

Geography and Politics

Why Economic Transformation is Hard in China?

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Based on a paper jointly with *Zhao Chen* and *Zheng Xu*

1. Background

- China's investment- and government-led growth pattern
- Controversy about economic agglomeration and regional balance
 - Geography
 - Globalization leads to economic agglomeration
 - Politics (misallocation of resources)
 - Maximization of local economic scale under fiscal decentralization system
 - Restricted factor mobility (Hukou system, land system)
 - A huge subsidy for development in lagged areas

2. Geography

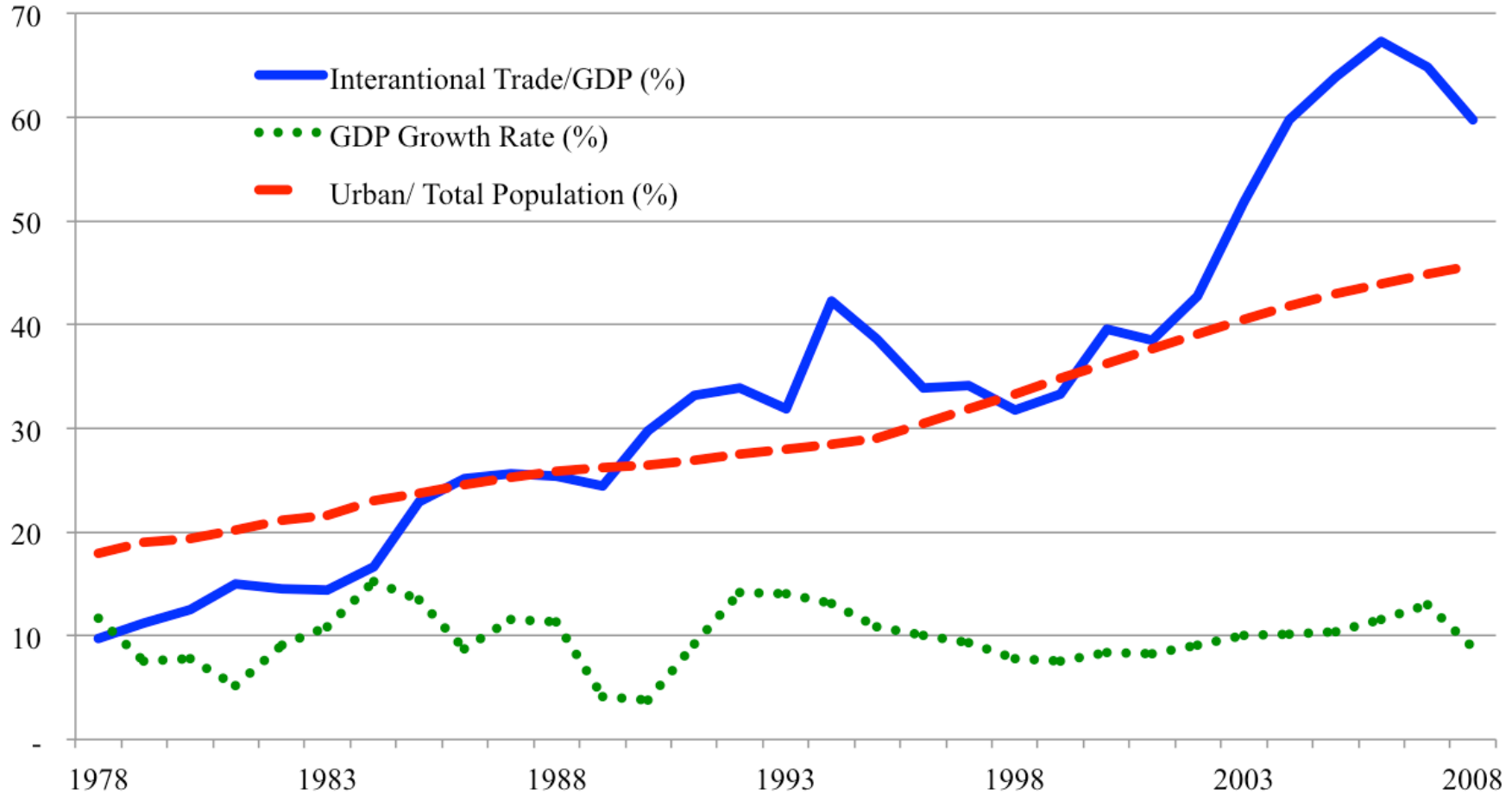
Economic agglomeration and China's urbanization

