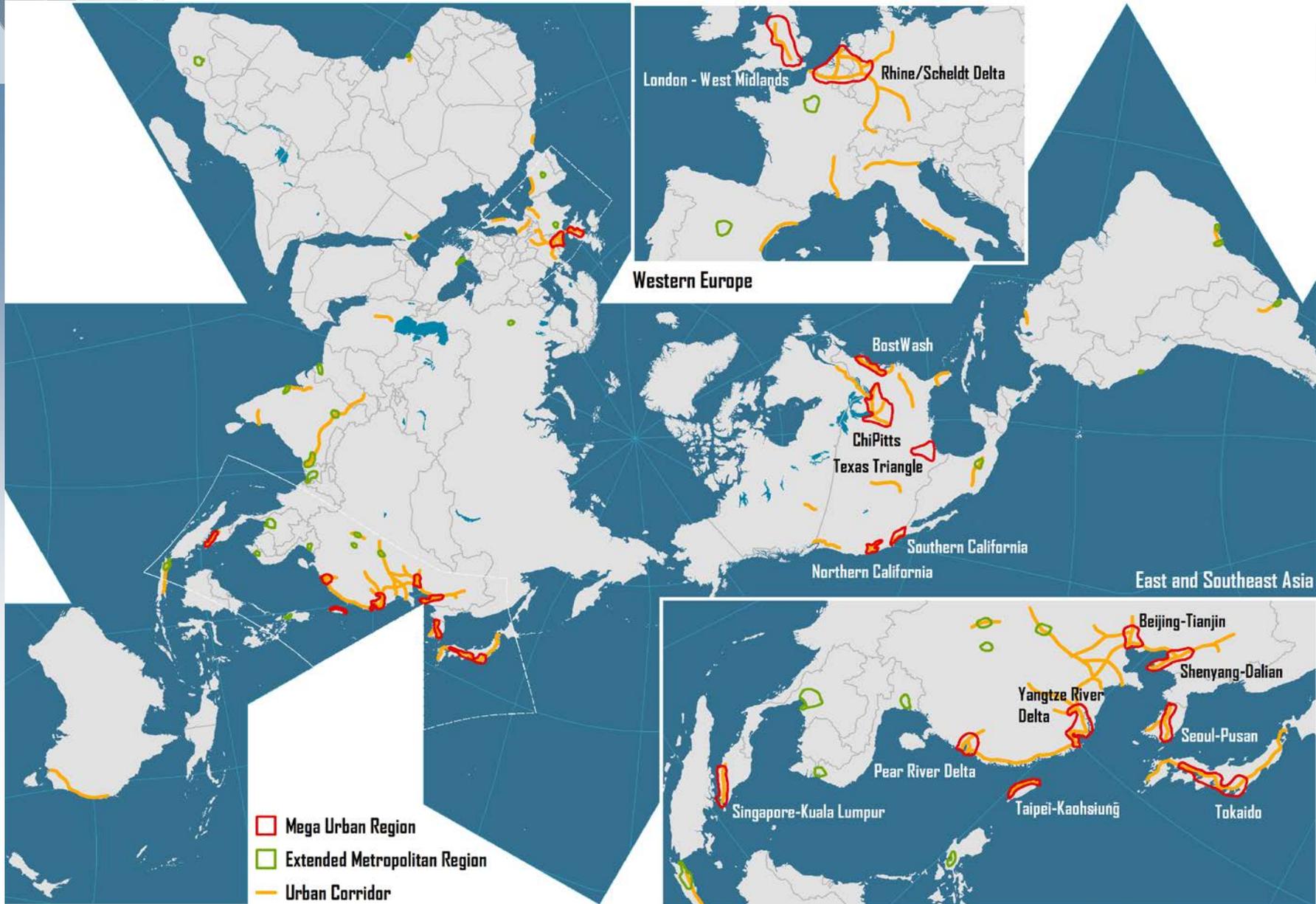


EMR: Extended Metropolitan Region MUR: Mega-Urban Region

Different landscapes for city logistics:
