

Assessing COVID-19 Lockdowns' Impacts on Global Urban PM_{2.5} Air Quality with Observations and Modeling

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Supplementary material

Table S1

Figures S1-S8

Table S1: Characteristics of PM_{2.5} observations from 21 monitoring stations used in this study. The number of order is consistent with that illustrated in Figure 1.					
No.	City	Country	Latitude	Longitude	Period of PM _{2.5} observations
1	Beijing	China	39.95°N	116.47°E	2010-2022
2	Shenyang	China	41.78°N	123.43°E	2013-2022
3	Shanghai	China	31.21°N	121.45°E	2012-2022
4	Guangzhou	China	23.11°N	113.32°E	2011-2022
5	Hanoi	Vietnam	21.03°N	105.83°E	2015-2022
6	Jakarta*	Indonesia	6.21°S°N	106.85°E	2015-2022
7	Chennai	India	13.05°N	80.25°E	2015-2022
8	New Delhi	India	28.60°N	77.19°E	2015-2022
9	Mumbai	India	19.06°N	72.86°E	2015-2022
10	Kolkata	India	22.55°N	88.35°E	2015-2022
11	Hyderabad	India	17.44°N	78.47°E	2015-2022
12	Addis Ababa	Ethiopia	8.98°N	38.76°E	2016-2022
13	Dubai	UAE	25.20°N	55.27°E	2018-2022
14	Kuwait City	Kuwait	29.38°N	47.98°E	2017-2022
15	Manama	Bahrain	26.22°N	50.59°E	2016-2022
16	Paris	France	48.86°N	2.35°E	2013-2022
17	Milano	Italy	45.46°N	9.19°E	2013-2022
18	Pristina	Kosovo	42.60°N	21.16°E	2016-2022
19	New York City	USA	40.71°N	74.00°W	2010-2022
20	Los Angeles	USA	34.05°N	118.24°W	2010-2022
21	Lima	Peru	12.10°S	76.97°W	2016-2022
<i>*There were two PM_{2.5} monitoring stations in Jakarta, Indonesia, namely Jakarta – Central and Jakarta – South.</i>					

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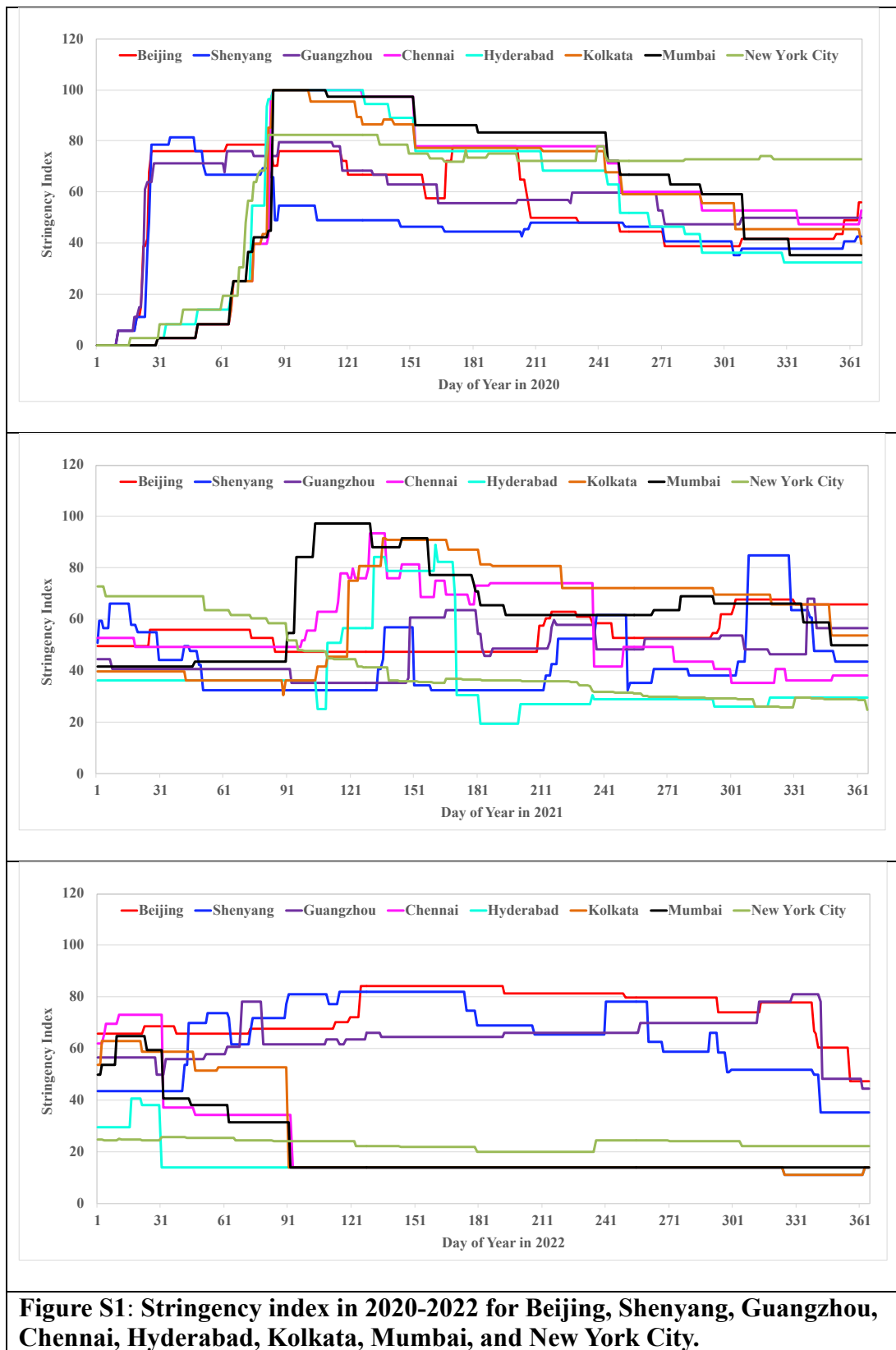


