Online Appendix

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1 Alternative Regime Classifications

1.1 Alternative Regime Cutpoints

In the main text, we classified regime types using the V-Dem Polyarchy index. Following Kasuya and Mori (2019), we defined the cutpoint between autocracy and democracy as 0.42. Readers may wonder whether the results are sensitive to the choice of cutpoint. In Table 1, using the $1 million treatment threshold, we specify cutpoints of 0.33, 0.5, and 0.6, as well as a Polity score of 0. The results with a cutpoint of 0 on the Polity scale and 0.33 and 0.5 on the Polyarchy index are substantively identical to the results in the main text. The results with a cutpoint of 0.6 are similar but weaker in magnitude, since the expanded cutpoint aggregates closed autocracies with countries between 0.5 and 0.6 on the Polyarchy index. This consistency suggests that the results in the main text are robust to arbitrary changes in regime classifications.

1.2 Alternative Classification Schemes

Next, we confirm that the results in the main text are substantively unchanged with an alternative regime classification scheme. Boix, Miller and Rosato (2007) classify regimes dichotomously, as autocracies or democracies, based on their levels of contestation (free and fair elections) and participation (a suffrage threshold). The results appear in Tables 2 and 3, and are essentially identical to those in the main text.

Table 1: Generalized Synthetic Control Method (Alternative Regime Cutpoints)

	Autocracies			
	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Cutpoint: Polyarchy < 0.33				
Transfer ≥ $1,000,000	0.395^{***}	0.378^{***}	0.210^{***}	0.168^{*}
	(0.120)	(0.125)	(0.069)	(0.093)
Cutpoint: Polyarchy < 0.5				
Transfer ≥ $1,000,000	0.357^{***}	0.398^{***}	0.394^{**}	0.173^{*}
	(0.102)	(0.103)	(0.178)	(0.091)
Cutpoint: Polyarchy < 0.6				
Transfer ≥ $1,000,000	0.266^{***}	0.262^{**}	0.346^{**}	0.051
	(0.097)	(0.120)	(0.164)	(0.124)
Cutpoint: Polity ≤ 0				
Transfer ≥ $1,000,000	0.285^{***}	0.254^{***}	0.168^{***}	0.140^{*}
	(0.071)	(0.061)	(0.063)	(0.085)
Country Fixed Effects	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓
Observations	1,322	1,322	1,322	1,322

	Democracies			
	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Cutpoint: Polyarchy ≥ 0.33				
Transfer ≥ $1,000,000	0.209^{*}	0.001	0.394^{**}	−0.010
	(0.122)	(0.135)	(0.188)	(0.200)
Cutpoint: Polyarchy ≥ 0.5				
Transfer ≥ $1,000,000	0.031	−0.193	0.227	−0.302
	(0.067)	(0.185)	(0.169)	(0.229)
Cutpoint: Polyarchy ≥ 0.6				
Transfer ≥ $1,000,000	0.110	0.050	0.191	−0.107
	(0.078)	(0.083)	(0.200)	(0.089)
Cutpoint: Polity > 0				
Transfer ≥ $1,000,000	0.228^{*}	0.045	0.368^{*}	−0.083
	(0.123)	(0.160)	(0.199)	(0.211)
Country Fixed Effects	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓
Observations	2,163	2,163	2,163	2,163

Note: *p<0.1; **p<0.05; ***p<0.01

Table 2: Boix, Miller, Rosato Regime Types (Democracies)

	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Transfer $\geq$ \$250,000	0.250*	−0.051	0.393*	−0.053
	(0.130)	(0.145)	(0.225)	(0.214)
Transfer $\geq$ \$500,000	0.250*	−0.051	0.394*	−0.054
	(0.132)	(0.144)	(0.232)	(0.216)
Transfer $\geq$ \$1,000,000	0.219	−0.051	0.438*	−0.072
	(0.145)	(0.150)	(0.242)	(0.236)
Transfer $\geq$ \$5,000,000	0.260	−0.025	0.501*	−0.082
	(0.162)	(0.181)	(0.274)	(0.278)
Transfer $\geq$ \$10,000,000	0.263	−0.025	0.522*	−0.082
	(0.169)	(0.186)	(0.274)	(0.279)
Country Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes

Notes: *p<0.1; **p<0.05; ***p<0.01
Monitoring and Arrests models use four pre-treatment periods, not five.

