Supplementary information

Table S1. Circular correlations (equivalent to Pearson's correlation) between the mean direction of population, economy, and green space. N represents number of observations and numbers in brackets are p values.

N=10	Population (USA_China)	Economy (USA_China)	Green Space (USA_China)
Population (USA_China)	1		
Economy (USA_China)	0.67(0.054)	1	
Green Space (USA_China)	-0.24(0.46)	-0.01(0.97)	1
N=5	Population (USA)	Economy (USA)	Green Space (USA)
Population (USA)	1		
Economy (USA)	0.82(0.13)	1	
Green Space (USA)	0.06(0.88)	0.07(0.87)	1
N=5	Population (China)	Economy (China)	Green Space (China)
Population (China)	1		
Economy (China)	0.39(0.15)	1	
Green Space (China)	0.004(0.99)	-0.11(0.74)	1

Table S2. Spectral and spatial resolution of Landsat bands

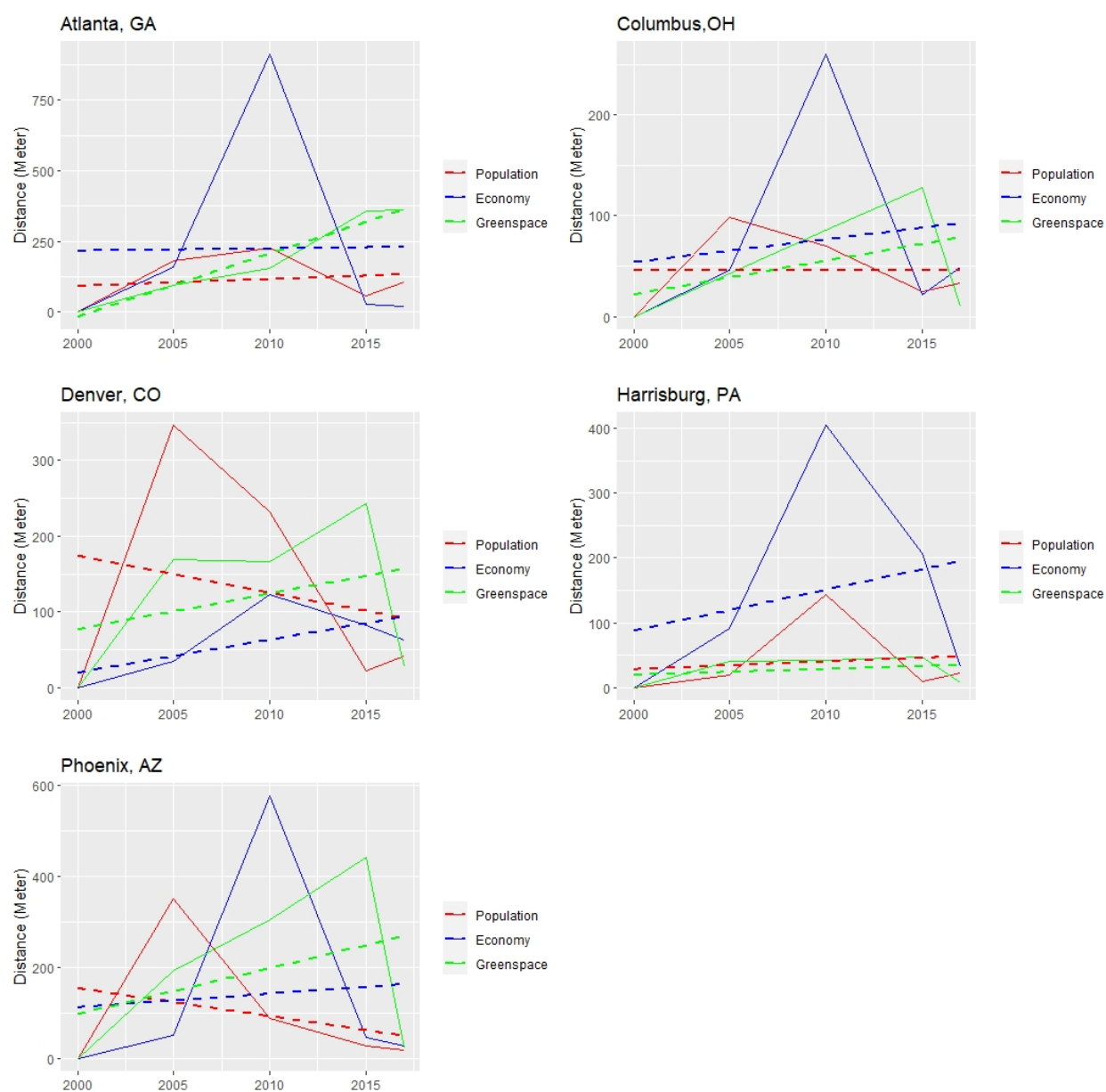| Bands	Landsat8 OLI/ micrometers	Landsat7 ETM+/ micrometers	Spatial Resolution
Coastal aerosol	0.43-0.45	NA	30
Blue	0.45-0.51	0.45-0.52	30
Green	0.53-0.59	0.52-0.60	30
Red	0.64-0.67	0.63-0.69	30
NIR	0.85-0.88	0.77-0.90	30
SWIR 1	1.57-1.65	1.55-1.75	30
SWIR 2	2.11-2.29	2.09-2.35	30

