Online Appendix (not for publication)

A Data

This section describes the data sources and variables used in our analysis, which are summarised in Table A1.

A.1 Mobility Data

We build a dataset allowing us to trace changes in the movement of people between February 15, 2020 and June 15, 2020. Our main source of mobility data are Google's Community Mobility Reports from which data are collected for 128 countries and US counties. The Mobility Reports provide daily data on Google Maps users who have opted-in to the "location history" in their Google accounts settings. The reports calculate changes in movement compared to a baseline, which is the median value for the corresponding day of the week during the period between the 3rd of January and the 6th of February 2020.[30] The purpose of travel has been assigned by Google to one of the following categories: retail and recreation, parks, groceries and pharmacies, transit stations, workplaces, and residential. The residential category measures the time users spend at a place labeled as residential. For the other categories Google provides the number of visits at a given place, irrespective of how long any single user spends at the place. Importantly, this categorisation allows us to distinguish between essential and non-essential movement. We deem mobility related to grocery and pharma to be essential travel, while parks as well as retail and recreation-which captures trends for places like restaurants, cafes, shopping centres, theme parks, museums, libraries, and movie theatres-are labelled as non-essential. We exclude the workplace category from our analysis as we are unable to distinguish between movement related to essential jobs and work that can be done from home.

Finally, because Google data are not available for China, information on movement in Chinese cities between January 1, 2020 and May 2, 2020 is taken from Baidu.[31] The variable

[30] In order to comply with privacy regulations, data in a particular place for a particular date might be missing.

[31] The data are downloaded from China Data Lab, 2020, "City Movement Intensity 0101-0502.tab", Baidu Mobility Data, Harvard Dataverse, V16

measures the number of people moving in a given day compared to the average number of people moving in the same day of the previous year.[32]

A.2 Policy

Our main source of data on daily mobility restrictions is the Oxford COVID-19 Government Response Tracker (OxCGRT) (Hale et al., 2020). OxCGRT is a novel dataset which is published by the Blavatnik School of Government at the University of Oxford. It contains various lockdown measures, such as school and workplace closings, travel restrictions, bans on public gatherings, and stay-at-home requirements.[33] Our baseline policy variable is a dummy value taking value 1 if the government either: i) requires not leaving home with exceptions for daily exercise, grocery shopping, and other "essential" trips; or ii) requires not leaving the home with minimal exceptions. Coding our variable this way allows for greater comparability across countries and at different levels of analysis.

We complement OxCGRT data with newly collected information on lockdown orders across US states and Chinese' provinces. For the US, we used online official sources and cross check them with news coverage in the New York Times and a statewide list provided by Littler Mendelson.[34] For China, lockdown dates are collected from Chinese news or Wikipedia. All cities in the Hubei province followed re-opening dates that were clearly stated by the government and reported in the news. However, for cities outside the Hubei province such dates were not always available. In such cases we used the date in which the Chinese transportation ministry announced to restart transportation across China.

A.3 Culture

To examine the role of culture, our main variables are based on the individualism-collectivism measure provided by Hofstede (2001). One advantage with this measure is that it has been

[32] Baidu data are potentially less accurate than mobility data from Google Mobility Report. However, Baidu is the only available source of information on mobility in China.

[33] Data on testing policy and contact tracing are also taken from OxCGRT. See Hale et al. (2020) for more details on the variables available.

[34] https://www.littler.com/publication-press/publication/stay-top-stay-home-list-statewide

widely used and validated in a number of studies.[35] We exploit country-level variation in individualism measures to construct the incidence of individualist cultural traits at the commuting zone-level in the United States (see 4.1).

For robustness, we also construct a measure of attitudes towards obedience and conformity (see Frey et al. (2020)), using data from the World Value Survey (WVS), which is based on face-to-face interviews and uniformly structured questionnaires (Inglehart and et al. (2014)). Since measures of individualism are not available for China, we follow a similar logic and use data on cultural tightness to proxy for obedience and conformity across Chinese provinces (see 5.1). Data on province-level cultural tightness are taken from Chua et al. (2019). The tightness measures at the provincial level are then mapped to Baidu's mobility data at the city-level.

