The Price of Quietness:

How a Pandemic Affects City Dwellers' Response to Road Traffic Noise

Online Appendix

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Table A1. Types of roads in Singapore in 2015

	Type of road	Road length in kilometres	Road width	Speed limit
1	Expressway	164	Six lanes and above	90 km/h
2	Main road	698	Four to six lanes	70 km/h
3	Collector road	578	Four lanes	50 km/h
4	Local road	3,496	Two lanes	30–50 km/h

Source: Singapore Land Transport Authority Website

Table A2. Singapore e-commerce revenue and proportion of the population who avoided going to work

	2019	2020	2021	2022
E-commerce revenue (USD in billions)	2.98	4.56	6.27	6.41
Working from home (Share of the population)	Not available	11%–54% (Peak on 23rd April, first circuit-breaker lockdown)	17%–41% (Peak on 3rd June, second circuit-breaker semi-lockdown)	15%–22% (Peak on 12th January)

Source: Statista.com

Table A3. Variable definitions

Variables	Definition
Rent	The monthly rent (S$) of a housing unit
COVID-19	A dummy variable with 1 indicating that a housing unit is transacted after 1 January 2020 and 0 otherwise
Treatment group	A dummy variable with 1 indicating that a housing unit is exposed to road traffic noise (in the treatment group) and 0 otherwise
	The cross term of *Road noise* and *COVID-19*
$Group_i$	A dummy variable with 1 indicating that a housing transaction falls into threshold zone i, i = 1…7, and 0 otherwise (see Section 4.1)
Size	The size of a housing unit (m^2)
Floor	The floor level of a housing unit in a building
Age	The age of a housing unit on the transaction date (year)
Year-month fixed	A set of dummy variables to control time-fixed effect
Housing type-fixed	A set of dummy variables to control housing type-fixed effect
District fixed	A set of dummy variables to control location-fixed effect
Distance to main road	Distance from a residential building to the nearest main road (metres)
Distance to expressway	Distance from a residential building to the nearest expressway (metres)
Distance to MRT station	Distance from a residential building to the nearest mass rail transit station (metres)
Distance to primary school	Distance from a residential building to the nearest primary school (metres)
Distance to central business district (CBD)	Distance from a residential building to the CBD (metres)
Distance to bus stop	Distance from a residential building to the nearest bus stop (metres)

Table A4. Empirical identification of the treatment and control groups

	(1)	(2)
Variables	Ln(Rent)	Ln(Rent)
	Full sample	Before the pandemic
$group_1$ 0–50 m	-0.024***	-0.012***
	(0.003)	(0.004)
$group_2$ 50–100 m	-0.016***	-0.004**
	(0.003)	(0.001)
$group_3$ 100–150 m	0.003	0.003
	(0.003)	(0.003)
$group_4$ 150–200 m	0.004	0.003
	(0.003)	(0.003)
$group_5$ 200– 250 m	-0.004	-0.005
	(0.003)	(0.004)
$group_6$ 250–300 m	0.003	0.002
	(0.004)	(0.004)
Size	0.001***	0.001***
	(0.000)	(0.000)
Floor	0.001***	0.001***
	(0.000)	(0.000)
Age	-0.002***	-0.002***
	(0.000)	(0.000)
Ln(Distance to expressway)	-0.003**	0.0001
	(0.001)	(0.003)
Ln(Distance to MRT station)	-0.045***	-0.045***
	(0.003)	(0.004)
Ln(Distance to CBD)	-0.051***	-0.068***
	(0.015)	(0.016)
Ln(Distance to primary school)	-0.0002	-0.001
	(0.003)	(0.003)
Ln(Distance to bus stop)	-0.001	-0.002
	(0.002)	(0.002)
Constant	7.893***	8.105**
	(0.160)	(0.161)

Year-month fixed	√	√
Housing type-fixed	√	√
District fixed	√	√
Obs	46,980	39,273
R^2	0.6189	0.6715

*Note: Values in parentheses are the clustered robust standard error of buildings. All variables are defined in Table 3. *p < 0.1 **p < 0.05 ***p < 0.01.*

Table A5. Results of the parallel trend test

Variables	Ln(Rent)
$Road\ noise \times relative\_time_i$	Full sample
i=-2	-0.008
	(0.007)
i=-1	-0.009
	(0.007)
i=0	-0.010
	(0.008)
i=1	-0.046***
	(0.008)
i=2	-0.124***
	(0.041)
i=3	-0.131***
	(0.050)
Treatment group	-0.002***
	(0.000)
constant	7.227***
	(0.033)
X control	√
Year-month fixed	√
Housing type-fixed	√
District fixed	√
Obs	46,981
R^2	0.3732

*Note: X control indicates a vector of control variables, including size, floor, age, ln(distance to expressway), ln(distance to MRT station), ln(distance to primary school), ln(distance to CBD) and ln(distance to bus stop). All variables are defined in Table 3a. *p < 0.1. **p < 0.05 ***p < 0.01.*

Table A6. WTP to noise level

	Rent (SGD)
	Distance to a main road (All sample)
Distance to a main road	0.014
	(0.021)
COVID-19 Distance to a main road*	0.352***
	(0.034)
COVID-19	1217.013***
	(52.967)
Constant	771.178***
	(138.817)
X control	√
Year-month fixed	√
Housing type-fixed	√
District fixed	√
Obs	46,980
R^2	0.5819

*Note: X control indicates a vector of control variables, including size, floor, age; ln(distance to expressway), ln(distance to MRT station), ln(distance to primary school), ln(distance to CBD) and Ln(distance to bus stop). All variables are defined in Table 3a. *p < 0.1. **p < 0.05 ***p < 0.01.*