Exploring external urban relational processes: inter-city financial flows complementing global city-regions

Article
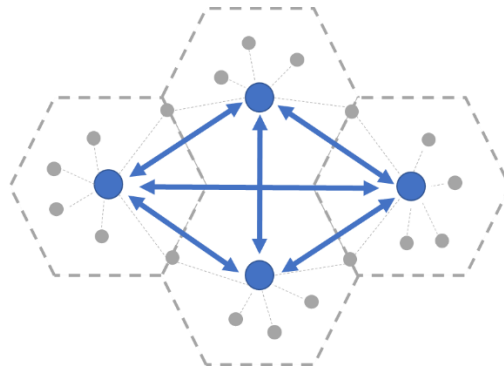
Supplemental Material

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Figure 1: Interlocking Network and Interlocking Hierarchy

Note: This figure illustrates the complementarity of central flow theory and central place theory. The blue dots represent the global cities and the grey dots represent regional cities. The solid arrows represent the inter-urban relations between global cities. The dashed lines represent the urban-hinterland relations between global and regional cities, and the hexagons correspond to the region influence of global cities. The grey dots on the dashed line that two hexagons share indicate 'middle places' with an equal distance to two global cities.

Figure 2: Foreign Direct Investment Flows from 2003 to 2018 across 247 OECD Cities
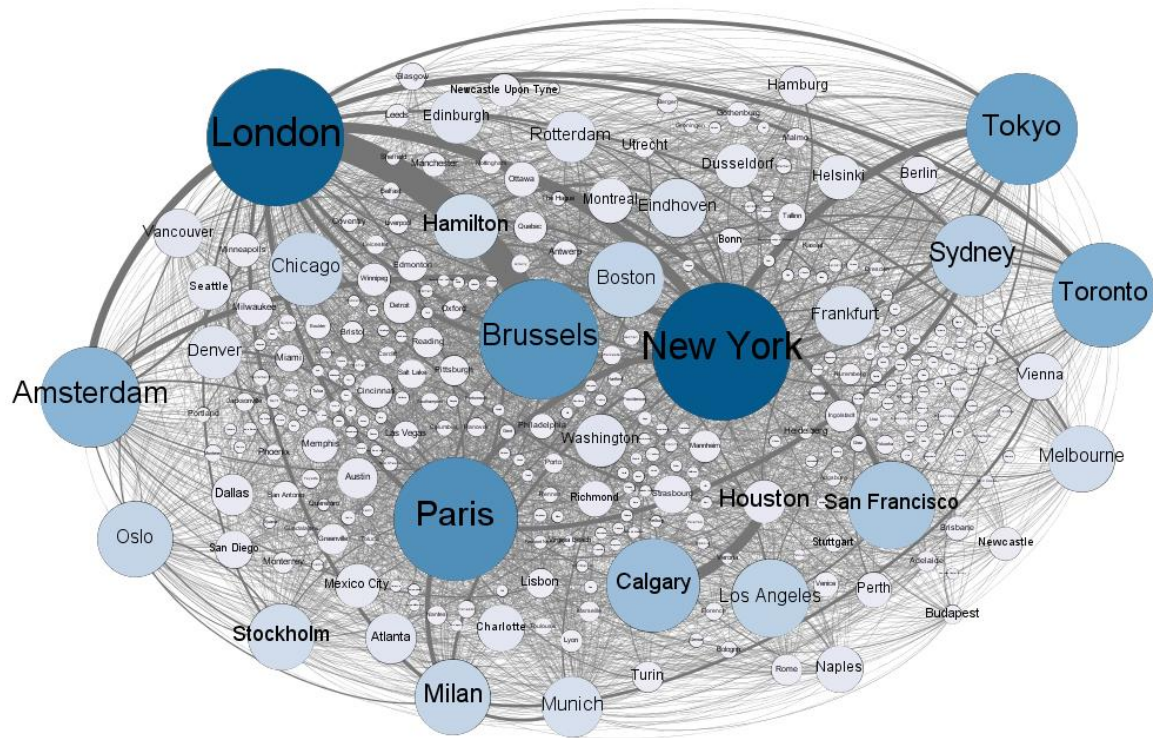
Note: This figure visualises the total foreign direct investment flows from 2003 to 2018 across 247 OECD cities. The size and the colour of the circle for each city show the weighted in-degree of the centrality of each city. A darker color indicates higher FDI inflows. The strength of the FDI flows is represented by the width of the lines connecting these cities.