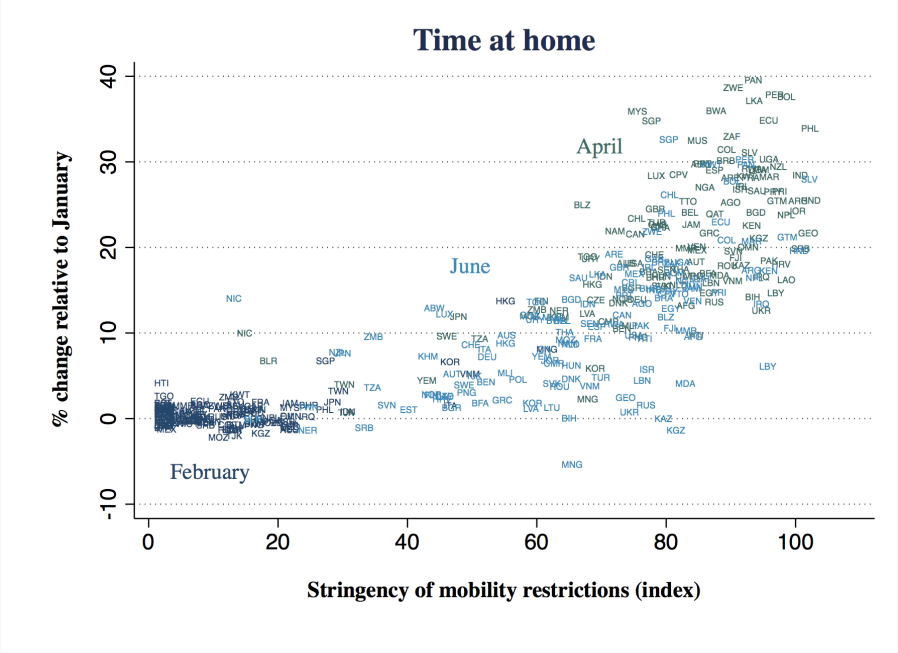
Table A1: Summary statistics.

Panel A: Mobility rates						
	N. of observations	Mean	Std. Dev.	25%	50%	75%
Countries						
Residential	15,853	12.84	10.93	3	12	20
Mobility	80,971	-25.45	30.23	-48	-23	-2
Essential	16,148	-16.24	23.01	-29	-11	1
Non-essential	32,325	-24.38	34.60	-49	-22	-2
United States, counties						
Residential	141,522	9.41	7.73	2	10	15
Mobility	936,899	-10.54	27.30	-29	-10	4
Essential	211,315	1.58	15.32	-7	2	10
Non-essential	299,937	-4.69	36.04	-28	-6	9
China, cities						
Mobility	39,237	80.09	23.27	65.46	87.92	96.57
Panel B: Cultural traits, Policy						
	N. of observations	Mean	Std. Dev.	25%	50%	75%
Countries						
Individualism (std)	102	0	1	-0.86	-0.40	0.87
Obedience (std)	108	0	1	-0.79	-0.04	0.68
Cellphone subscriptions per 100 people	178	111.10	38.98	89.58	113.14	132.16
GDP per capita ($)	195	15,905.37	23,588.84	2,137.69	6,330.08	19,275.42
Polity revised combined score	166	4.10	6.19	-1	7	9
United States						
Incidence of individualism, CZs (std)	722	0	1	-0.33	0.13	0.69
Incidence of obedience, CZs (std)	722	0	1	-0.55	0.10	0.38
Wage income, CZs ($)	722	23,702.84	5,011.76	20,336.90	22,962.57	26,218.53
China						
Cultural tightness, province (std)	29	0	1	-0.87	-0.16	0.58
GDP per capita, city (rmb)	279	60,926.01	3,4801.03	35,202	50,482	75,987

[35] For an overview, see Gorodnichenko and Roland.