From the city to the city-region

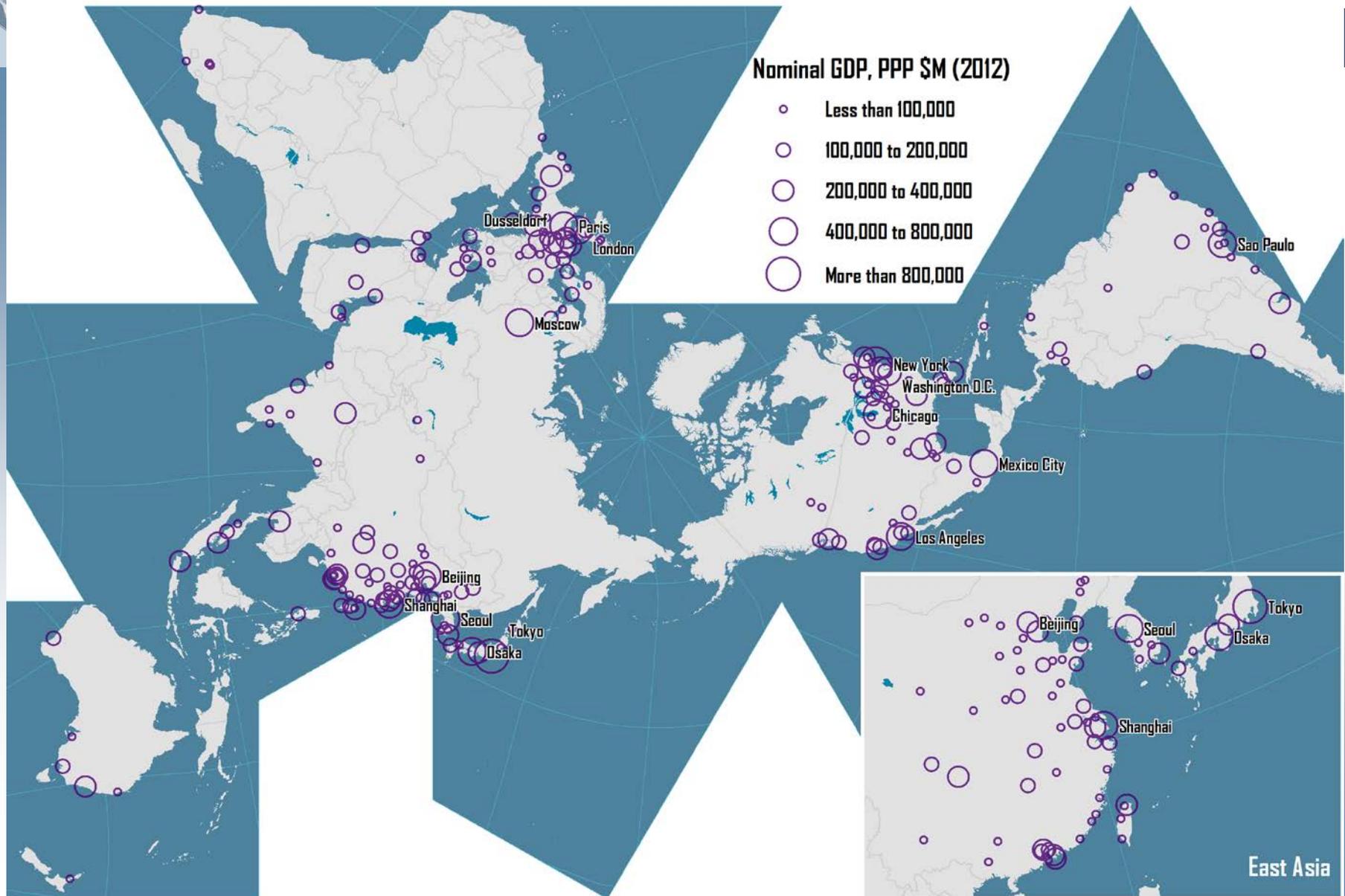


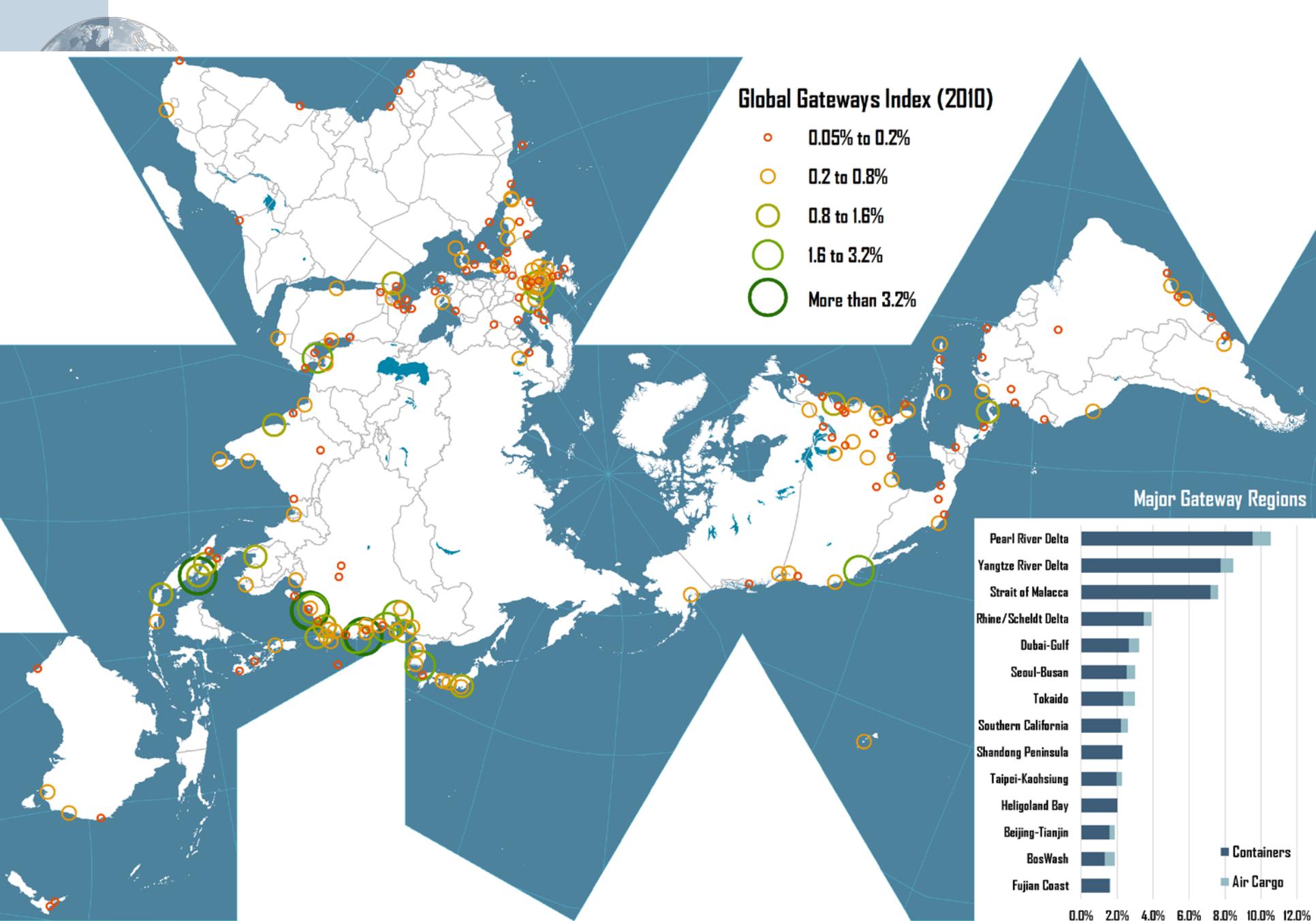
World's Largest Urban Regions





The Economic Output of the World's Major Metropolitan Areas, 2012

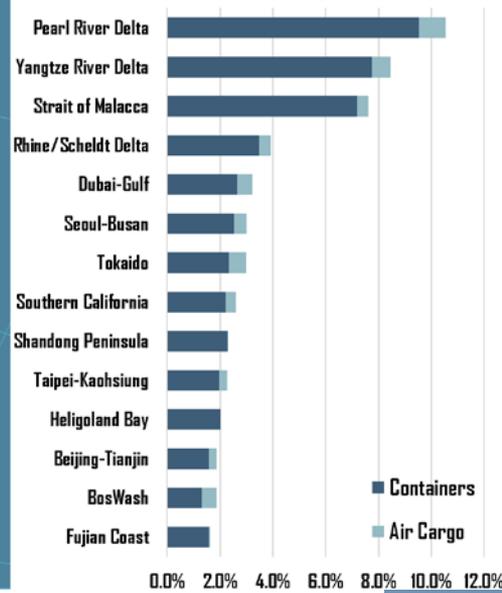




Global Gateways Index (2010)

