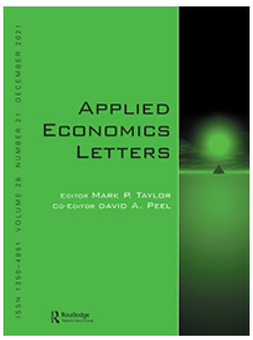

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ARTICLE

Legal origins and government COVID-19 control measures

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ABSTRACT
A speedy response made a significant difference to the number of infections and deaths due to COVID-19. Did legal philosophies matter for policy responses? We find that when 100 cases had been diagnosed (and 7–14 days thereafter), common law countries had implemented weaker measures than civil law countries. However, no significant difference is found for COVID-19 related deaths. Lower vulnerability is also associated with weaker policies.

KEYWORDS
Coronavirus; pandemic; legal system; legal origin; lockdown policy

JEL CLASSIFICATION
I18; K15

I. Introduction

The timing of governments interventions in the COVID-19 pandemic varied widely. This mattered greatly. As of 3 May 2020, 62% of infections and 55% of deaths could have been avoided in the US if control measures had been implemented one week earlier (Pei., Kandula, and Shaman 2020). Meanwhile, consumer spending and employment still declined sharply (Coibion, Goridnichenko, and Weber 2020). La Porta, Lopez-De-Silanes, and Shleifer (2008) argue that legal origins (LOs) reflect an approach to social control, where civil law favours a centralized government addressing market failures, while common law supports decentralization, markets, private contracts and litigation to solve social problems (see also Fredriksson and Sauquet 2017). LO theory provides the hypothesis that British common law countries should have implemented weaker COVID-19 policies than civil law countries. Related work on health issues appears to only include Anderson (2018) who studies the role of LOs for HIV outcomes.

Using the COVID-19 Government Response Stringency Index from Hale et al. (2020), we find that common law countries had a 0.81 standard deviation weaker policies than civil law countries measured the day of 100 cases, and 7–14 days thereafter. There was no significant difference in the response to deaths to COVID-19, however. Lower vulnerability also appears associated with less stringent policies.

II. Empirical specification and data

We estimate the following OLS specification:

$$stringency_c = \alpha + \alpha_r + \beta_1 commonlaw_c + \beta_2 controls_c + \in_c \quad (1)$$

where $stringency_c$ is the stringency index for government non-pharmaceutical intervention in country c, *commonlaw* equals unity common law is used, 0 otherwise. $\alpha_r$is a region fixed effect, *controls* a vector of country-specific controls, $\in_c$ robust standard errors.

Hale et al.'s (2020) stringency index utilizes eight indicators of government containment and closure policies (schools, workplace, public gatherings, etc) and one indicator of public information campaigns to create an average; see Table A1 in the Supplementary Online Appendix. Hale et al. report the COVID-19 policy stringency index for the day when 100 cases had been diagnosed, 7 and 14 days afterwards, as well as when 1, 10, or 100 deaths had occurred.

Klerman et al. (2011) classify LOs: common law (22 countries), mixed law (10), and a combined group of civil law countries (French (60), German (18), Scandinavian (4)). See Table A2 for a list of countries and stringency index data. Figure 1 reports distributions and averages of stringency

