Corruption risks in the public procurement of health-related products in Europe

LSE Workshop on Corruption and Conflicts of Interest in Healthcare

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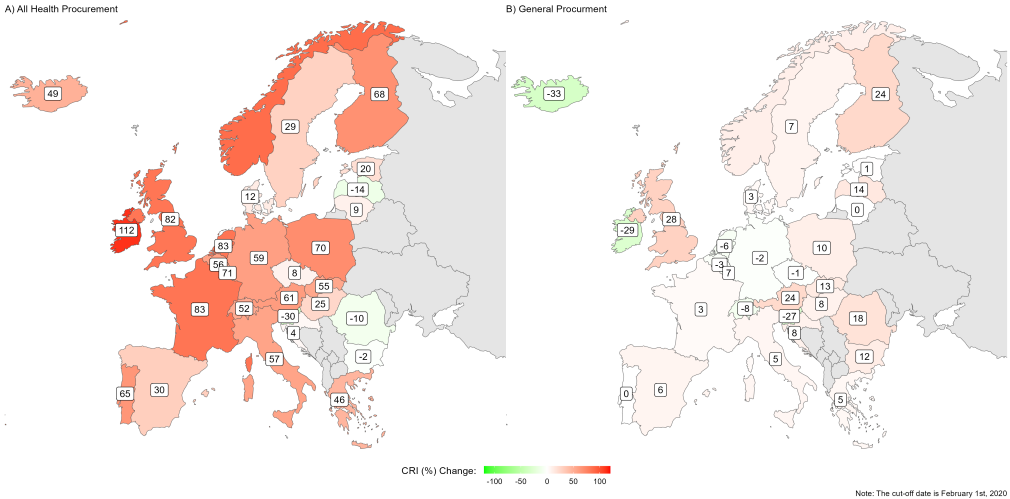
Objectives

Throughout the pandemic, governments in Europe and around the world were faced with the immense challenges of the COVID-19 pandemic. In addressing them, they mobilized large amounts of resources in a short time. This was necessary to save lives, but it also created opportunities for corrupt transactions.

- Did COVID-19 policies affect corruption risks (measured by CRI) in public procurement? Was there any variation across geographies and product types?
- If so, was there any spillover in CRI scores between COVID-19 related purchases and other types of procurement?
- Which factors mitigated or increased these spillovers?

Before-After Map



Note: The cut-off date is February 1st, 2020

Hypotheses

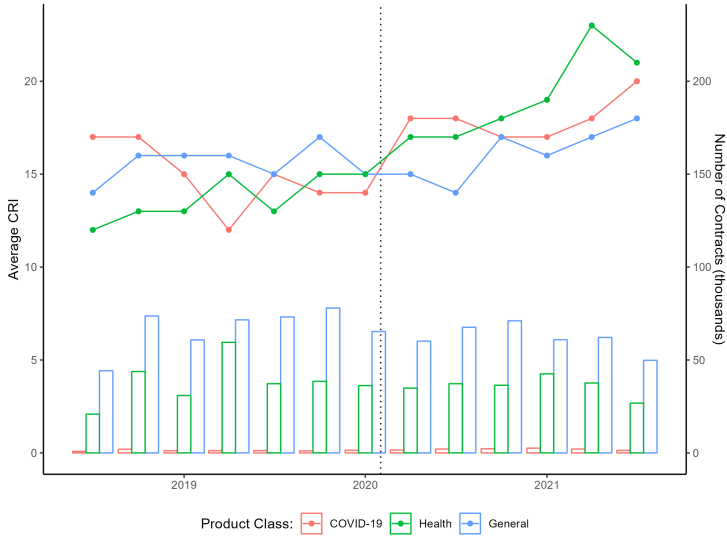
- H1 (Spending Policies): corruption risks increase with the enactment of new spending policies.
- H2 (Institutional Policies): Policies centralizing political control during the COVID-19 pandemic increase corruption risks in countries with above-average pre-pandemic corruption risks.
- H3 (Limited spillover): An increase in corruption risks in COVID-19-related products in t_0 leads to higher corruption risks in health-related goods in t_1.
- H4 (Full spillover): An increase in corruption risks in health-related products in t_0 leads to higher corruption risks in general public procurement in t_1.