- 0.05% to 0.2%
- 0.2 to 0.8%
- 0.8 to 1.6%
- 1.6 to 3.2%
- More than 3.2%

Major Gateway Regions

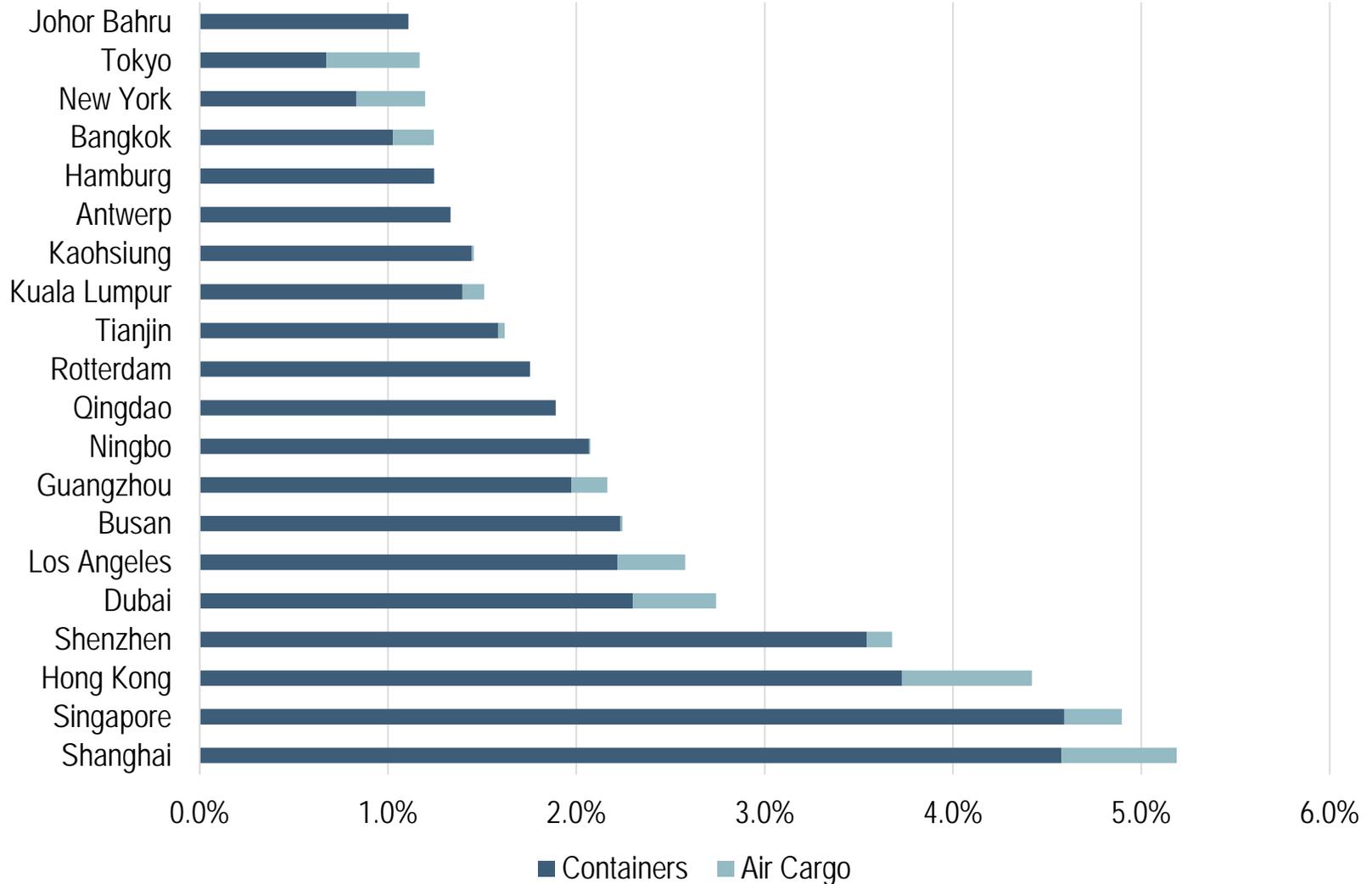


0.0% 2.0% 4.0% 6.0% 8.0% 10.0% 12.0%

Containers
Air Cargo

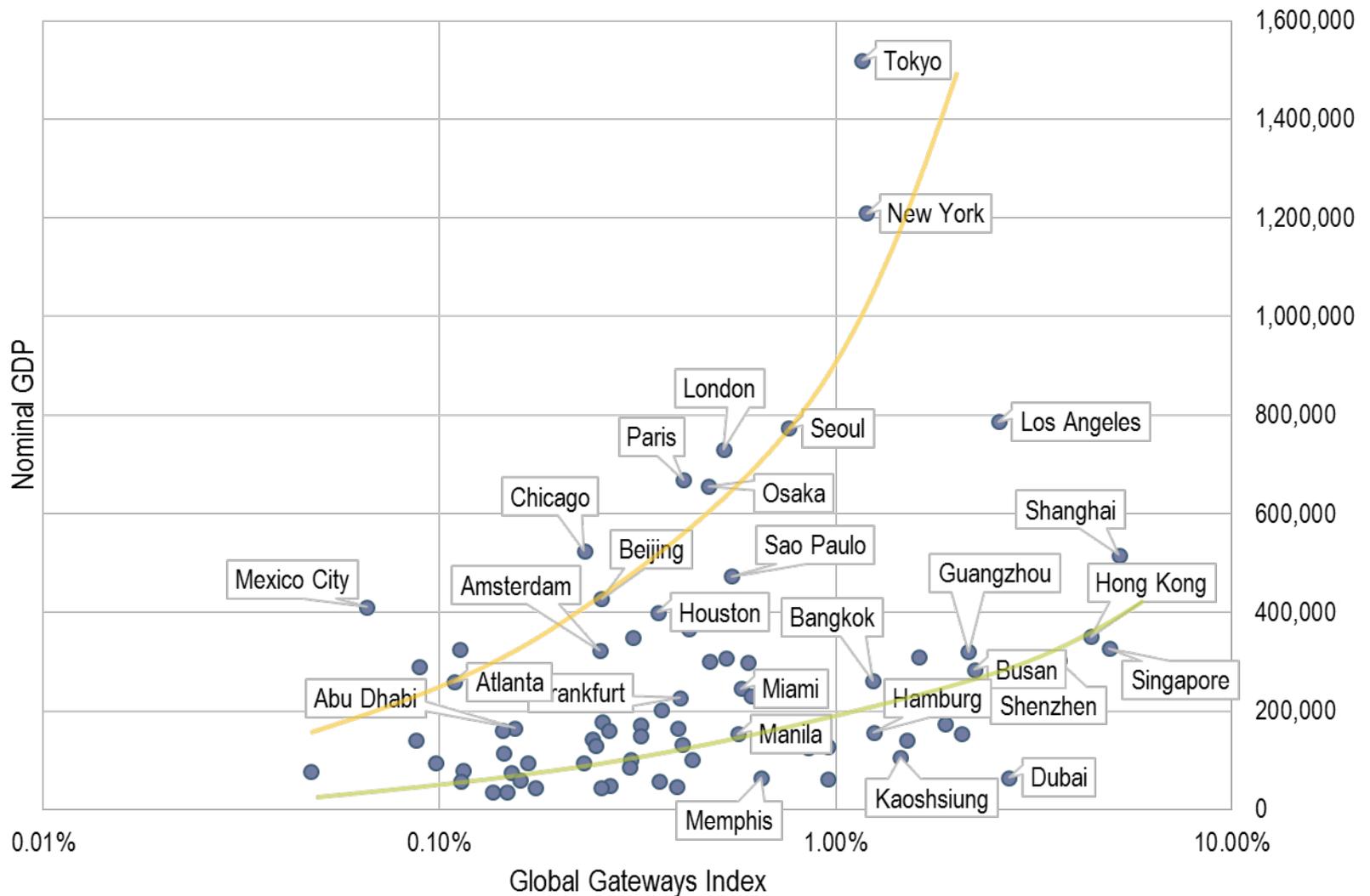


Top 25 Gateways, Global Gateways Index, 2010



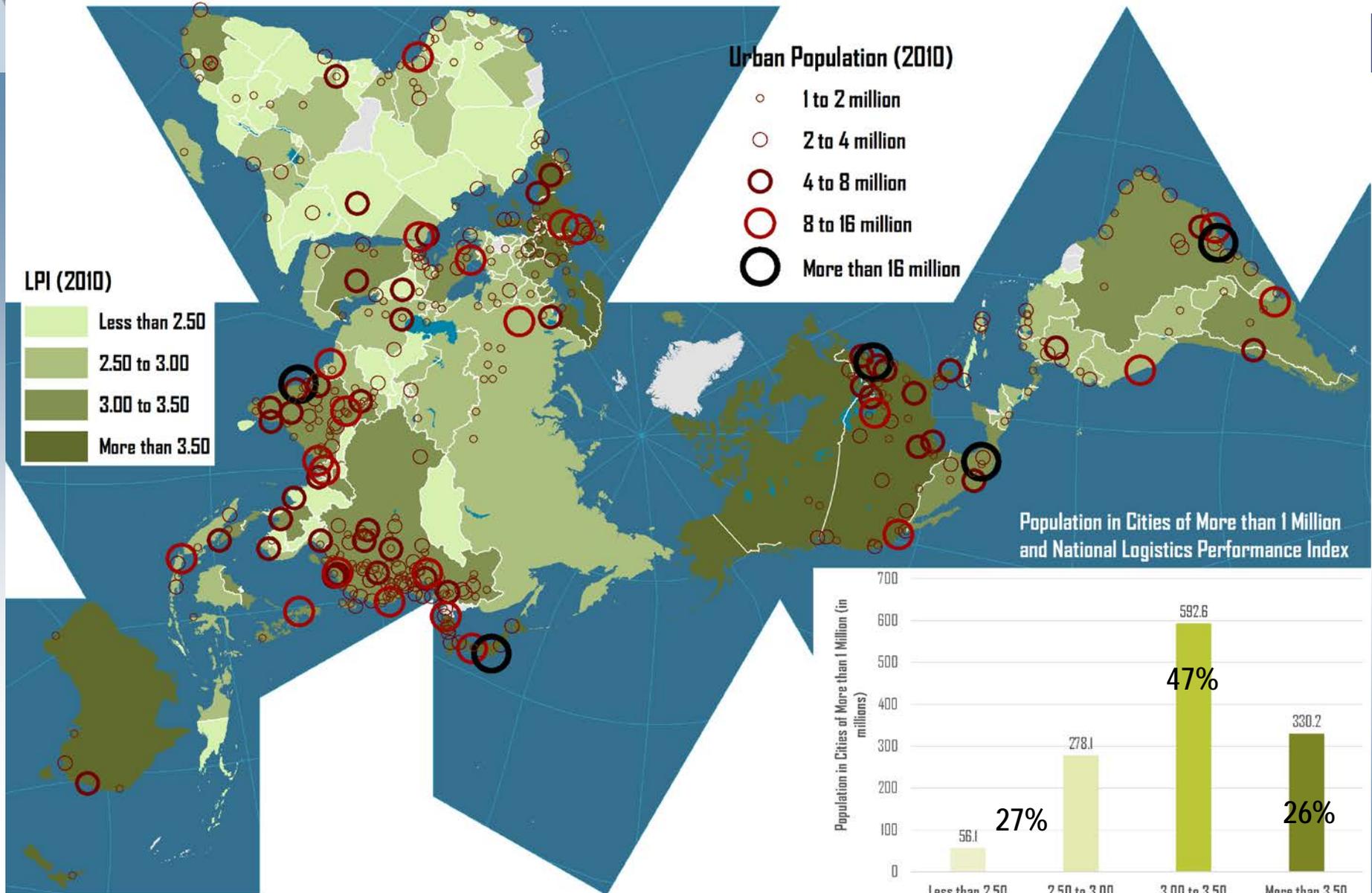


Global Metropolitan Gateways: Two Paths for City Logistics





World's Major Cities and the Logistics Performance Index, 2010





Typology of Global City Logistics: Core Categories



Metropolitan areas of developed economies (MD)

- Large urban agglomerations (>2 million inhabitants). High income and substantial retail activities. Modern freight distribution.



Metropolitan areas of emerging economies (ME)

- Large urban agglomerations (>2 million inhabitants). Low to average income. Dual freight distribution.



Gateway cities (GD & GE)

- Similar to MD and ME, but trade-focused cities (import or export-oriented). Importance of port facilities.