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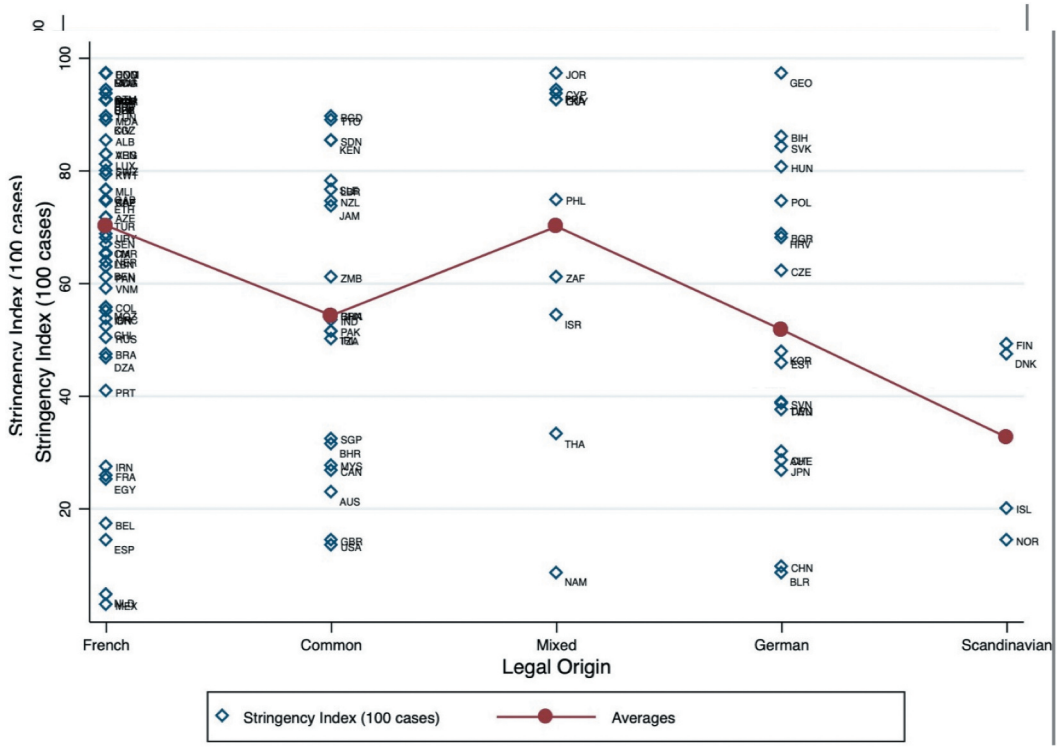

Figure 1. Distribution and average of the stringency index by legal origin.

by LO. Mixed law LO reflects countries where one legal system replaced another. Two outliers (Sweden, Uganda) with zero scores are excluded (including these leave the results unchanged; available upon request). Table A3 provides descriptive statistics. The Supplementary Online appendix also provides data description.

III. Empirical results

Table 1 presents OLS estimation results for the stringency index on common law LO. All columns include a dummy for mixed law LO and continent FE. French, German, and Scandinavian civil law LO is the excluded category. Column (1) includes only LO variables, (2) adds the baseline controls (absolute latitude, malaria ecology, %tropics, precipitation). (3) adds PCA_high_exposure, the first principal component of three measures that reflect risk exposure (Noy et al. 2020): population density, urbanization, net migration. Surprisingly, greater exposure appears to weaken stringency. (4) adds PCA_low_vulnerability, the first principal component of measures that reflect lower vulnerability (Noy et al. 2020): GDPpc(log), the negative of % population >65, negative of infant mortality rate/100 live births, number of hospital beds/1000 inhabitants, and health expenditures/GDP. Lower vulnerability reduces COVID-19 policy stringency. (5) adds PCA_high_resilience, the principal component of controls that capture resilience: life expectancy at birth, %internet users, mobile cell phone subscriptions, ratio (domestic credit provided to private sector)/GDP, government expenditures/GDP (Noy et al. 2020). PCA_high_resilience is negative and significant. Common law is negative and significant in (1)-(5).

Gitmez, Sonin, and Wright (2020) argue that income inequality affects social distancing compliance; (6) adds the GINI coefficient. Trade openness in (7) reflects trade dependency. Egorov et al. (2020) argue voluntary social distancing was greater where the population is less homogenous. Column (8) adds several fractionalization measures. Trust is significant and negative in (9). With greater trust, the population may engage in voluntary social distancing, which may be a substitute to strict government policies. The Scandinavian countries appear to contribute to this finding (see Figure 1). Note that adding trust raises the common law coefficient size. Poverty share and GDPpc(log) are included in