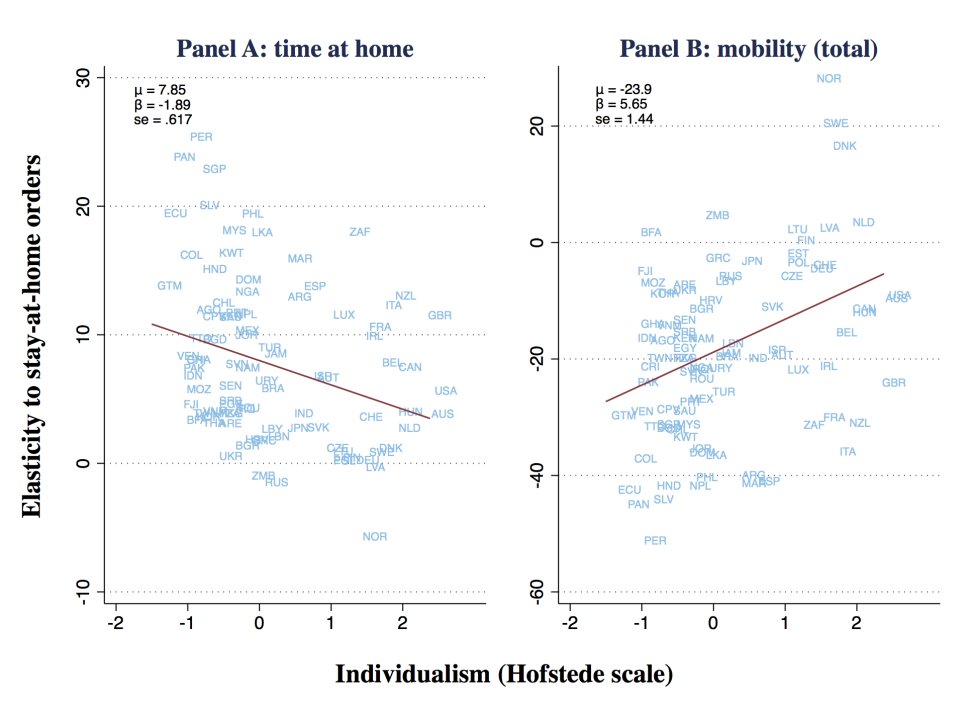
B Figures and Tables Appendix

Figure B1: Lockdown measures and cross-country differences in time spent at home.



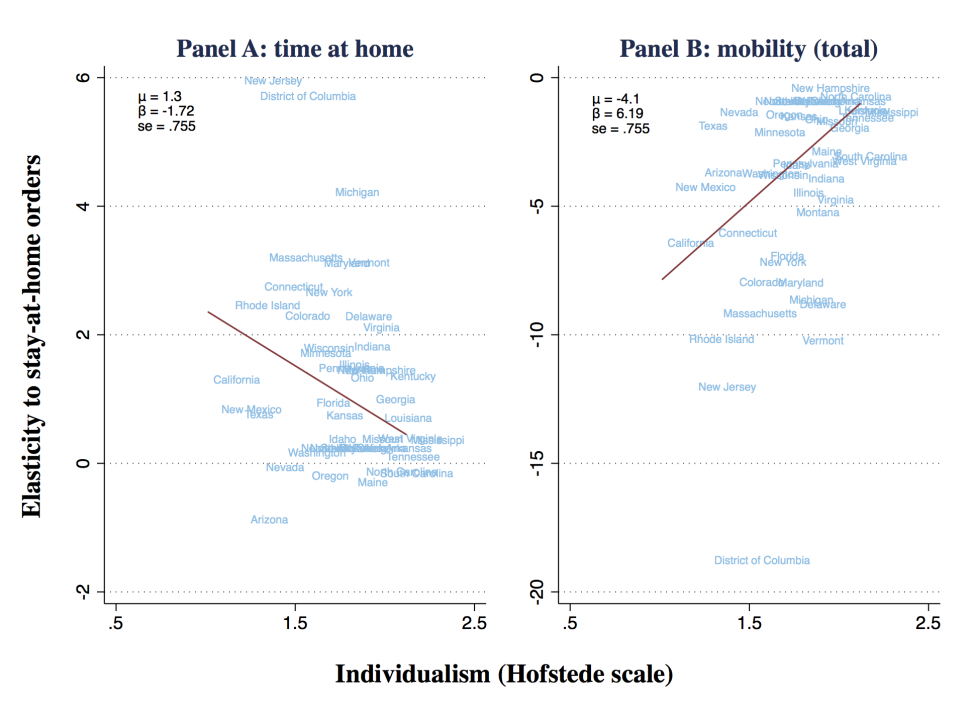
This figure shows the monthly average change in time spent at home on the vertical axis and the policy stringency index on the horizontal axis. See A.1 and A.2 for details on the variables used. Sources: OxCGRT; Google Community Mobility Reports

Figure B2: Individualism and policy compliance across countries.