Table 3: Boix, Miller, Rosato Regime Types (Autocracies)

	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Transfer $\geq$ \$250,000	0.184**	0.183***	0.168*	0.157**
	(0.077)	(0.068)	(0.096)	(0.068)
Transfer $\geq$ \$500,000	0.168**	0.192***	0.150	0.112*
	(0.074)	(0.071)	(0.103)	(0.067)
Transfer $\geq$ \$1,000,000	0.262***	0.279***	0.255**	0.151*
	(0.069)	(0.073)	(0.126)	(0.079)
Transfer $\geq$ \$5,000,000	0.304***	0.309***	0.278**	0.174*
	(0.071)	(0.082)	(0.135)	(0.089)
Transfer $\geq$ \$10,000,000	0.338***	0.286***	0.251***	0.056
	(0.104)	(0.109)	(0.092)	(0.079)
Country Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes

Note: *p<0.1; **p<0.05; ***p<0.01

2 Alternative Estimation Strategies

2.1 OLS Models

Although we view the GSC method as particularly well-suited to the characteristics of Huawei technology transfers, we confirm that the results are broadly similar with OLS regression. The results appear in Tables 4 and 5, and are substantively unchanged.

Table 4: OLS Models of Huawei Transfers and Digital Repression (Democracies)

	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Huawei Transfers$_{t-1}$	-0.003	-0.007^{***}	0.00002	-0.0004
	(0.002)	(0.002)	(0.003)	(0.003)
Polyarchy	-1.763^{***}	-0.496^{***}	-2.371^{***}	-2.358^{***}
	(0.116)	(0.099)	(0.148)	(0.141)
Presidential Election	0.007	-0.010	0.002	-0.021
	(0.012)	(0.011)	(0.016)	(0.015)
Coup Attempts	-0.007	0.020	-0.003	-0.068
	(0.059)	(0.050)	(0.075)	(0.072)
Successful Coups	0.234^{**}	0.205^{**}	0.470^{***}	0.610^{***}
	(0.106)	(0.090)	(0.136)	(0.129)
Protests	0.002^{**}	0.001	0.003^{***}	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Repression	0.00002	0.00003	-0.0001	0.001^{***}
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
GDP	-0.000	0.000^{*}	0.000^{*}	0.000^{***}
	(0.000)	(0.000)	(0.000)	(0.000)
GDP Per Capita	-0.00000^{***}	-0.00000	-0.00001^{***}	-0.00000^{***}
	(0.00000)	(0.00000)	(0.00000)	(0.00000)
Electricity Per Capita	0.004^{***}	0.006^{***}	0.004^{***}	0.003^{**}
	(0.001)	(0.001)	(0.001)	(0.001)
Constant	0.034	-1.161^{***}	0.009	-1.217^{***}
	(0.113)	(0.096)	(0.145)	(0.138)
Country fixed effects	✓	✓	✓	✓
Year fixed effects	✓	✓	✓	✓
Observations	1,835	1,835	1,835	1,835
R^2	0.967	0.964	0.958	0.964
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 5: OLS Models of Huawei Transfers and Digital Repression (Autocracies)

	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Huawei Transfers$_{t-1}$	0.003	0.008**	0.005	0.007*
	(0.005)	(0.004)	(0.004)	(0.004)
Polyarchy	−4.703***	−3.105***	−3.353***	−3.300***
	(0.242)	(0.204)	(0.232)	(0.207)
Presidential Election	0.029	0.079***	0.031	0.019
	(0.036)	(0.030)	(0.034)	(0.030)
Coup Attempts	−0.141	−0.062	−0.053	−0.019
	(0.087)	(0.073)	(0.083)	(0.074)
Successful Coups	−0.043	0.159	0.060	0.071
	(0.132)	(0.112)	(0.127)	(0.113)
Protests	−0.001	−0.001	0.001	−0.002
	(0.002)	(0.001)	(0.002)	(0.001)
Repression	−0.001***	−0.001***	−0.001***	−0.001***
	(0.0004)	(0.0003)	(0.0003)	(0.0003)
GDP	−0.000	−0.000***	−0.000*	−0.000*
	(0.000)	(0.000)	(0.000)	(0.000)
GDP Per Capita	0.00000	0.00000	0.00001***	0.00001***
	(0.00000)	(0.00000)	(0.00000)	(0.00000)
Electricity Per Capita	0.002	−0.001	−0.0002	0.006***
	(0.002)	(0.002)	(0.002)	(0.002)
Constant	1.929***	0.938***	0.610***	0.075
	(0.153)	(0.129)	(0.147)	(0.131)
Country fixed effects	✓	✓	✓	✓
Year fixed effects	✓	✓	✓	✓
Observations	1,137	1,137	1,137	1,137
R^2	0.927	0.931	0.915	0.928
Note:				*p<0.1; **p<0.05; ***p<0.01