COVID-19 Product CRI

CPV Code	Description
45215142	Intensive-care unit construction work
33631600	Antiseptics and disinfectants
33191000	Sterilization, disinfection, and hygiene devices
33191100	Sterilizer
33191110	Autoclaves
33192120	Hospital beds
33157000	Gas-therapy and respiratory devices
33157100	Medical gas masks
33157110	Oxygen mask
33157200	Oxygen kits
33157300	Oxygen tents
33157400	Medical breathing devices
33157500	Hyperbaric chambers
33157700	Blow bottle
33157800	Oxygen administration unit
33157810	Oxygen therapy unit
39330000	Disinfection equipment
35113400	Protective and safety clothing
33157110	Oxygen mask
33157400	Medical breathing devices
33694000	Diagnostic agents
33141420	Surgical gloves
33195110	Respiratory monitors
33670000	Medicinal products for the respiratory system
33673000	Medicinal products for obstructive airway diseases
33674000	Cough and cold preparations
33675000	Antihistamines for systemic use
18143000	Protective gear
18424300	Disposable gloves

Variable name
Single bidding
Use of non-open procedures
Call for tender document not published
Length of submission period
Length of decision period
Benford's law
Supplier registered in a tax haven
Buyer dependence on supplier
Supplier without experience
Supplier switched market

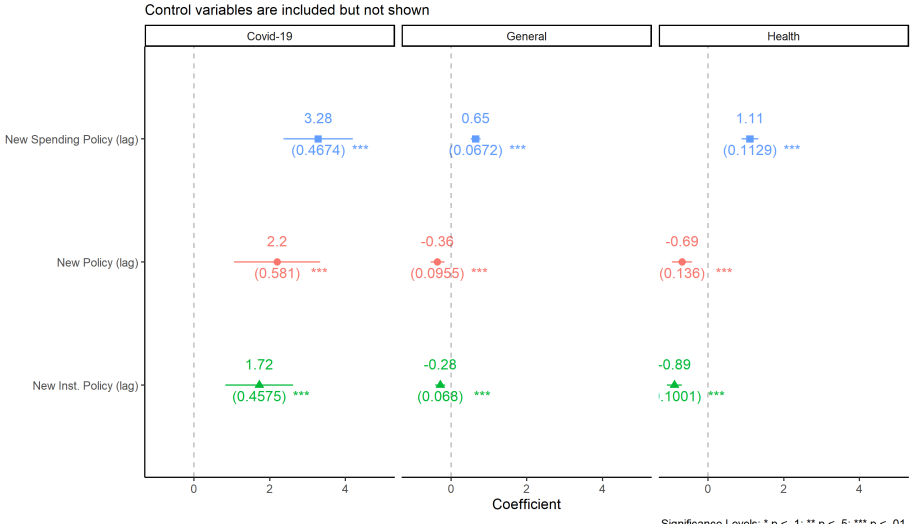
CRI Trends by Product Type



COVID-19 Policy Classification

Institutional Policies	Spending Policies
Activate or establish emergency response	Increase healthcare workforce
Work safety protocols	Enhance laboratory testing capacity
Surveillance	Secure future access to anti-Covid19 medication and vaccine
Police and army interventions	Increase isolation and quarantine facilities
Measures to ensure security of supply	Increase patient capacity
Special measures for certain establishments	Increase in medical supplies and equipment
	Enhance detection system
	Increase availability of PPE
	Provide international help
	Repurpose hospitals

Policy Effects on CRI (H1)



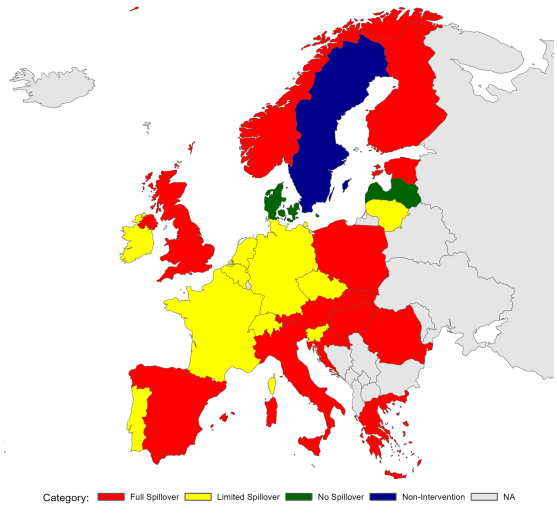
Spending Policies Regressions (H2)

