Spatial Restructuring, Jobs-Housing Relationship and Commute in Urban China:
A Multi-Temporal and Multi-Level Analysis of Guangzhou

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ABSTRACT

Chinese cities have experienced dramatic institutional transformations and spatial restructuring in recent years. In particular, the institutional changes in both the housing and labour force sectors have profound consequences on the spatial structure of cities and commuting patterns. This study tries to document the evolving spatial structure and to reveal the relationship between the jobs-housing relationship and commute in urban China. Using household surveys collected in Guangzhou in 2001, 2005 and 2010, the jobs-housing balance measurements in the excess commuting literature are estimated, which show that spatial separation between jobs and housing is increasing since the mid-1990s. The degree of excessiveness of commute, however, is declining. It is argued that the spatial fabrication of functional areas and commuting patterns in Chinese cities today is a manifestation of the deepening marketization of both the housing and labour force sectors. Temporal changes aside, spatial variations of excess commuting metrics are even more impressive. Both the actual and the theoretical minimum commute increases from the city centre toward the periphery area. Along the same direction the absolute excess commute is rising, whereas the percentage excess commute is declining. What is revealed is a spatially uneven jobs-housing proximity and economisation on commuting. The jobs-housing balance in the outer suburb is the worst and has considerable potential for improvements. Meanwhile, the degree of economisation on commuting in the outer suburb is the highest, implying that further improvements in the jobs-housing balance will be utilised to the highest degree. A direct policy implication is that the jobs-housing balance in land use planning should be treated differently across locations. In the inner city, jobs-housing balance will at best be a minor consideration for (re-)development, while more emphasis on the jobs-housing balance should be put in
developing the periphery areas.

The association between jobs-housing balance and individuals' commute distance is a mixed picture, as revealed by the multi-level regressions. Individual socio-demographics are overwhelmingly relevant to commute distance compared with the jobs-housing proximity at the postal zone level. However, the latter is still an important factor that has relevance to individuals' commuting patterns, as it is not only statistically significant but also explains over three quarters of the postal zone level variance of commute distance. Yet its overall significance is not comparable to individuals' socio-demographics and is declining over time.

The estimates of the doubly constrained gravity models show that the best-fit distance sensitivity parameter considerably declined during 1995-2001 and then kept rising until 2010. The results are due to the mixed effect of motorisation and traffic congestion. Mobility improved due to motorisation in early years, but traffic congestion, which is deteriorating in recent years has counter-balanced the mobility improvement of motorisation in the 2000s. The scene revealed in Guangzhou in the last decade is the rising of distance decay effects along rapid motorisation. The type of hukou was the most important socio-economic variable in differentiating the distance sensitivity to spatial distance.

Although the spatial distribution of residence and workplaces of the locals and the migrants are converging, they had very different commuting patterns. The results of various development scenarios suggest that addition of housing to job-rich areas and creation of jobs in housing-rich areas will improve jobs-housing balance.

**KEYWORDS:** spatial restructuring, jobs-housing balance, excess commuting, multi-level regression, gravity model, Guangzhou
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