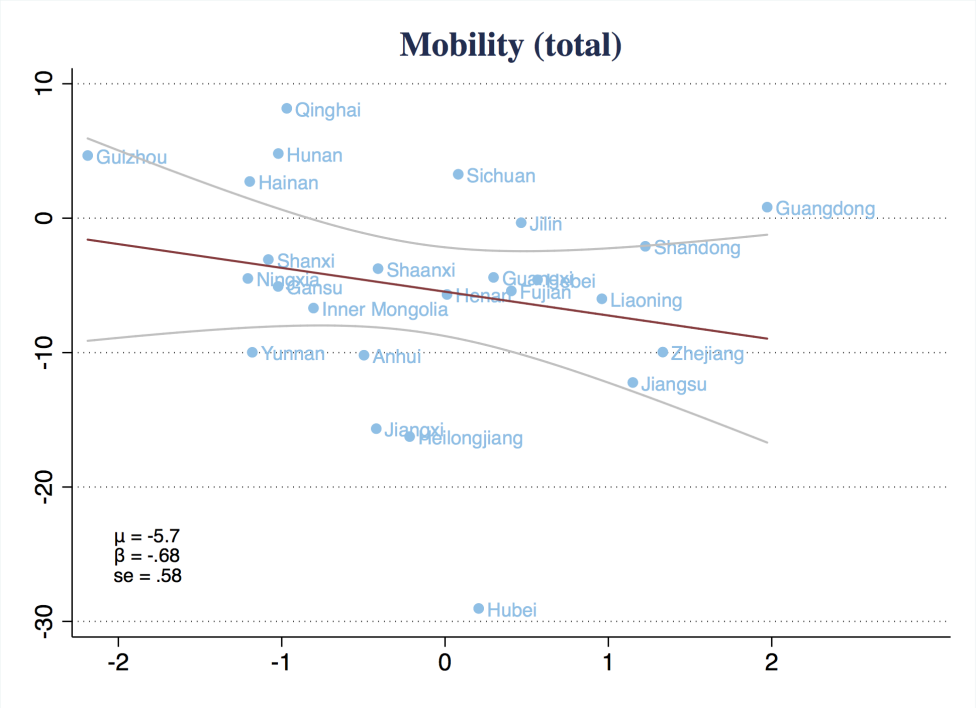
This figure shows individualism measures on the horizontal axis and the estimated elasticities of time spent at home (Panel A) and mobility (Panel B) to stay-at-home requirements on the vertical axis. Each panel reports the average elasticity (μ), the slope of the trend-line (β) and the associated standard errors (se). See 3.1 for details on the underlying econometric specification. Sources: authors' calculations based on OxCGRT, Google Community Mobility Reports and World Value Survey.

Figure B3: Individualism and policy compliance across the United States.