Figure S1: Stringency index in 2020-2022 for Beijing, Shenyang, Guangzhou, Chennai, Hyderabad, Kolkata, Mumbai, and New York City.

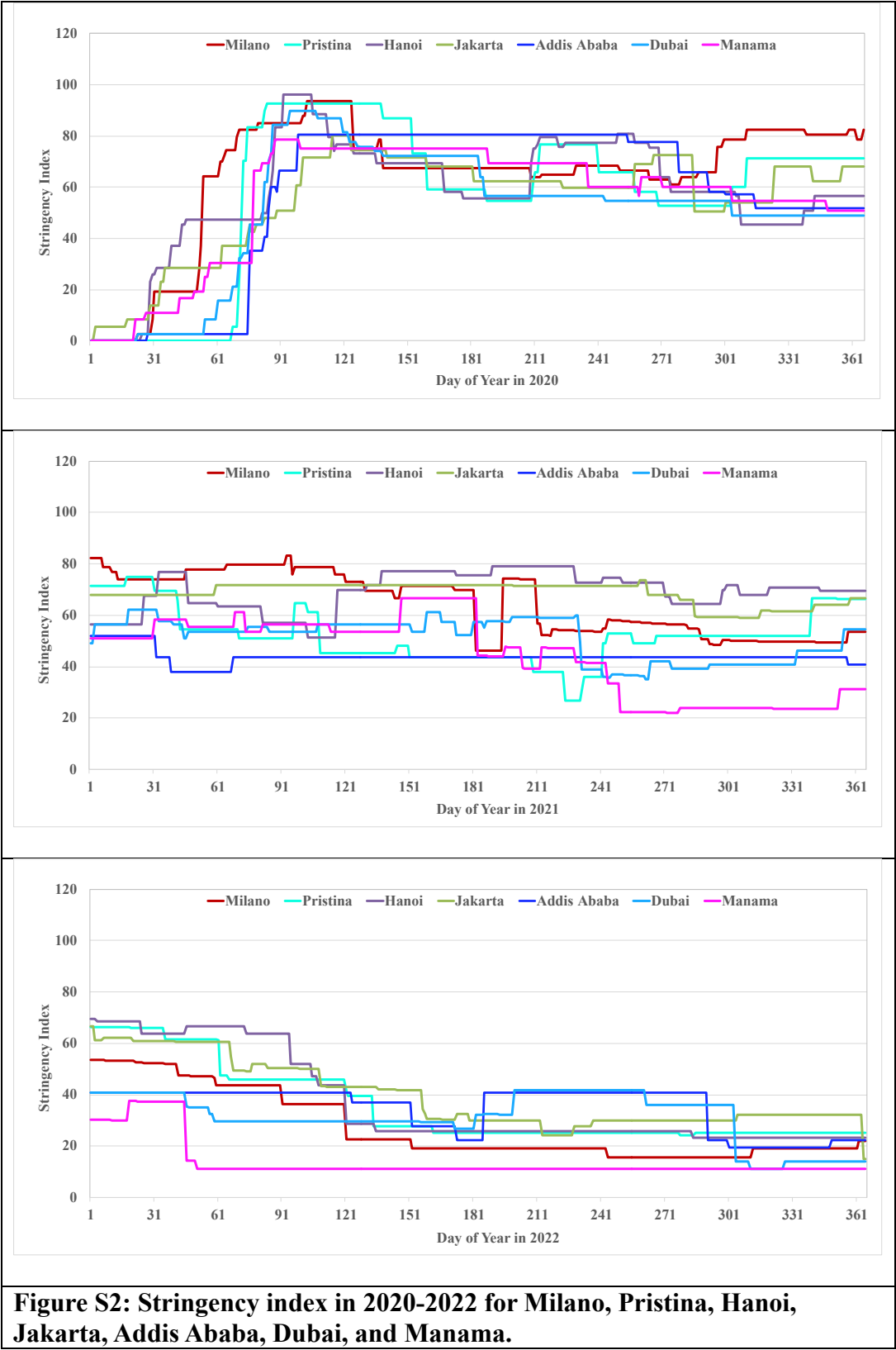
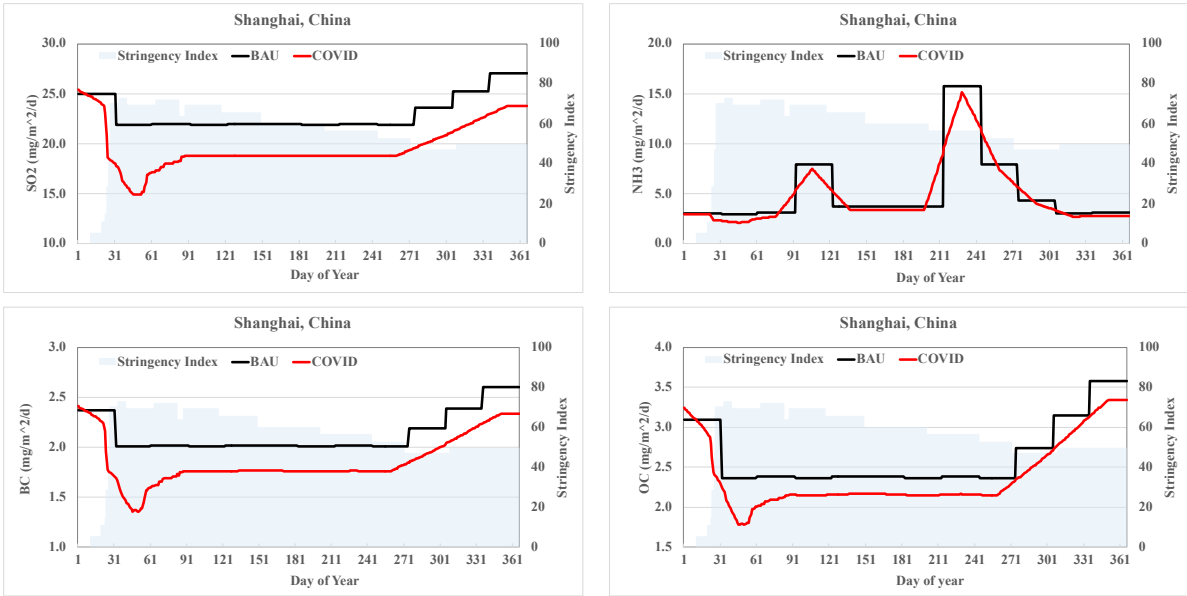
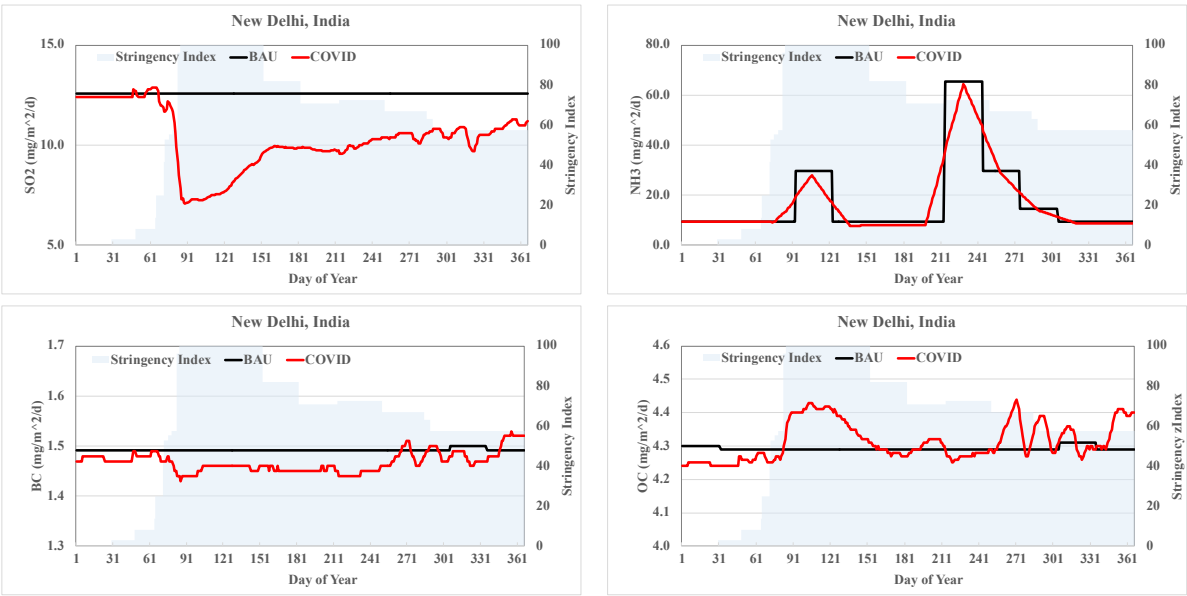