	Dependent variable:		
	Health CRI (1)	Covid CRI (2)	All Non-Health CRI (3)
Health High-Risk + Spending P.	1.924***		
	(0.234)		
Covid-19 High-Risk + Spending P.		7.304***	
		(1.079)	
General High-Risk + Spending P.			-0.801***
			(0.140)
Constant	1,611.818***	-1,616.729	2,609.641***
	(438.352)	(2,202.715)	(309.668)
Observations	139,925	6,739	254,409
R^2	0.136	0.249	0.186
Adjusted R^2	0.136	0.243	0.186
Residual Std. Error	11.413 (df = 139875)	11.081 (df = 6691)	12.016 (df = 254358)
F Statistic	451.151*** (df = 49; 139875)	47.077*** (df = 47; 6691)	1,160.165*** (df = 50; 254358)
Note:			*p<0.1; **p<0.05; ***p<0.01

Institutional Policies Regressions (H2)

	Dependent variable:		
	Health CRI (1)	Covid CRI (2)	General CRI (3)
Health High-Risk + Inst. Policy	-1.539*** (0.217)		
Covid-19 High-Risk + Inst. Policy		3.741*** (1.023)	
General High-Risk + Inst. Policy			-0.016 (0.128)
Constant	1,807.407*** (438.683)	-1,703.651 (2,223.197)	2,797.035*** (308.484)
Observations	139,925	6,739	254,409
R^2	0.136	0.241	0.185
Adjusted R^2	0.136	0.236	0.185
Residual Std. Error	11.415 (df = 139875)	11.137 (df = 6691)	12.019 (df = 254358)
F Statistic	450.355*** (df = 49; 139875)	45.183*** (df = 47; 6691)	1,157.496*** (df = 50; 254358)
Note:			*p<0.1; **p<0.05; ***p<0.01

CRI Spillovers in Europe



CRI Spillovers Regressions (H3 & H4

	Dependent variable:		
	Health CRI	Covid-19 CRI	All Non-Health CRI
	(1)	(2)	(3)
CRI Covid (lag)	1.344**	-3.011	
	(0.651)	(2.533)	
CRI Health (lag)			4.162***
			(0.482)
Constant	2,054.948***	982.834	1,043.661***
	(223.563)	(866.151)	(133.390)
Observations	215,255	10,795	397,887
R^2	0.182	0.185	0.204
Adjusted R^2	0.182	0.181	0.204
Residual Std. Error	12.238 (df = 215199)	11.407 (df = 10740)	12.110 (df = 397829)
F Statistic	872.329*** (df = 55; 215199)	45.109*** (df = 54; 10740)	1,787.626*** (df = 57; 397829)
Note:			*p<0.1; **p<0.05; ***p<0.01

Summary of Results

- We find strong support for H1, new spending policies are associated with increased corruption risks.
- We find mixed support for H2, new policies that increase political control are associated with higher CRI scores. Whereas new spending policies increase corruption risks across all three procurement categories, new institutional policies only consistently increase CRI scores for COVID-19 related procurement.
- Regarding H3 and H4, on limited and full spillovers, we find that increases in the CRI of COVID-19 related procurement predicts an increase in CRI in General Health in the following month, and that an increase in General Health CRI is associated with increases in non-health corruption risks also with a one-month lag.

Limitations

- Data for policy tracking is rather coarse, we do not know when and if the policy ends. Procurement specific-policies (e.g. Poland) might prove to be a better fit.
- The structure of public procurement might have changed, different products within health or general categories might have changed.
- CRI captures risks of corruption based on barriers to competition only.
- Our time series is rather short (18 months), longer observation period might give insight into a return-to-mean dynamic.

Thank you!