

## **The impacts of openness on air quality in China**

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**Online Appendix**

Table A1. *Regional disparity and air pollution*

Indicators	All cities (n=286)		Eastern cities (n=132)		Central cities (n=70)		Western cities (n=84)	
	2001	2008	2001	2008	2001	2008	2001	2008
Total population (billion)	1.167	1.233	0.566	0.600	0.314	0.331	0.286	0.303
Urban GDP per capita (10,000 RMB Yuan)	0.380	0.998	0.535	1.412	0.245	0.655	0.248	0.632
Household disposable income (10,000 RMB Yuan)	0.561	1.187	0.738	1.356	0.569	1.068	0.581	1.022
Ratio of imports plus exports to total GDP	0.160	0.235	0.270	0.396	0.050	0.096	0.060	0.098
Total inward FDI inflows (billion US Dollar)	0.031	0.051	0.033	0.087	0.005	0.027	0.002	0.015
Ratio of capital-to-labor (1,000 RMB Yuan per worker)	2.971	7.087	3.746	8.655	1.976	5.188	2.581	6.204
Integrated air quality index	2.801	2.126	2.627	2.043	2.813	2.242	3.106	2.194
SO <sub>2</sub> emissions per capita (kg)	15.928	20.332	15.239	18.527	9.930	14.643	22.009	27.910
SO <sub>2</sub> concentrations (μg/m <sup>3</sup> )	5.642	4.869	5.450	4.416	5.608	5.119	6.010	5.474
SO <sub>2</sub> removal rate (%)	17.632	41.880	15.541	44.337	16.429	37.193	23.004	39.773

Notes: (1) See table A2 for the data sources.

(2) The economic variables are measured in their nominal values.

Table A2. *Main data sources*

Code	Name of statistical yearbooks or databases	Issue time
1	China Ports Yearbooks	2002-2009
2	China Commercial Yearbooks	2005-2009
3	China Meteorological Database	2001-2008
4	China Environmental Yearbooks	2001-2009
5	China City statistical Yearbooks	2001-2009
6	China Customs Statistical Yearbooks	2002-2009
7	China Environmental Statistical Yearbooks	2001-2009
8	A collection of some Chinese cities' yearbooks	2001-2009
9	China Urban Construction Statistical Yearbooks	2002-2009
10	China Statistical Yearbook for Regional Economy	2001-2009
11	A complete collection of provincial statistical yearbooks	2001-2009
12	A collection of some Chinese cities' statistical yearbooks	2001-2009
13	China Special Economic Zone and Development Area Yearbooks	2002-2003
14	Statistical Materials on the Population of Counties and Cities of the People's Republic of China	2000-2008
15	A collection of some Chinese cities statistical communiqués on economic and social development	2001-2009

Notes: (1) The calibers of Chinese city-level data among different sources are not completely uniform.

(2) Considering China's high reliance on bottom-up administrative reporting, we assume the data collected and reported by a statistical bureau at lower administrative level are more accurate than the ones collected and reported by a statistical bureau at higher administrative level when the values of same indicator for certain city from two different statistical books are different.

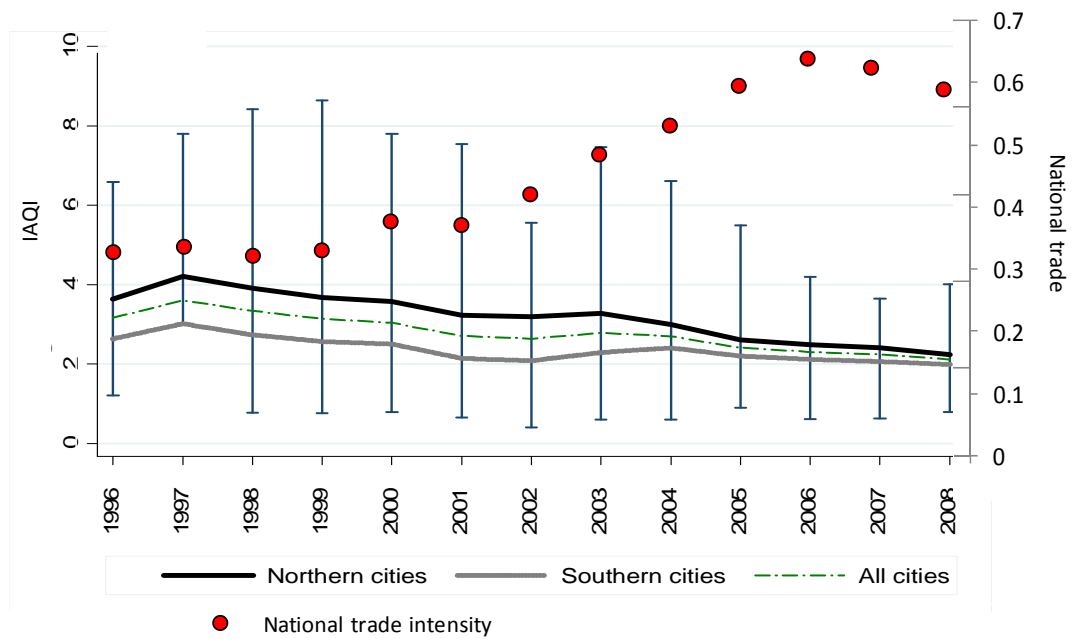


Figure A1. *Integrated air quality index (IAQI) for China's key environmental protection cities*

Notes: Vertical bars indicate the range of IAQI for all the cities. The highest horizontal mark shows the most polluted cities. The lowest horizontal mark shows the least polluted cities.