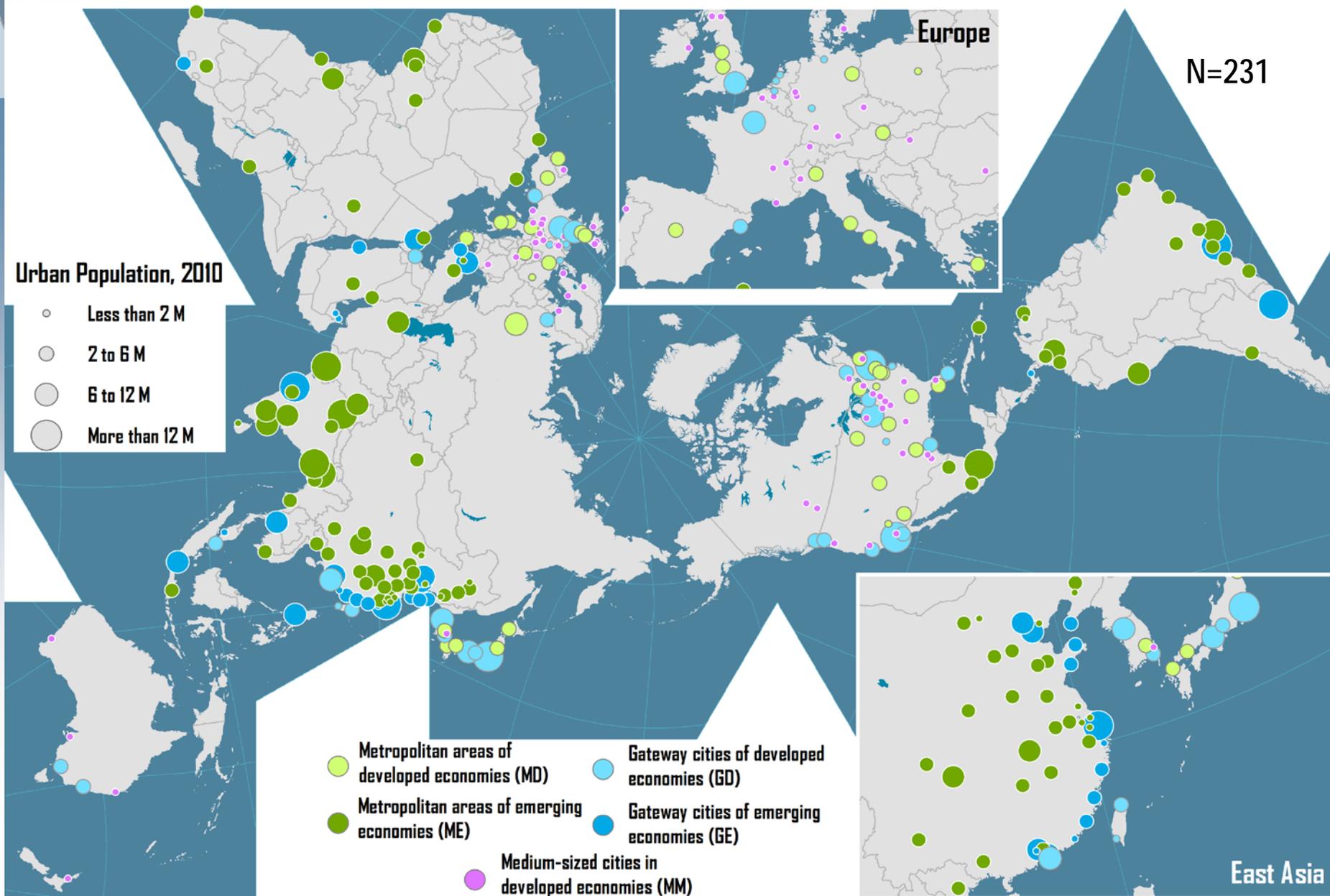


Medium-sized cities in developed economies (MM)

- Cities of less than 2 million inhabitants. Case specific city logistics issues (e.g. CDB).



Global City Logistics Typology





(MD) Large metropolitan areas of developed economies

Operations

Chain retailing resulting in more optimized urban deliveries.

High share of common carriers, high level of urban delivery sub-contracting (Europe).

E-commerce and services activities requiring parcel and express transport.

Modes and vehicles

Prevalence of vans. Many old commercial vehicles in European urban areas.

New city logistics schemes (alternative fuel vans, cargocycles, barges)

Infrastructure and land

Availability of suburban land, generating patterns of logistics sprawl (US, Europe).

Attempts at urban consolidation centers (Europe and Japan).

Policies

European cities involved in new city logistics experiments to reduce the share of old trucks.

Strategies focused on metropolitan truck traffic, port cities more involved in freight issues.



(ME) Large metropolitan areas of emerging economies

Operations

Many independent stores and home and street based businesses requiring specific patterns of deliveries.

Dual transport and logistics system, prevalence of own-account operations.

Modes and vehicles