Only the East Has Coastline



When Globalization Meets Urbanization

It may reshape economic geography



3. Politics

Institutional barriers to factor mobility

Fiscal Decentralization

- Growth-based promotion of government officials and fiscal revenue maximization
 - Maximizing local economic scale
- Pursuing balance of what?
 - Economic scale?
 - Or, GDP (income) per capita?

Institutional Barriers to Factor Mobility

- **Labor:** Hukou system and urban-rural divide
 - Labor market: access to high-pay industries
 - Public services: housing, social security, education
 - Powers in policy making
- **Land:** Land quota system
 - Food security-1.8 billion acres of agricultural land
 - Over-supply of land quotas in inland and Cross-regional exchange not allowed
- **Capital:** A huge central-to-local subsidy

4. **Geography or Politics**

Which one dominates growth?

Data

- Chinese city-level data 1990-2006
 - Including 286 prefectural-level and above cities' data from 1990-2006
 - Chinese Cities Statistical Yearbook (National Bureau of Statistics, 1991-2007)
 - In earlier years, we have information of less than 286 cities.

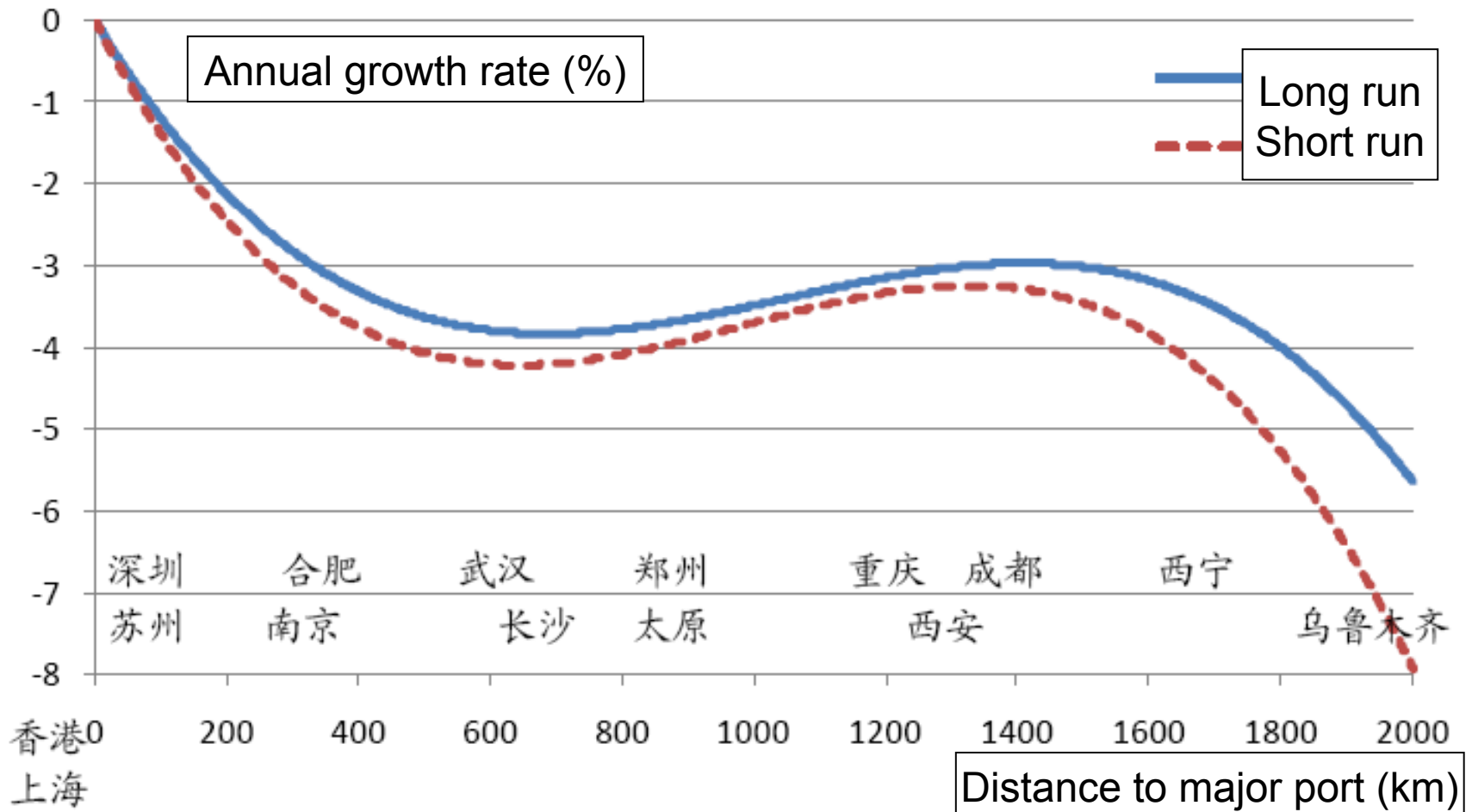
Urban Economic Growth in short, medium and long run (1)

