



# Spatial Economics Research Centre

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## Urban rail investment: lessons from Beijing

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While British politicians argue about infrastructure, Chinese policymakers have been laying it out. Decades of heavy investment in urban transport systems have reshaped the face of most Chinese cities. Between 2000 and 2008 alone, for example, the Beijing city government invested about 52 billion CNY (c. £5.2bn) on new rail transit construction, with a subsequent investment of 105 billion CNY (c. £10bn) in the four years to 2012.

Even in a mega-city like Beijing, this massive investment ought to have a substantial positive effect on local land values, as well as reducing urban congestion. By improving a city's 'effectiveness', new transport links help people become more productive or access amenities, benefits which should cash out in higher land prices, and thus property prices. In the case of London's Jubilee line, for example, LSE research by Steve Gibbons and Steve Machin found positive effects from building the line on nearby house prices. SERC's Gabriele Ahlfeldt has similar results for the Docklands Light Railway.

Has Beijing's transport programme had this positive land market kick? In a new SERC Discussion Paper, I attempt to find out – the first analysis of this kind I'm aware of for cities in BRICS countries.

I use a 'difference-in-difference' methodology, making use of changes in land parcels' distance to the network when new stations open, but also anticipatory land price changes that happen when investment plans are published. Also, I'm able to use vacant land parcel data during 1999 and 2009 in the entire urbanised area of Beijing, rather than pre-designed sample areas. I use GIS to construct precise proximity measures, and run a host of other cross-checks.

As expected, I find that new transport systems in Beijing have a big average effect on local land prices. For example, in 2008 a new rail station added 3.75-4.2% on residential land prices, for areas 1-2km from the station. Further away, these proximity effects decay in a possible non-linear trend over space. Importantly, shifts in local land values also vary widely according to local socio-demographic characteristics. For example, the value of proximity to new stations falls as crime rates increase, and rises substantially with employment accessibility and local residents' median education level.

Given the huge public investment in the city, the question of who gains is important. Certainly, developers and land-owners benefit from appreciating land values in targeted residential and commercial markets. My results also suggest complementary effects between public investment and private sector investment, as higher levels of economic activity should translate into higher future tax receipts. More speculatively, it suggests that improving local people's human capital and life chances, alongside physical development, may raise the economic gains to developers.

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