Figure S1. The temporal trend of spatial distance moved from one mean center to another in the US.
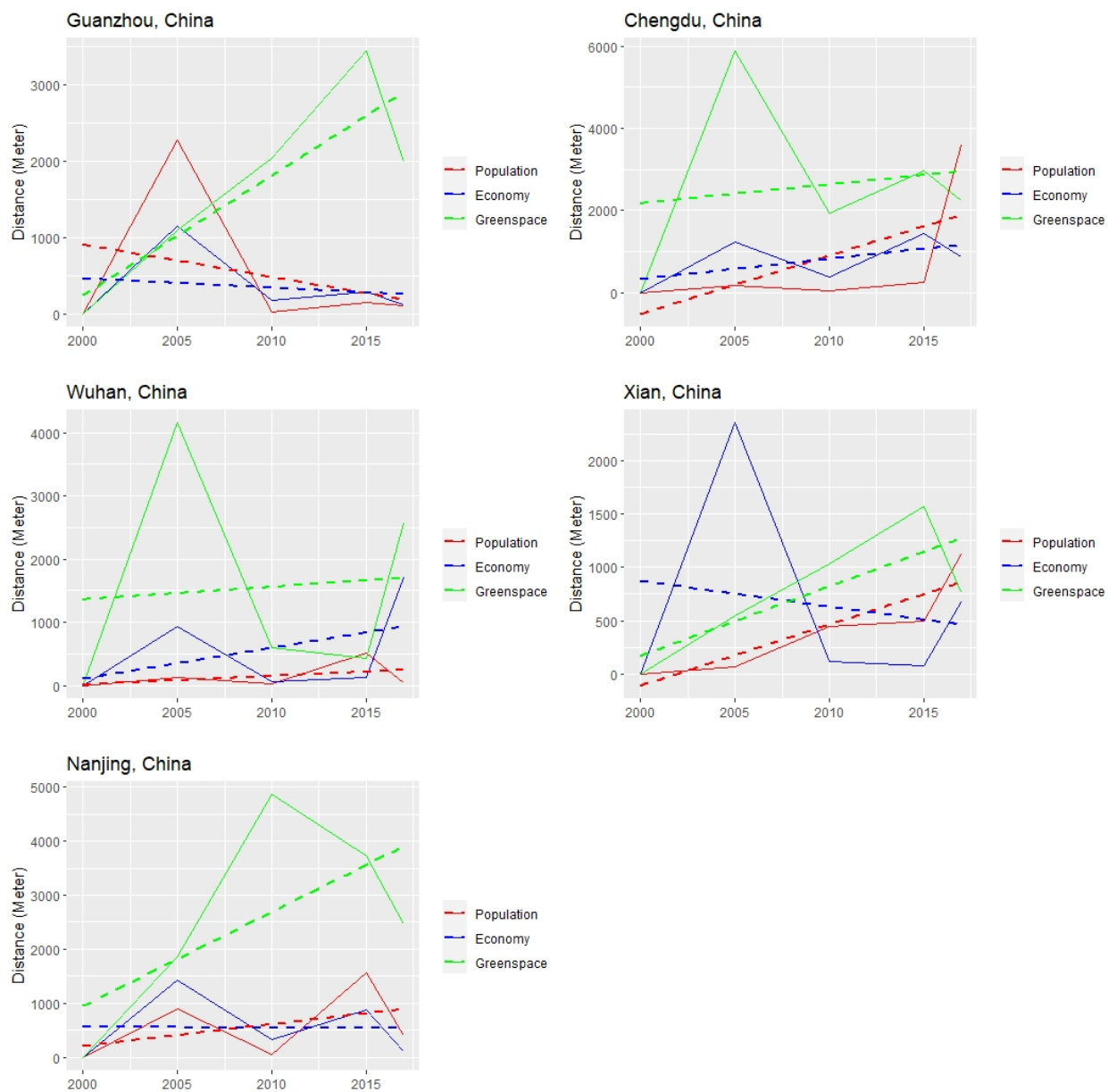
Figure S2. The temporal trend of spatial distance moved from one mean center to another in China.