

## *The Impact of Emission Standards on Reduction of Air Pollutants in China*

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### **Data Description:**

This dataset includes data for 46 cities, covering northern and southern China, including metropolises such as Beijing and Shanghai, provincial capitals such as Changchun and Guangzhou, and other smaller prefecture-level cities. A comprehensive air pollution index serves as the dependent variable. This index reflects the overall air quality of a city, including several major air pollutants such as NO<sub>x</sub>, CO<sub>x</sub>, SO<sub>2</sub> and PM. Major independent variables include a categorical dummy of standards from 0 to 3, increasing with the intensity of the standards. And three other variables named China2, China3 and China4, which are set equal to 1 if these standards have been implemented. Although the timetable shows that other than experimental cities, the standards were implemented nationwide, due to the different quality of gasoline, however, in China, small cities would see a lagged effect of the standards. Therefore, cities are separated into three categories: experimental cities, provincial capitals and small cities. Each of these categories has a different time of entry for the implementation of standards. Other control variables include the number of civil motor automobiles and the added value of industry. This database is collected from Chinese Environmental Yearbooks (2001-2009) and Chinese Provincial Yearbooks (2001-2009). Due to the different statistical methodology, some data points are missing. The following variables are included:

variable name	storage type	display format	value label	variable label
id_city	byte	%8.0g		Unique ID for each city
city	str12	%12s		City
year	int	%8.0g		Year
p	float	%9.0g		Comprehensive air pollution index (the higher the worse air quality)
precip	float	%9.0g		Precipitation
fuel	float	%9.0g		Fuel Price Index
auto	float	%9.0g		Number of Civil Automobiles
industry	float	%9.0g		value added of industry
china2	byte	%8.0g		= 1 if the city implements China II
china3	byte	%8.0g		= 1 if the city implements China III
china4	byte	%8.0g		= 1 if the city implements China IV
standard	byte	%8.0g		Stages of standards (=0 if is China I, =1 if is China II, =2 if is China III, =3
lauto	float	%9.0g		Log of Number of Civil Automobiles
lindustry	float	%9.0g		Log of Added value of industry
ehat	float	%9.0g		e[id_city,t]
t_alt	float	%9.0g		rank of (year) by id_city