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Supplement of

Effects of air pollution control policies on \( \text{PM}_{2.5} \) pollution improvement in China from 2005 to 2017: a satellite-based perspective

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Figure S1. Key regions in 12th Five Year Plan on Air Pollution Prevention and Control in Key Regions.
Table S1 Summary statistics of variables for the modeling dataset from 2014 to 2017

<table>
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<th>Year</th>
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<th>S.D.</th>
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*a* Abbreviations used for the meteorological variables: WS: wind speed at 10 m above ground; PBLH: planetary boundary layer height; PS: surface pressure; RH_PBLH: mean relative humidity in planetary boundary layer; Precip_Lag1: cumulative precipitation of the previous day.
Table S2 Fixed effect, model fitting and CV results of the first-stage LME model for each province for 2014 model

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<th>PS</th>
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a Only statistically significant (p<0.05) intercepts and slopes are shown. b Including Taiwan. c Including Hong Kong, Macao, and Hainan. d Including Beijing and Tianjin. e Including Shanghai. f Abbreviations used for the meteorological variables: WS: wind speed at 10 m above ground; PBLH: planetary boundary layer height; PS: surface pressure; RH_PBLH: mean relative humidity in planetary boundary layer; Precip_Lag1: cumulative precipitation of the previous day.
Table S3 Fixed effect, model fitting and CV results of the first-stage LME model for each province for 2015 model

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<th>N</th>
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a Only statistically significant (p<0.05) intercepts and slopes are shown. b Including Taiwan. c Including Hong Kong, Macao, and Hainan. d Including Beijing and Tianjin. e Including Shanghai. f Abbreviations used for the meteorological variables: WS: wind speed at 10 m above ground; PBLH: planetary boundary layer height; PS: surface pressure; RH_PBLH: mean relative humidity in planetary boundary layer; Precip_Lag1: cumulative precipitation of the previous day.
Table S4 Fixed effect, model fitting and CV results of the first-stage LME model for each province for 2016 model

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a Only statistically significant (p<0.05) intercepts and slopes are shown. b Including Taiwan. c Including Hong Kong, Macao, and Hainan. d Including Beijing and Tianjin. e Including Shanghai. f Abbreviations used for the meteorological variables: WS: wind speed at 10 m above ground; PBLH: planetary boundary layer height; PS: surface pressure; RH_PBLH: mean relative humidity in planetary boundary layer; Precip_Lag1: cumulative precipitation of the previous day.
**Table S5 Fixed effect, model fitting and CV results of the first-stage LME model for each province for 2017 model**

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* Only statistically significant (p<0.05) intercepts and slopes are shown. b Including Taiwan. c Including Hong Kong, Macao, and Hainan. d Including Beijing and Tianjin. e Including Shanghai. f Abbreviations used for the meteorological variables: WS: wind speed at 10 m above ground; PBLH: planetary boundary layer height; PS: surface pressure; RH_PBLH: mean relative humidity in planetary boundary layer; Precip_Lag1: cumulative precipitation of the previous day.
Figure S2. Spatial distributions of annual mean ground measured PM$_{2.5}$ concentrations in China from 2013 to 2017
Figure S3 Spatial distribution of satellite and ground PM$_{2.5}$ concentrations of 2017 in Beijing. The circles denote the ground monitoring stations.