Figure S2: Stringency index in 2020-2022 for Milano, Pristina, Hanoi, Jakarta, Addis Ababa, Dubai, and Manama.

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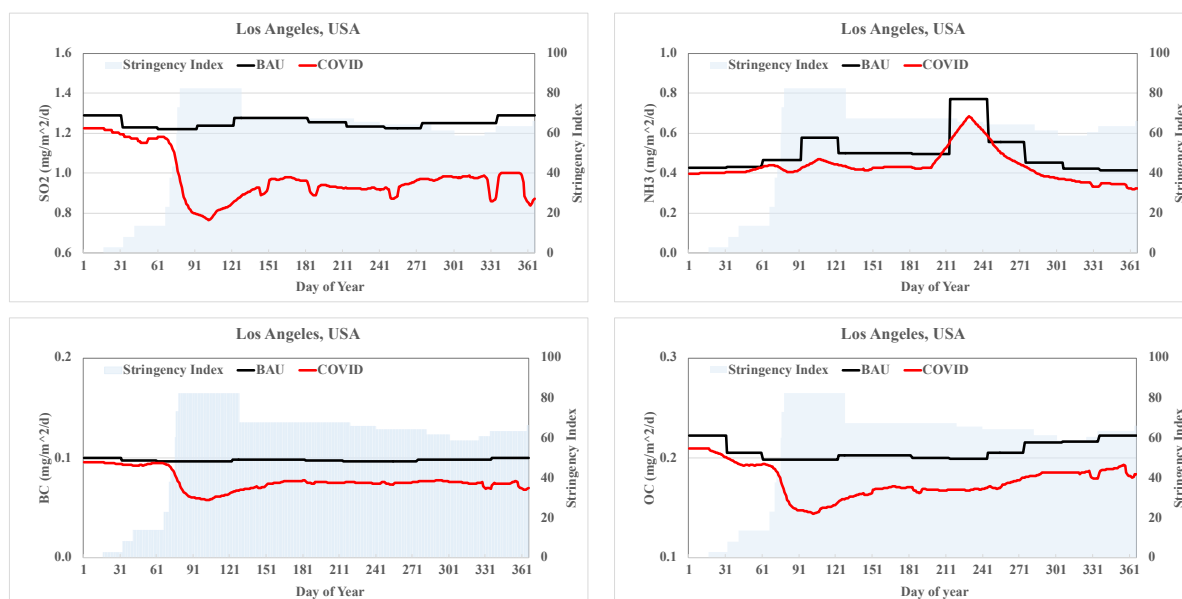