	(1)	(2)	(3)
Geography	Short	Medium	Long
distbig	-0.0172 ^{***}	-0.0108 ^{**}	-0.00798 ^{**}
distbig_2	0.0000225 ^{***}	0.0000163 ^{**}	0.0000138 ^{**}
disport	-0.0156 ^{**}	-0.0163 ^{***}	-0.0133 ^{***}
disport_2	0.0000180 ^{**}	0.0000174 ^{***}	0.0000144 ^{***}
disport_3	-6.09e-09 ^{**}	-5.41e-09 ^{**}	-4.58e-09 ^{***}
bigcity	1.436	2.354 [*]	0.615
gdpofbig0	-1.355	-0.301	-0.645
samepro	-5.359 ^{***}	-4.171 ^{***}	-1.959 ^{***}
seaport	3.298 ^{**}	3.198 ^{**}	2.128 ^{**}
riverport	-0.111	0.548	0.432
center	-0.138	-0.287	-0.877
west	-0.365	-0.00424	-1.329

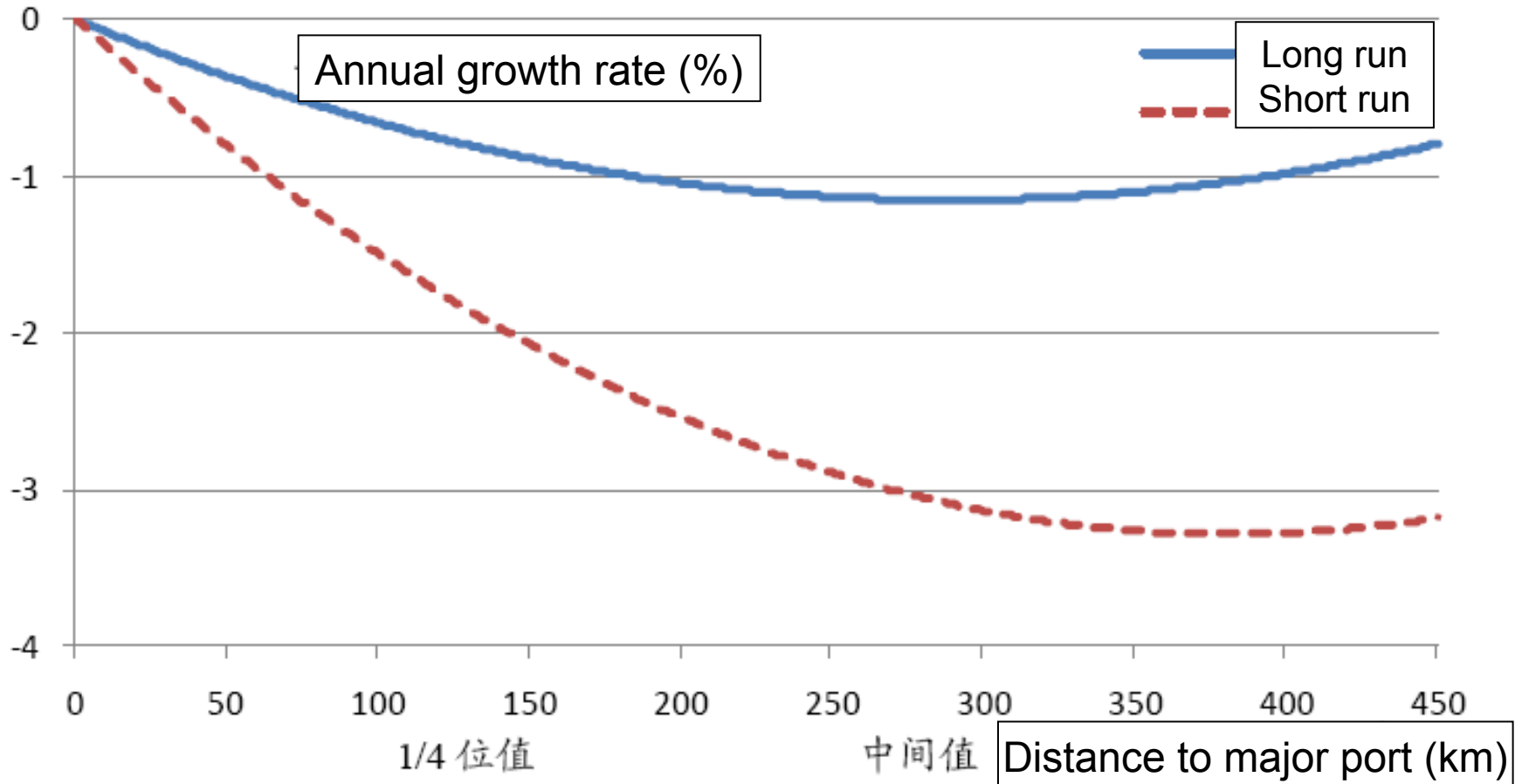
Urban Economic Growth in short, medium and long run (2)

	(1)	(2)	(3)
Other growth factors	Short	Medium	Long
lngdp	-2.680 ^{***}	-2.858 ^{***}	-1.454 [*]
inve	0.0874 ^{***}	0.0351 ^{**}	-0.0282
labor	-0.104 ^{***}	-0.0995 ^{***}	0.0465
edu	0.482	0.289	1.071 ^{***}
gov	0.269 ^{***}	0.167 ^{**}	0.0487
fdi	0.00155	0.00240	0.0141
urb	0.0668 ^{***}	0.0151	0.00426
density	-0.00175 ^{***}	-0.0000767	0.000275
den_2	6.82e-08 ^{***}	8.48e-09	-7.31e-09
SM	-0.00572	-0.00719	-0.00565
capital	0.549	-0.248	0.749
open	-0.614	-0.0496	-0.252
SEZ	-5.811 ^{**}	-2.364	-2.045
Constant	49.38 ^{***}	41.05 ^{***}	18.70 ^{**}
R^2	0.346	0.170	0.404