Figure 3: Relationship between the Centrality of APS Connectivity and the Investment Inflow Centrality for 103 Global Cities
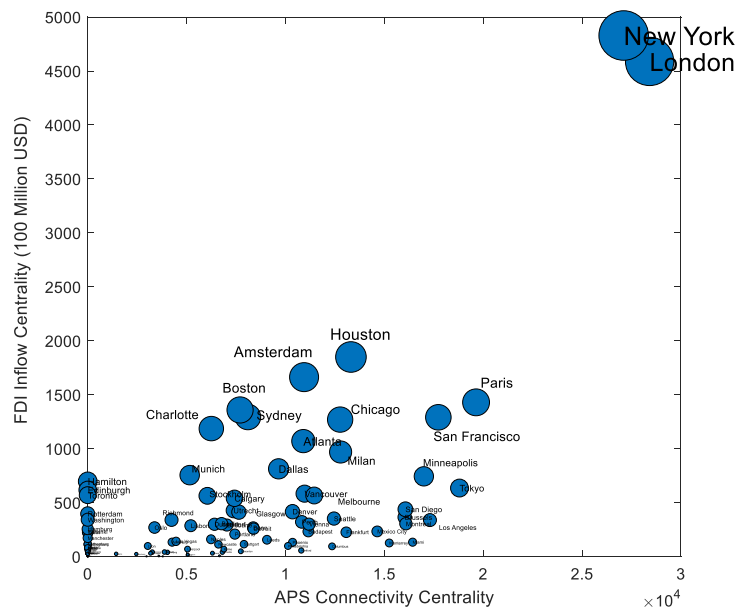
Note: This figure shows the relationship between the APS connectivity and investment inflows based on 103 GaWC ranked cities. The x-axis represents the weighted in-degree centrality of APS connectivity. The y-axis is the weighted in-degree centrality of the FDI inflows to the cities.

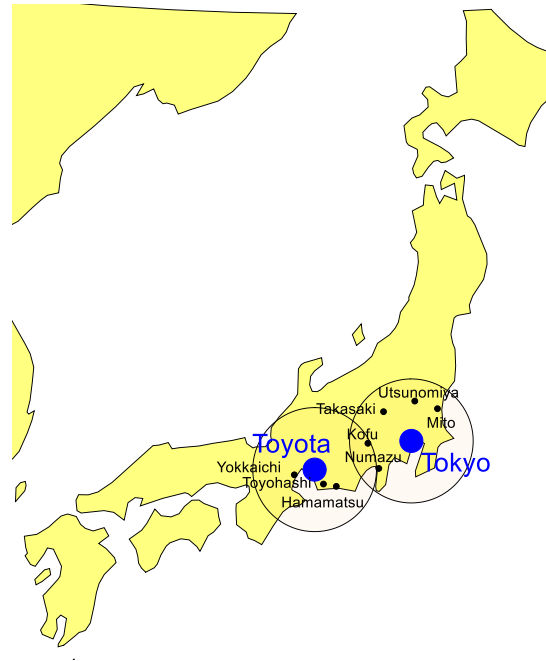# Figure 4: Hinterlands of Leading Global Cities in the US, Europe and Japan

Panel A: Hinterlands of Global Cities in the U.S.
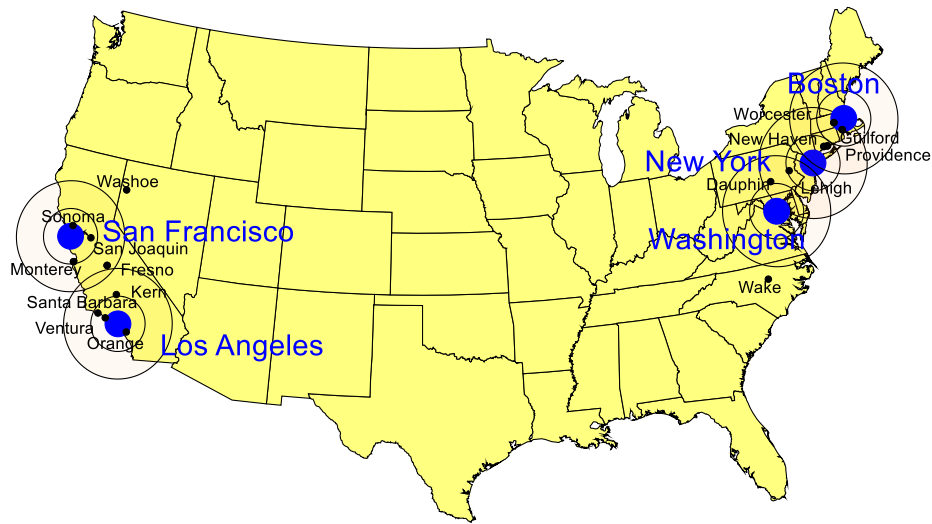
Panel B: Hinterlands of Global Cities in the Europe

Panel C: Hinterlands of Global Cities in Japan

Note: This figure shows the hinterlands of the leading global cities in the US, Europe and Japan. The large blue dots represent global cities while small black dots denote the regional cities in the hinterlands. The relative dependence of the regional cities on the global cities is defined as the inverse of the driving distance to the global city. Each ring stands for another 150 km away from the global city. We only show the regional cities that are influenced the most by the illustrated global city, which is defined by a dependence weight ($\beta^{G,R} w_{i,l}) > 0.08$. More remote regional cities with a weight less of than 0.08 are not shown.