2.2 Staggered Differences-in-Differences

Next, we employ a staggered differences-in-differences (DiD) estimator with heterogeneous treatment effects. Although the staggered DiD estimator is increasingly common in the social sciences, it can yield biased estimates of the average treatment effect on the treated (ATT) even when treatment is randomly assigned (Baker, Larcker and Wang 2022). This is known as the "bad comparisons problem," and, when treatment effects can change over time, it can cause the standard staggered DiD estimator to yield estimates of the true ATT that are the opposite sign of the true ATT, even when the parallel trends assumption holds. Intuitively, the standard staggered DiD estimator potentially lets already-treated units serve as effective comparison units. The bad comparisons problem is especially likely in settings where treatment effects are heterogenous, either over time or across units. This heterogeneity is especially likely in areas of interest to political scientists. In our setting, for instance, Huawei transfers almost certainly have heterogeneous effects across countries, since the mix and volume of Huawei transfers generally differs across them. Moreover, as political conditions change over time, the ways that recipient governments – or their successors – employ Huawei technology may change as well.[1]

From Section 4.1 in the main text, we view this estimator as less suited than the GSC method to the particular characteristics of Huawei technology transfers. Still, we nonetheless confirm that the results are not sensitive to using this alternative. We implement the staggered DiD estimator with heterogeneous treatment effects in three steps. We begin by estimating a variant of the standard staggered DiD estimator with treatment effects for each unit:

$$Y_{it} \quad = \quad \alpha + \beta_i \left(\text{Treated}_{it}\right) + \delta X_{it} + \gamma_i + \gamma_t + \epsilon \tag{1}$$

where i indexes country, t indexes year, X_{it} is a vector of time- and country-variant controls, γ_i gives country fixed effects, and γ_t gives year fixed effects. The explanatory variable of interest, $Treated_{it}$, equals 1 if country i has received Huawei transfers greater than some financial threshold $\$T$ during year t or in some year since. We let this financial threshold $\$T$ vary: from a commitment of just \$120,000 in year t to transfers of \$250,000, \$500,000 \$1 million, \$5 million, and \$10 million in year t. The subscript i on β_i makes clear that equation (1) estimates a treatment effect for each treated unit. Next, we construct a contrast matrix that counts the number of periods during which each country in the treatment group is treated. This lets us estimate the cumulative treatment effect of Huawei transfers. Last, we use this estimated cumulative effect to calculate the average treatment effect per unit, per period. We then use these per unit, per period average treatment effects to compute aggregate average treatment effects. The results are substantively unchanged.

[1] For more on how to overcome the bad comparisons problem, see Wheeler (2022).

Table 6: Staggered Differences-in-Differences

	Autocracies			
	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Transfer $\geq$ \$250,000	0.155***	0.172***	−0.014	0.129***
	(0.048)	(0.044)	(0.044)	(0.046)
Transfer $\geq$ \$500,000	0.144***	0.178***	−0.033	0.105**
	(0.051)	(0.046)	(0.047)	(0.049)
Transfer $\geq$ \$1,000,000	0.262***	0.283***	0.041	0.133**
	(0.070)	(0.063)	(0.064)	(0.066)
Transfer $\geq$ \$5,000,000	0.225***	0.235***	0.028	0.107*
	(0.062)	(0.056)	(0.057)	(0.059)
Transfer $\geq$ \$10,000,000	0.201***	0.162**	−0.063	0.002
	(0.078)	(0.071)	(0.073)	(0.074)
Country Fixed Effects	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓
Observations	1,322	1,322	1,322	1,322