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36 **Figure S3: 2020 anthropogenic emissions of SO₂, NH₃, BC, and OC in Shanghai, China**
37 **used in the GEOS modeling for BAU (black) and COVID (red) scenarios, which is overlaid**
38 **on the stringency index.**
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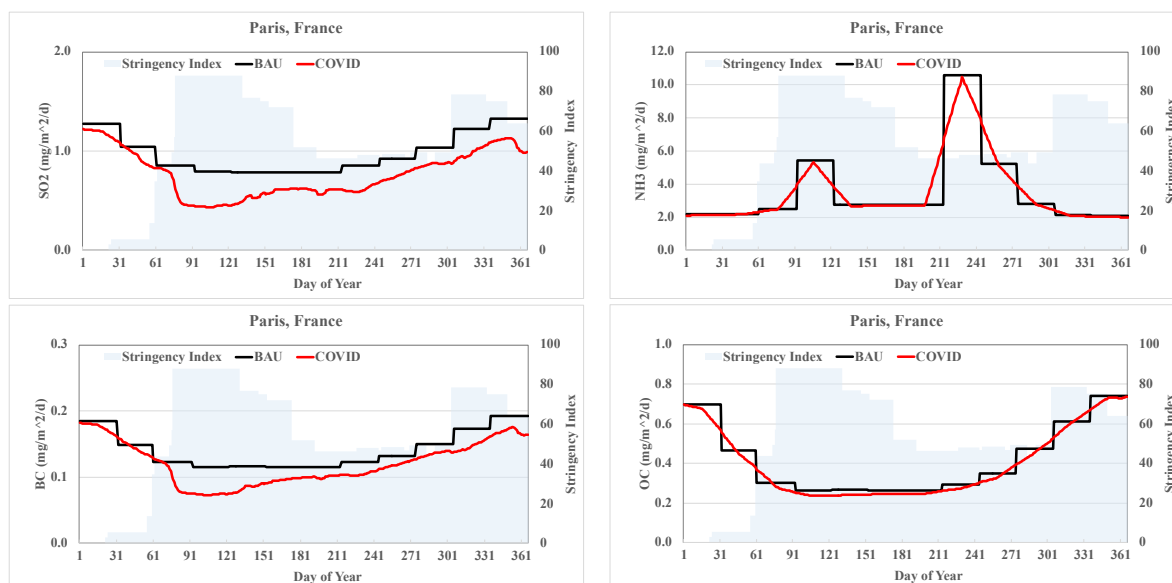
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42 **Figure S4: same as Figure S3 but for New Delhi, India.**
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Figure S5: same as Figure S3 but for Los Angeles, USA.



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Figure S6: same as Figure S3 but for Paris, France.