Table 1. Stringency index at 100 cases.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Common law	−13.02**	(−2.13)	−15.32**	−16.00***	−15.12**	−14.73**	−16.05**	−17.75***	−13.62**	−24.03***	−15.88**	−12.61**	−26.39**	−16.84**
			(−2.61)	(−3.16)	(−2.62)	(−2.26)	(−2.61)	(−3.00)	(−2.31)	(−3.43)	(−2.51)	(−2.37)	(−2.62)	(−2.34)
−22.06***(−3.95)														
Mixed law	1.71	−0.19	−1.51	17.70*(1.69)	−1.41	0.70(0.05)	−0.69	2.24(0.20)	−0.72	−2.48	7.10(0.68)	12.21(0.76)	13.14(1.09)	19.02*(1.81)
	(0.15)	(−0.02)	(−0.13)		(−0.10)		(−0.06)		(−0.08)	(−0.19)				
PCA_high_exposure			−10.76***									−4.83	−7.80	−8.41
			(−3.85)									(−0.35)	(−0.58)	(−1.21)
PCA_low_vulnerability				−10.00***								−9.32*		−9.32***
				(−5.61)								(−1.70)		(−2.76)
PCA_high_resilience					−8.02***							0.88(0.09)	3.85(0.46)	−2.83
					(−2.75)									(−0.46)
GINI index						−0.67						−0.97	0.11(0.13)	−0.41
						(−1.27)						(−0.98)		(−0.62)
Trade openness							0.05(1.04)					0.07(0.46)	0.04(0.30)	0.11(1.45)
Ethnic fractionalization								24.55(1.59)				2.79(0.14)	5.06(0.29)	−13.68
														(−0.78)
Religious								−14.53				2.01(0.07)	−5.70	16.24(1.00)
fractionalization								(−1.18)					(−0.32)	
Linguistic								−21.98				−15.56	−15.54	−15.80
fractionalization								(−1.63)				(−0.57)	(−0.63)	(−1.17)
Trust									−1.25***			−0.76*	−0.59*	
									(−5.77)			(−1.81)	(−1.91)	
Poverty share										0.26(1.29)		0.62(0.97)		−0.06
														(−0.19)
GDPpc(log)											−11.36***		−17.66**	
											(−4.86)		(−2.08)	
Baseline controls	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	114	114	112	102	92	99	112	105	79	99	113	54	57	70
Adj. R^2	0.13	0.13	0.21	0.23	0.17	0.13	0.13	0.14	0.27	0.13	0.28	0.20	0.31	0.27

Notes: OLS estimations of the stringency index at 100 confirmed COVID-19 cases on common law LO. Baseline controls: absolute latitude, malaria ecology, %tropics, precipitation. Continent FE included in all columns. All regressions include a constant, not reported. Standard errors clustered at the continent level. *t*-statistics in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table 2. Robustness analysis: Stringency index.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	7 days after 100 cases	14 days after 100 cases	At 100 cases	At 100 cases	At 100 cases	At 1 death	At 10 deaths	At 100 deaths
Common law	−18.76***(−3.10)	−12.50**(−2.42)	−17.34**(−2.54)	−14.29*(−1.90)		−7.94(−1.05)	−10.55(−1.30)	−5.58(−0.52)
Mixed law	3.36(0.42)	−0.97(−0.17)	−0.54(−0.04)	2.49(0.21)		1.13(0.07)	0.70(0.08)	5.46(1.07)
PCA_high_exposure	−8.06***(−2.69)	−7.71***(−3.00)	−7.70(−1.15)	−2.54(−0.52)	−6.99(−1.56)	−2.98(−0.55)	−1.43(−0.31)	−4.27(−0.57)
PCA_low_vulnerability	−7.52***(−3.30)	−7.83***(−3.99)	−6.32(−1.19)	−8.28*(−1.87)	−9.64***(−4.01)	−7.30*(−1.87)	−6.35**(−2.55)	−4.10(−1.39)
PCA_high_resilience	3.64(1.15)	7.26**(2.45)	4.90(0.95)	1.69(0.36)	3.49(0.91)	3.78(0.72)	3.03(0.89)	4.55(0.85)
Common law (La Porta et al.)					−12.80**(−2.19)			
Sample	Global	Global	Former colonies	Non-OECD	Global	Global	Global	Global
Observations	84	82	41	56	83	85	76	48
Adj. R^2	0.34	0.31	0.14	0.03	0.28	−0.02	0.04	0.04