	Democracies			
	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Transfer $\geq$ \$250,000	0.119***	−0.116***	0.060	−0.061
	(0.035)	(0.030)	(0.043)	(0.039)
Transfer $\geq$ \$500,000	0.106***	−0.109***	0.050	−0.103**
	(0.037)	(0.031)	(0.045)	(0.041)
Transfer $\geq$ \$1,000,000	0.067*	−0.111***	0.069	−0.116***
	(0.040)	(0.033)	(0.049)	(0.044)
Transfer $\geq$ \$5,000,000	0.087**	−0.087**	0.073	−0.132***
	(0.044)	(0.036)	(0.053)	(0.048)
Transfer $\geq$ \$10,000,000	0.083*	−0.111***	0.076	−0.165***
	(0.045)	(0.038)	(0.055)	(0.050)
Country Fixed Effects	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓
Observations	2,163	2,163	2,163	2,163

Note: *p<0.1; **p<0.05; ***p<0.01

3 General Digital Infrastructure

Notwithstanding the journalistic accounts in the main text, readers may be concerned that there is nothing distinctive about Huawei technology transfers: that the expansion of digital infrastructure generally drives increases in digital surveillance, internet shutdowns, and targeted repression. To ensure this general infrastructure effect is not driving the results in the main text, we identified four measures of digital infrastructure provision from the World Bank's World Development Indicators with the same temporal scope as our sample: internet penetration, mobile phone use, broadband subscriptions, and fixed telephone subscriptions. Together, these reflect the extent to which country i has the sort of infrastructure that could be used by recipient governments for digital surveillance and targeted repression. The results appear in Table 7. We find no evidence that these general measures of digital infrastructure have an effect on digital surveillance, internet shutdowns, or targeted repression, which suggests that Huawei transfers are indeed distinctive.

Table 7: Generalized Synthetic Control Method (General Digital Infrastructure)

	Autocracies			
	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Internet Penetration (Value ≥ Median)	−0.007	−0.100	0.016	0.067
	(0.104)	(0.096)	(0.140)	(0.095)
Broadband Subscribers (Value ≥ Median)	−0.168	−0.254	−0.494	−0.151
	(0.344)	(0.346)	(0.694)	(0.293)
Telephone Subscribers (Value ≥ Median)	−0.017	−0.114	0.096	0.011
	(0.155)	(0.089)	(0.221)	(0.142)
Country Fixed Effects	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓
Observations	1,322	1,322	1,322	1,322

	Democracies			
	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Internet Penetration (Value ≥ Median)	0.011	0.049	−0.019	0.044
	(0.051)	(0.060)	(0.100)	(0.084)
Broadband Subscribers (Value ≥ Median)	−0.010	0.013	0.007	−0.045
	(0.060)	(0.049)	(0.099)	(0.085)
Telephone Subscribers (Value ≥ Median)	0.031	0.136	−0.149	−0.188
	(0.108)	(0.095)	(0.209)	(0.125)
Country Fixed Effects	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓
Observations	2,163	2,163	2,163	2,163

Notes: *p<0.1; **p<0.05; ***p<0.01

For democracies, the internet penetration and broadband subscribers models use three pre-treatment periods.

4 Outcome Variables and Expert Coding

4.1 Exploiting Other Forms of Chinese Engagement

Readers may be concerned that V-Dem's measures of digital repression are based on expert codings, rather than direct behavior. If expert coders observe a substantial Chinese presence in country i and year t, then perhaps they assume that digital repression has increased as well, perhaps due to media coverage. To check for this, we probe whether other forms of Chinese transfers – including development aid, weapons, and overseas official finance – have a similar effect on digital surveillance and targeted repression. All are drawn from AidData's global dataset over same time span (Custer et al. 2021). The results appear in Table 8. We find no evidence that other forms of Chinese engagement have an effect on digital repression, which suggests that expert coders do not observe a substantial Chinese presence in country i in year t and assume an increase in digital surveillance and targeted repression.