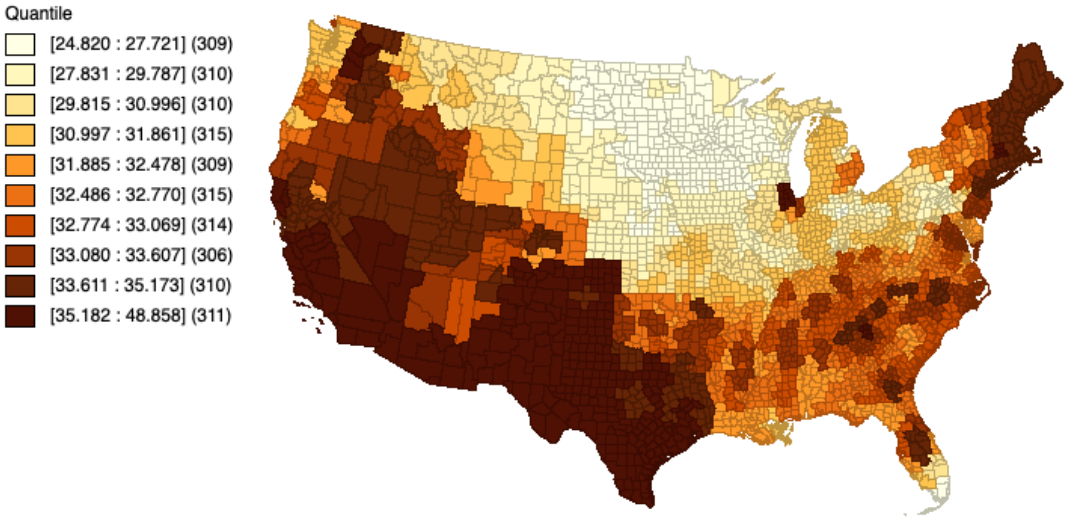
This figure shows individualism measures on the horizontal axis and the estimated elasticities of time spent at home (Panel A) and mobility (Panel B) to stay-at-home requirements. To improve readability, county-level estimated elasticities are averaged by state. Each panel reports the average elasticity (μ), the slope of the trend-line (β) and the associated standard errors (se). See 4.1 for details on the underlying econometric specification. Sources: authors' calculations based on OxCGRT, Google Community Mobility Reports and World Value Survey.

Figure B4: Cultural tightness and policy compliance across China.



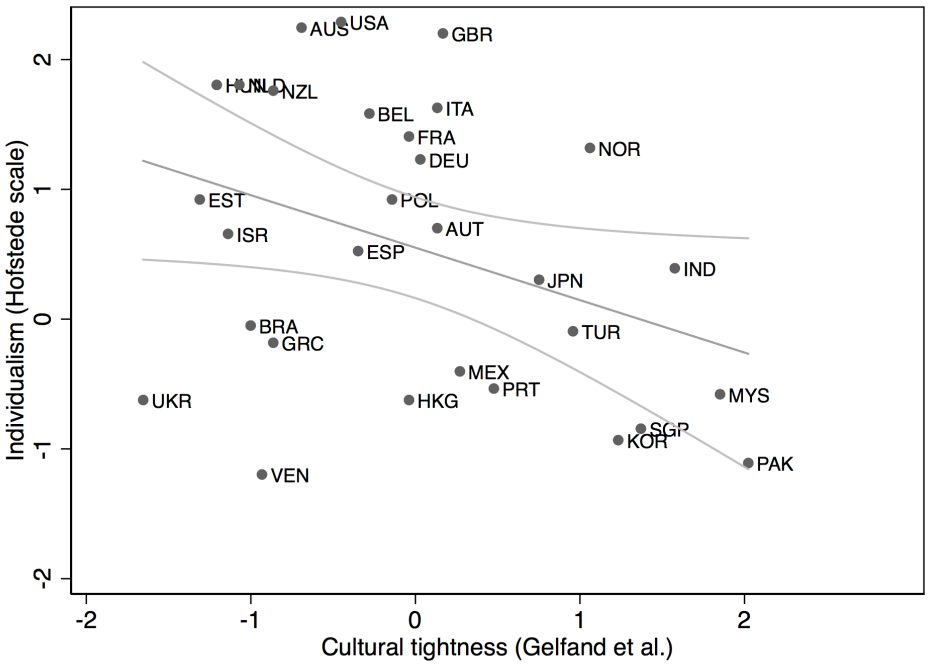
This figure shows tightness measures on the horizontal axis and the estimated elasticities of mobility to stay-at-home requirements. To improve readability, city-level estimated elasticities are averaged by province. It reports the average elasticity (μ), the slope of the trend-line (β) and the associated standard errors (se). See 5.1 for details on the underlying econometric specification, and A.1 and A.2 for details on the variables used. Sources: Baidu; authors' own calculations

Figure B5: Prevalence of obedience across US counties



The figure provides a graphic representation of how each county is positioned in the total distribution of the obedience measure (which varies at the commuting zone-level). Darker shades correspond to a higher incidence of obedience. Sources: authors' own calculations based on WVS; IPUMS USA; David Dorn's data page: https://www.ddorn.net/data.htm.