Huge heterogeneity of modes and types of road uses (from pedestrian carts to two wheelers to trucks), high levels of congestion.

Infrastructure and land

Land generally available but supporting infrastructure often lacking.

Policies

Freight not yet a prevalent issue despite recent efforts in some cities.



(GD & GE) Gateway cities

Operations

Numerous drayage operations from port (airport, intermodal terminals, large logistics hubs) to region's DCs.

Wider scale (global) of freight distribution.

Modes and vehicles

Additional HGV traffic in addition to local freight traffic.

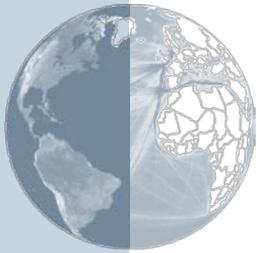
Intermodal traffic.

Infrastructure and land

Intermodal terminals, ports, airports, mega distribution centers serving regional markets.

Policies

Issues of infrastructure investments for a better position in global competition (deepening of ports, capacity of airports, renovation of rail infrastructure, dedicated freight corridors, grade crossings, etc.).



(MM) Medium-sized cities in developed economies

Operations	Higher share of direct deliveries: less transshipment activities in local DCs.
Modes and vehicles	Large and medium size trucks still quite visible.
Infrastructure and land	Various conditions but land generally available and infrastructures adequate.
Policies	Case specific such as access to a congested central area. Many city logistics initiatives in Europe.