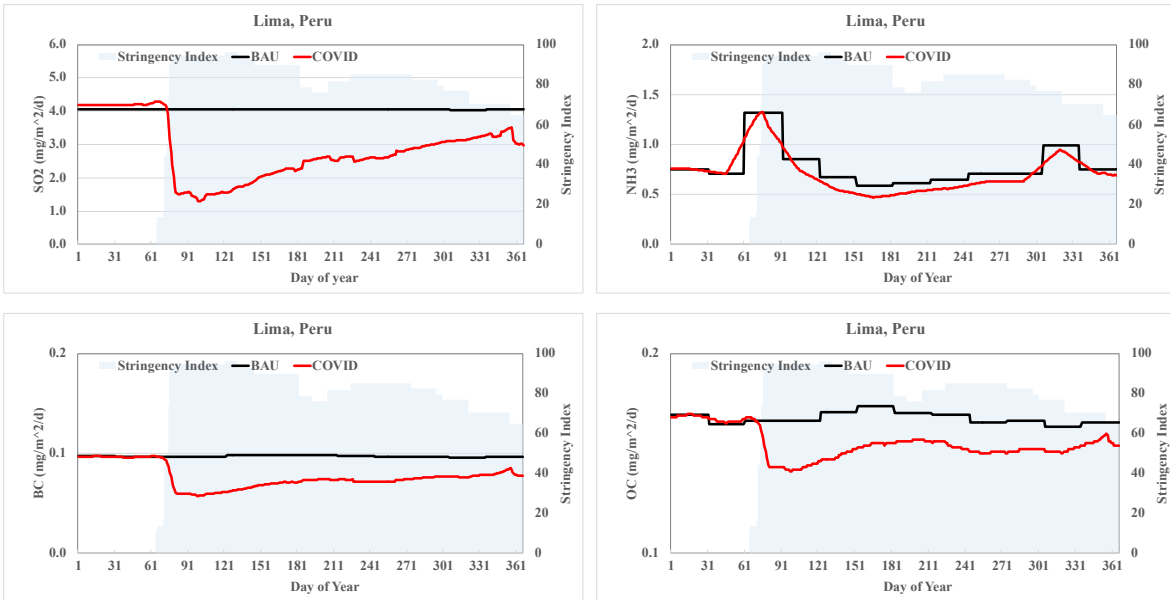


Figure S7: same as Figure S3 but for Lima, Peru.

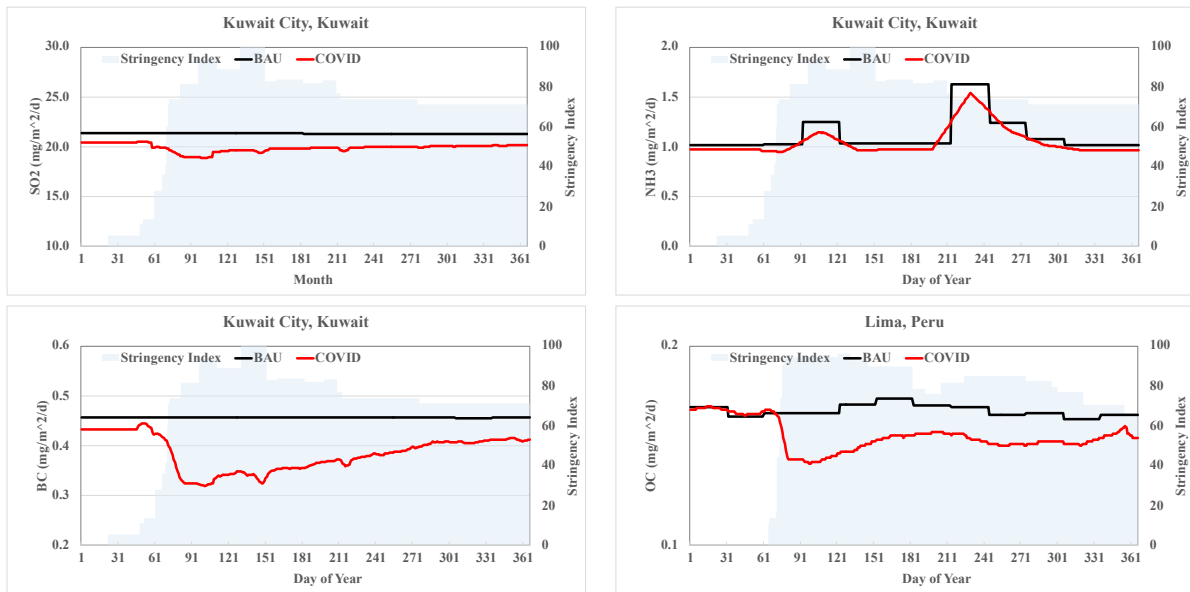


Figure S8: same as Figure S3 but for Kuwait City, Kuwait.