Figure B6: Individualism and cultural tightness across countries.



This figure shows the cultural tightness measurefrom Gelfand et al. (2011) on the horizontal axis and the individualism measurefrom Hofstede (2001) on the vertical axis. The grey bands around the trend line represent 95% confidence intervals. Sources: authors' own calculations based on Hofstede (2001) and Gelfand et al. (2011).

Table B1: Lockdowns, confirmed COVID-19 cases, and cultural traits across countries.

	(1) Pr(lockdown)	(2) Pr(lockdown)	(3) Pr(lockdown)	(4) Pr(lockdown)
Log-confirmed infections	0.759***	1.249***	0.841***	1.531***
	(0.199)	(0.237)	(0.199)	(0.338)
Log-confirmed infections x individualism	-0.062	-0.029		
	(0.078)	(0.099)		
Log-confirmed infections x obedience			0.045	0.028
			(0.093)	(0.122)
Observations	9,777	8,550	9,939	8,574
Country FE	yes	yes	yes	yes
Date FE	yes	yes	yes	yes
Policy x controls	no	yes	no	yes

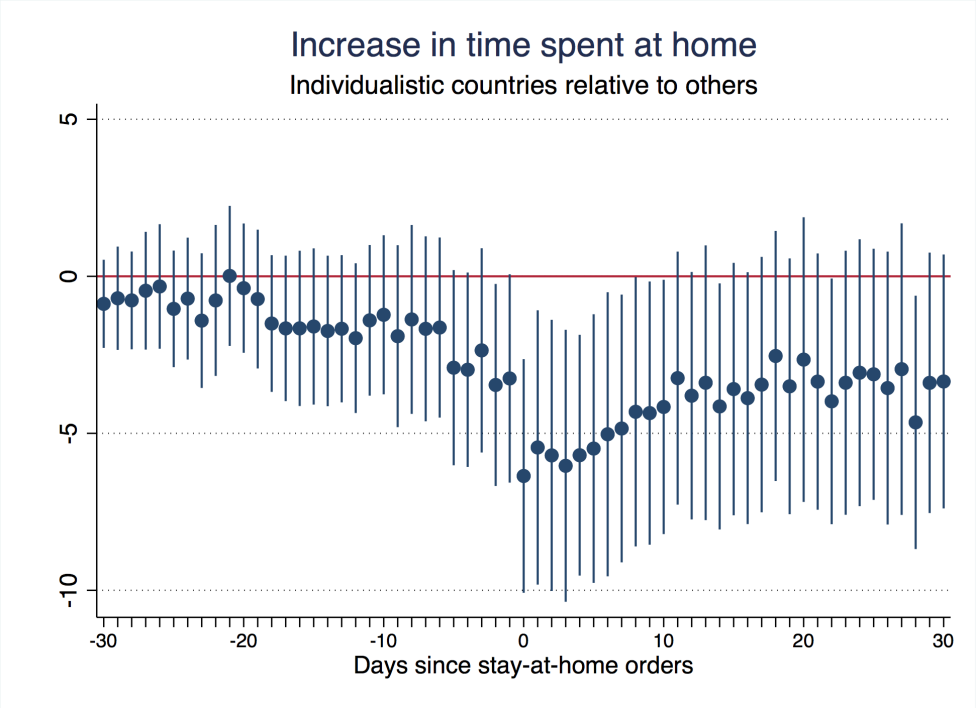
This table presents OLS estimates from regressing a dummy equal to 1 if a stay-at-home order is issued on the log of confirmed infection cases and cultural traits, using a probit model. Columns 2 and 4 include interactions between confirmed cases and: i) the logarithm of real GDP per capita; ii) the number of cellphone subscriptions in the total population; iii) a measure of democracy from Polity Project; and iv) dummy for experience with previous epidemics. The culture variables are normalised to have zero mean and unitary standard deviation. Errors are clustered at the country-level. The coefficients with *** are significant at the 1% level, with ** are significant at the 5% level, and with * are significant at the 10% level.

Table B2: Individualism and policy compliance across mobility categories and countries.