Notes: The table presents OLS estimations of stringency index days after, or at, 100 confirmed COVID-19 cases on common law LO. All columns include baseline controls, continent FE and constant (not reported). Column (5) uses the La Porta, Lopez-De-Silanes, and Shleifer (2008) LO classification. See Table 1 notes. Standard errors clustered at continent level. *t* statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3. Robustness analysis non-European sample: Stringency index at 100 confirmed cases.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Common law	−12.22*	−14.87**	−16.43***	−12.62*	−14.12*	−17.30**	−17.46**	−12.65*	−21.73***	−16.36**	−13.22**	−20.82	−16.47	−19.80**
	(−1.81)	(−2.23)	(−2.77)	(−1.94)	(−1.75)	(−2.39)	(−2.62)	(−1.87)	(−2.75)	(−2.23)	(−2.28)	(−1.64)	(−1.43)	(−2.78)
Mixed law	1.88(0.17)	0.32(0.03)	−0.73	19.31*	−1.28	3.99(0.30)	0.12(0.01)	3.22(0.27)	0.27(0.03)	−0.46	6.13(0.57)	16.33	17.62	25.18*(1.82)
			(−0.06)	(1.80)	(−0.09)					(−0.03)		(0.72)	(1.14)	
PCA_high_exposure			−7.50***									9.29(0.51)	10.66	−5.71
			(−2.90)										(0.55)	(−0.58)
PCA_low_vulnerability				−8.43***								−6.00		−7.38
				(−5.41)								(−0.87)		(−1.45)
PCA_high_resilience					−5.54*							−3.99	−0.63	−4.10
					(−1.69)							(−0.34)	(−0.05)	(−0.45)
GINI index						−0.83						−2.14	−1.03	−0.74
						(−1.43)						(−1.65)	(−0.97)	(−0.94)
Trade openness							0.02(0.40)					0.13(0.46)	0.04(0.13)	0.14(0.97)
Ethnic fractionalization								15.87(1.00)				5.14(0.15)	3.21(0.10)	−12.58
														(−0.58)
Religious								−21.83				−22.53	−16.84	10.48(0.43)
fractionalization								(−1.58)				(−0.71)	(−0.90)	
Linguistic								−9.60				19.77	26.58	−1.67
fractionalization								(−0.69)				(0.66)	(0.79)	(−0.09)
Trust									−1.23***			−1.01	−0.91	
									(−4.38)			(−1.54)	(−1.44)	
Poverty share										0.26(1.27)		0.64(0.79)		−0.03
														(−0.06)
GDPpc(log)											−9.55***		−17.69	
											(−4.11)		(−1.05)	
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	84	84	82	74	62	69	82	78	57	69	83	35	36	45
Adj. R^2	0.06	0.07	0.12	0.18	−0.00	0.07	0.07	0.06	0.23	0.05	0.18	0.01	0.10	−0.01

Notes: See Table 1.

(10) and (11), respectively. These measures account for the possibility that lower income countries, with a large fraction of the population living in poverty, may be more reluctant to impose regulations. Column (12) adds all controls except GDPpc(log), which is excluded due to the high correlation with poverty share. Column (13) reverses this pattern, while also dropping PCA_low_vulnerability which already includes GDPpc(log). Column (14) instead drops trust, which raises the number of observations.

Common law legal origin is consistently negative and significant in Table 1, lending support to our hypothesis. The effect appears economically significant. For example, column (14) suggests that common law LO is associated with 0.81 standard deviation less stringent COVID-19 policies than civil law countries. Low vulnerability is insignificant in (12) and (14), perhaps due to lower variation in these small samples.

IV. Robustness analysis

Table 2 utilizes the continent FE, baseline controls, measures of exposure, vulnerability, and resilience, and alternative stringency measures. Columns (1) and (2) use the stringency index 7 and 14 days after 100 cases, respectively. Column (3) restricts the sample to former colonies, where the LO was established exogenously due to colonization and conquest (La Porta, Lopez-De-Silanes, and Shleifer 2008). Column (4) includes only non-OECD countries. Column (5) employs an alternative classification by La Porta, Lopez-De-Silanes, and Shleifer (2008) which does not include mixed law LO. Common law is associated with a weaker policy response than civil law countries in Table 2. Lower vulnerability is also associated with less stringent policies.

Table 3 replicates Table 1 but utilizes only non-European countries. This reduces possible concerns about the endogeneity of the LOs. The European powers designed LOs, transmitted them to the rest of the world by colonization, conquest, or historical accident (McNeill and McNeill 2003). LOs have persisted as legal thinking has evolved in recipient countries. Common law remains negative and significant in all columns, except (12)-(13) with small sample sizes.

V. Conclusion

This paper tests and finds support for the hypothesis that common law legal origin countries implemented weaker response to the COVID-19 pandemic than civil law countries. Low vulnerability also appears associated with less stringent policies. These findings may facilitate predictions of the response to and effects of future pandemics.

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Disclosure statement

No potential conflict of interest was reported by the authors.

Data availability

The data that support the findings of this study are available from the corresponding author, Per Fredriksson, upon request.

Supplementay material

Supplemental data for this article can be accessed here.

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