Distance to Major Port and Urban Economic Growth



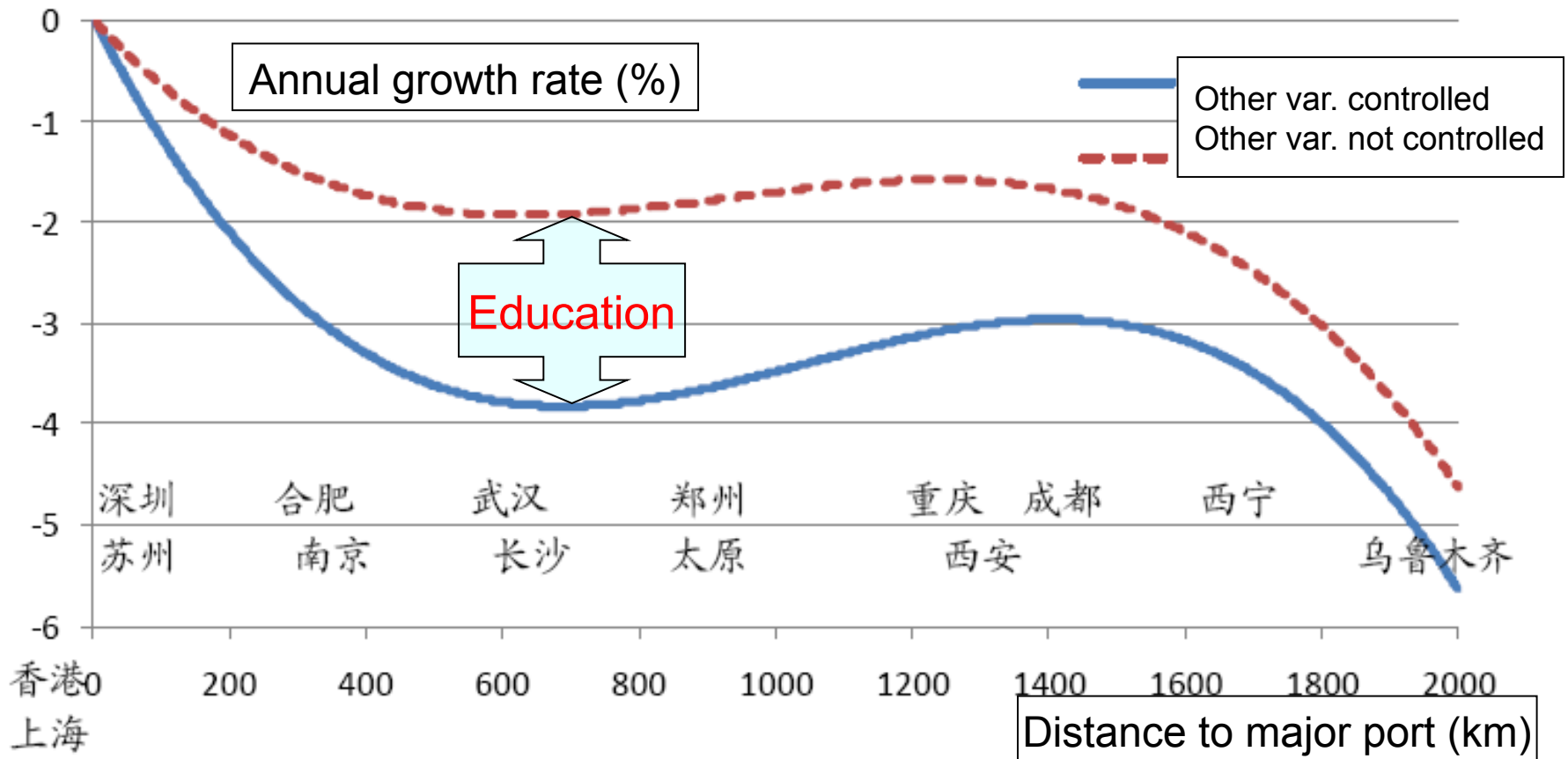
Distance to Large City and Urban Economic Growth



How important are geography factors?