	(1) Mobility	(2) Mobility	(3) Mobility	(4) Essential	(5) Essential	(6) Essential	(7) Non-essential	(8) Non-essential	(9) Non-essential
Stay at home index	-17.441***	-17.134***	-9.820	-13.232***	-13.211***	-7.333	-19.867***	-20.387***	-9.736
	(1.781)	(2.071)	(7.389)	(1.340)	(1.588)	(5.461)	(2.113)	(2.801)	(9.920)
Stay at home index $\times$ individualism		4.717***	4.410**		3.352***	3.231*		7.434***	7.603***
		(1.423)	(2.208)		(1.096)	(1.680)		(1.918)	(2.781)
Observations	76,711	54,511	45,736	76,646	54,494	45,719	30,686	21,806	18,296
R-squared	0.717	0.718	0.724	0.691	0.694	0.738	0.703	0.708	0.725
Country-mobility category FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Date FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Policy x controls	no	no	yes	no	no	yes	no	no	yes

This table presents OLS estimates from regressing all mobility categories (except residential) (columns 1-3), mobility to grocery shops and pharmacies (columns 4-6), and mobility to parks, retail and entertainment (column 7-9). Country-level mobility is regressed on (the one day-lag of) a dummy taking value 1 if on a given day, the government imposed people to stay at home. Columns 3, 6 and 9 include interactions between the dummy and: i) the logarithm of real GDP per capita; ii) the number of cellphone subscriptions in the total population; iii) a measure of democracy from Polity Project; iv) a dummy for experience with previous epidemics; and v) the log-number of confirmed COVID-19 cases. Errors are clustered at the country-level. The coefficients with *** are significant at the 1% level, with ** are significant at the 5% level, and with * are significant at the 10% level.

Figure B7: Estimated coefficients from a country-level event study regression.



This figure shows graphically the estimated coefficients from an event study regression. The horizontal axis represents the days since the implementation of the stay home order across countries. We consider the time span ranging from 30 days before to 30 days after the official implementation of the policy. In the figure, each dot and its 95% confidence interval represent the estimated coefficient of the interaction between the day since policy implementation and a dummy variable equal to 1 if a country is labelled as individualistic. The regression controls for country and date fixed effects, and errors are clustered at the country-level. We define "individualistic" countries as those above the 75th percentile of the sample distribution.

Table B3: Accounting for lead values of the policy variable

	(1) Residential	(2) Residential	(3) Residential	(4) Residential	(5) Residential
Stay at home index	2.694	2.700	2.758	2.828	2.829
	(3.750)	(3.744)	(3.743)	(3.748)	(3.751)
Stay at home index × individualism	-2.254**	-2.294*	-2.202*	-2.201*	-2.232*
	(1.087)	(1.192)	(1.187)	(1.182)	(1.189)
Stay at home index (t+1) × individualism		0.060	-0.177	-0.109	-0.098
		(0.433)	(0.257)	(0.253)	(0.253)
Stay at home index (t+2) × individualism			0.180	0.152	0.312
			(0.455)	(0.297)	(0.254)
Stay at home index (t+3) × individualism				-0.031	-0.055
				(0.414)	(0.335)
Stay at home index (t+4) × individualism					-0.136
					(0.479)
Observations	9,177	9,093	9,008	8,923	8,838
R-squared	0.801	0.801	0.801	0.801	0.802
Country-mobility category FE	yes	yes	yes	yes	yes
Date FE	yes	yes	yes	yes	yes
Policy x controls	yes	yes	yes	yes	yes

This table presents OLS estimates from regressing time spent at home at the country-level on a dummy taking value 1 if on a given day the government imposed stay-at-home restrictions. It includes up to four days lead values of the policy indicator. All columns include interactions between the dummy and: i) the logarithm of real GDP per capita; ii) the number of cellphone subscriptions in the total population; iii) a measure of democracy from Polity Project; iv) a dummy for experience with previous epidemics; and v) the log-number of confirmed COVID-19 cases. Errors are clustered at the country-level. The coefficients with *** are significant at the 1% level, with ** are significant at the 5% level, and with * are significant at the 10% level.

Table B4: Obedience and policy compliance across countries.

	(1) Residential	(2) Mobility	(3) Essential	(4) Non-essential
Stay at home index	-1.959	0.857	-3.243	3.932
	(3.835)	(8.438)	(8.708)	(10.739)
Stay at home index × obedience	2.999***	-5.808***	-5.178***	-7.253***
	(0.673)	(1.613)	(1.456)	(2.275)
Observations	9,045	45,231	9,043	18,094
R-squared	0.805	0.721	0.629	0.723
Country-mobility category FE	yes	yes	yes	yes
Date FE	yes	yes	yes	yes
Policy x controls	yes	yes	yes	yes

This table presents OLS estimates from regressing time spent at home (columns1) all mobility categories (column 2), mobility to grocery shops and pharmacies (column 3), and mobility to parks, retail and entertainment (column 4) on (the one day-lag of) a dummy taking value 1 if on a given day the government imposed stay-at-home restrictions. All specifications include interactions between the dummy and: i) the logarithm of real GDP per capita; ii) the number of cellphone subscriptions in the total population; iii) a measure of democracy from Polity Project; iv) a dummy for experience with previous epidemics; and v) the log-number of confirmed COVID-19 cases. Errors are clustered at the country-level. The coefficients with *** are significant at the 1% level, with ** are significant at the 5% level, and with * are significant at the 10% level.

Table B5: Ancestor origin and policy compliance across mobility categories in the United States.

	(1) Mobility	(2) Mobility	(3) Essential	(4) Essential	(5) Non-essential	(6) Non-essential
Stay at home dates (state-level)	-3.055***		-3.360***		-3.192***	
	(0.566)		(0.677)		(0.952)	
Stay at home dates × individualism		1.230***		1.387***		1.523***
		(0.315)		(0.396)		(0.519)
Observations	914,201	914,201	205,548	205,429	291,884	291,884
R-squared	0.674	0.703	0.675	0.768	0.635	0.700
County-mobility category FE	yes	yes	yes	yes	yes	yes
Date FE	yes	yes	yes	yes	yes	yes
State-date FE	no	yes	no	yes	no	yes
Policy x log wages	no	yes	no	yes	no	yes

This table presents OLS estimates from regressing all mobility categories (columns1-2), mobility to grocery shops and pharmacies (column 3-4), and mobility to parks, retail and entertainment (columns 5-6) at the county-level, on (the one day-lag of) a dummy taking value 1 if on a given day the government imposed stay-at-home restrictions. Columns 2, 4 and 6 include interactions between the dummy and the logarithm of wage income per capita and state-date fixed effects. The individualism measure is obtained by summing up country-level measures weighted by the share of ancestors' country of origin. Errors are clustered at the state-level. The coefficients with *** are significant at the 1% level, with ** are significant at the 5% level, and with * are significant at the 10% level.

Table B6: Birthplace and policy compliance across mobility categories in the United States.

	(1) Residential	(2) Residential	(3) Residential	(4) Residential	(5) Residential
Stay at home dates (state-level)	1.295***	1.033***	0.777***		
	(0.199)	(0.189)	(0.173)		
Stay at home dates × individualism (birthplace)		-0.759***	-0.233	-0.666***	
		(0.186)	(0.149)	(0.140)	
Stay at home dates × obedience (birthplace)					0.285*
					(0.151)
Observations	139,009	139,009	139,009	138,847	138,847
R-squared	0.916	0.919	0.922	0.956	0.956
County FE	yes	yes	yes	yes	yes
Date FE	yes	yes	yes	yes	yes
State-date FE	no	no	no	yes	yes
Policy x log wages	no	no	yes	yes	yes

This table presents OLS estimates from regressing time spent at home at the county-level on (the one day-lag of) a dummy taking value 1 if on a given day the government imposed stay-at-home restrictions. Columns 3, 4 and 5 include interactions between the dummy and the logarithm of wage income per capita. Columns 4 and 5 include state-date fixed effects. The individualism measure is obtained by summing up country-level measures weighted by the share of individuals' birthplace. The obedience measure is derived analogously. Errors are clustered at the state-level. The coefficients with *** are significant at the 1% level, with ** are significant at the 5% level, and with * are significant at the 10% level.