	(4)	(5)	(6)
	Short	Medium	Long
distbig	-0.00707	-0.00392	-0.00558**
distbig_2	0.0000128*	0.00000865*	0.0000121***
disport	-0.0118**	-0.00267	-0.00737***
disport_2	0.0000131**	0.00000447	0.00000881***
disport_3	-4.04e-09**	-1.88e-09	-3.14e-09***
Constant	12.85***	8.823***	10.39***
Observations	3185	706	202
R^2	0.002	0.006	0.069
R^2 of full model	0.346	0.170	0.404

What can alleviate the geographical disadvantage in the long run?



5. Conclusions and Policy Implications

Geography matters!

- Although geography factors cannot explain much the short run growth of the urban economy, in the model of long run, only two factors—the distance to the major port and large city—account for 6.9 percent of long-term urban growth, while all independent variables account for 40.4 percent.

Policy mainly matters in the short run

- Investment and government spending can promote the short-term growth of the city, but they are not significant in the long run.
- After controlling geography factors, only education has significant effect on the growth of the city in the long run, and it can also offset the geographic disadvantages.

Moving Money or Moving People?

A Global Concern

- **A similar story in UK**
- **Moving Money:** offsetting the role of geography factors with government policy?
- **Moving People:** promote the mobility of labor and other production factors.
- Only wise strategy can sustain high growth and global competitiveness of China.

Thank you!

Question :

How important geography is

- *What is the respective role of geography, policy, etc in explaining the differences of economic growth in different cities.*
- *How do their roles and relative importance change in the short, medium and long run?*

Our answers

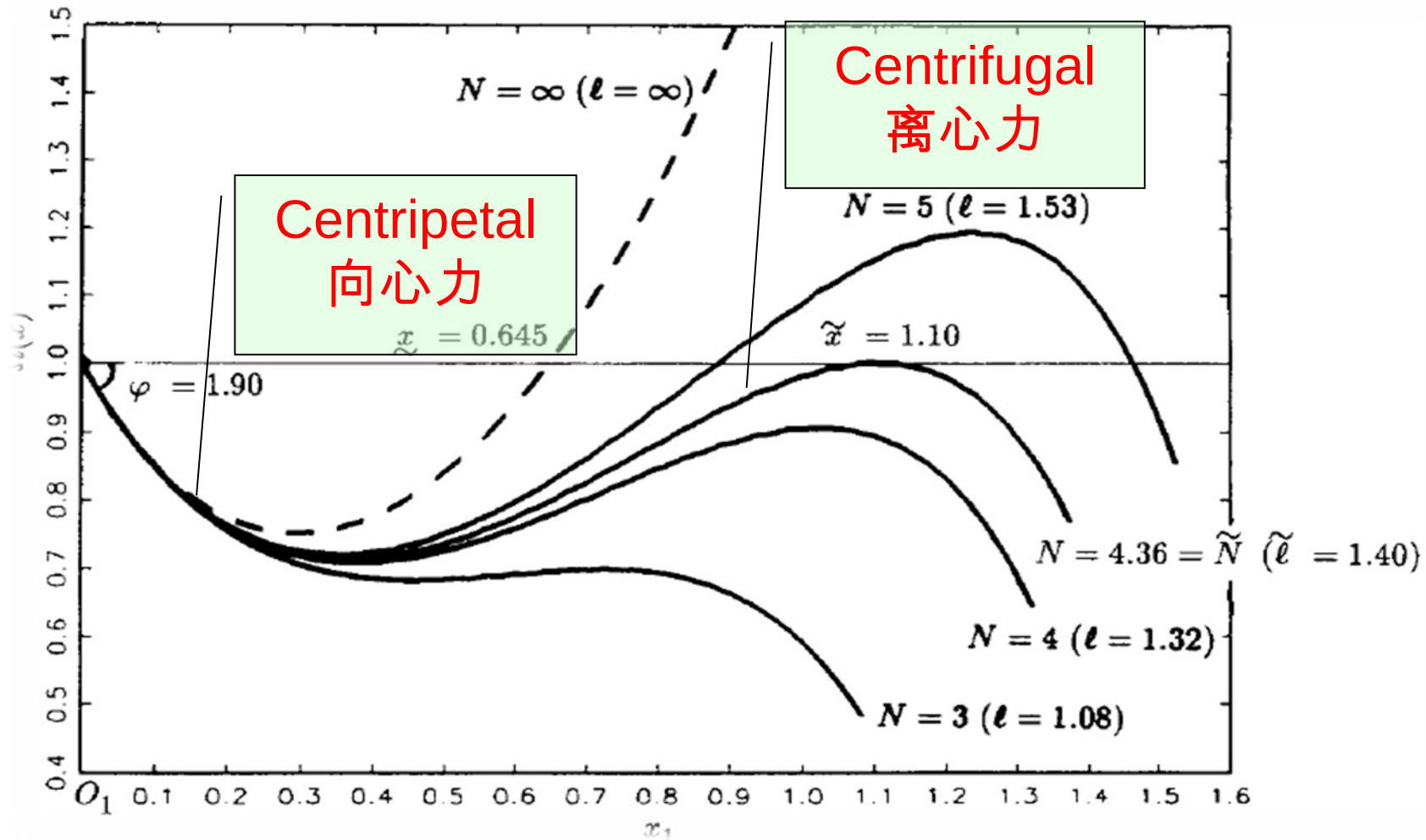
- *Geography is very important for China's urban growth.*
 - *The model established in this paper, accounts for 34.6 percent of the short run urban growth in China. And 0.2 percent of that can be explained by the distance to large harbor and large city.*
 - *While in the model of long run, only two factors—the distance to the large harbor and large city—account for 6.9 percent of differences in long-term urban growth and all independent variables account for 40.4 percent.*
- *Only education and geography are the dominant factors for sustainable urban growth.*
- *The impact of investment and government expenditure is significantly positive in short run, while not significant in long run.*

History of urban-rural segmentation

- Rapid industrialization (or the catch-up strategies)
 - → urban and industry biased policies
 - → urban-rural segmentation
 - → *Hukou* system (to restrain migration from rural to urban)
 - → unequal benefits between urban and rural residents
 - → urban and rural (interregional) interest groups & policy made by the former
 - → persistence of the segmentation

Geography

Core-Periphery Model of urban system



(Fujita and Krugman, 1995 ; Fujita and Mori, 1997; Fujita et al, 1999)

Model

- *Short run(1 year); Medium run(5 years); Long run (16 years)*

$$Dgdp_{it} = f(\ln gdp_{it-h}, inve_{it-h}, lab_{it-h}, edu_{it-h}, gov_{it-h}, fdi_{it-h}; den_{it-h}, geo_{i0} \dots)$$

- *The dependent variable $Dgdp_{it}$ is the average annual growth rate of per capita GDP from 1990-2006 deflated by provincial urban CPIs, respectively, for city i year t .
(manufacture and service)*
- *Explanatory variable*
 - *the log of per capita output*
 - *the ratio of investment to GDP and the ratio of employee to total population*
 - *the ratio of teachers to students in primary and junior schools*
 - *the government expenditure-to-GDP ratio and FDI-to-GDP ratio, represent the government intervention and openness respectively*
 - *the population density in municipal district*
 - *others : the ratio of the non-agricultural population to the total population accounting for the level of urbanization; the ratio of service GDP to manufacturing for the industrial structure of urban sectors*

Geography

- *the liner distance to the two largest port cities: Shanghai and Hong Kong*
- *the liner distance to the “nearest” largest city*
- *samepro : this dummy variable represents whether a city is in the same province where its nearest big city locates*
- *other geography factors such as Dummy seaport and riverport*

Robustness Checks

- *We replace the explanatory variables in table 1 by the mean in medium run and in long run*
 - *“Other factors”? They are insignificant not because of their initial values controlled.*
 - *The significance of education declines, the coefficient of “average” urbanization level becomes negative in long run.*
- *Insignificant “traditional” variables will not become significant even we drop major geography variables.*