4.2 Freedom House Robustness Check

Next, we confirm that our results are robust to using a different set of outcome variables: the Freedom House Freedom on the Net data, which measures obstacles to access, limits on content, violations of user rights, as well as an overall digital freedom score for countries between 2011 and 2023. Freedom House codes a smaller sample of countries over a shorter time span, which reduces our sample to just over 300 country-years, compared to over 1,300 in V-Dem. Note that this forces us to shorten the pre-treatment matching period. Still, the results with the Freedom House measures, which appear in Tables 9 and 10, are substantively unchanged. In democracies, Huawei transfers improve digital access and content availability, leading to gains in overall digital freedom country scores. In autocracies, Huawei transfers make obstacles to access and violations of user rights more severe and overall digital freedom country scores worsen.

Table 8: Generalized Synthetic Control Method (Other Forms of Chinese Engagement)

	Autocracies			
	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Development Aid (Value ≥ Mean)	0.079	0.179**	0.088	0.095
	(0.103)	(0.090)	(0.081)	(0.095)
Weapons Transfers (Value ≥ Mean)	−0.095	0.059	0.278	0.046
	(0.142)	(0.152)	(0.190)	(0.099)
Overseas Official Finance (Value ≥ Mean)	0.210	0.171	0.309**	0.186**
	(0.148)	(0.118)	(0.132)	(0.077)
Country Fixed Effects	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓
Observations	1,322	1,322	1,322	1,322

	Democracies			
	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Development Aid (Value ≥ Mean)	0.093*	0.015	0.153*	0.050
	(0.055)	(0.056)	(0.087)	(0.048)
Weapons Transfers (Value ≥ Mean)	0.121	0.017	0.403**	−0.003
	(0.099)	(0.071)	(0.162)	(0.074)
Overseas Official Finance (Value ≥ Mean)	0.103	0.044	0.218**	−0.044
	(0.072)	(0.086)	(0.092)	(0.109)
Country Fixed Effects	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓
Observations	2,163	2,163	2,163	2,163

Note: *p<0.1; **p<0.05; ***p<0.01

Table 9: Freedom House Scores (Democracies)

	Obstacles to Access	Limits on Content	Violations of User Rights	Total Country Score
Transfer $\geq$ \$250,000	2.297***	0.153	−5.523***	−3.161***
	(0.167)	(0.200)	(0.223)	(0.358)
Transfer $\geq$ \$500,000	0.261*	0.616	1.085**	1.814***
	(0.150)	(0.392)	(0.431)	(0.524)
Transfer $\geq$ \$1,000,000	0.261*	0.616	1.085**	1.814***
	(0.150)	(0.392)	(0.431)	(0.524)
Transfer $\geq$ \$5,000,000	0.261*	0.616	1.085**	1.814***
	(0.150)	(0.392)	(0.431)	(0.524)
Transfer $\geq$ \$10,000,000	0.261	0.568	1.079***	1.774
	(0.540)	(0.618)	(0.367)	(1.169)
Country Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes

Notes: *p<0.1; **p<0.05; ***p<0.01
Lower scores are more repressive, higher scores are more free
The \$250,000 models use three pre-treatment periods, all others use one.

Table 10: Freedom House Scores (Autocracies)

	Obstacles to Access	Limits on Content	Violations of User Rights	Total Country Score
Transfer $\geq$ \$250,000	−0.838	0.612	−3.072***	−4.091**
	(0.835)	(0.934)	(0.938)	(1.676)
Transfer $\geq$ \$500,000	−1.175*	0.181	−2.580**	−4.267***
	(0.657)	(0.781)	(1.025)	(1.518)
Transfer $\geq$ \$1,000,000	−1.420***	0.843	−1.957**	−3.171**
	(0.532)	(0.755)	(0.947)	(1.399)
Transfer $\geq$ \$5,000,000	−1.420***	0.843	−1.957**	−3.171**
	(0.532)	(0.755)	(0.947)	(1.399)
Transfer $\geq$ \$10,000,000	−1.506***	0.627	−2.223***	−3.525***
	(0.413)	(0.647)	(0.742)	(1.165)
Country Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes

Notes: *p<0.1; **p<0.05; ***p<0.01
Lower scores are more repressive, higher scores are more free
All models use three pre-treatment periods.

5 Exploring Alternative Explanations

5.1 Digital Surveillance Prior to Huawei Transfers

Readers may wonder whether there are alternative explanations for our results. One potential alternative is that democracies, which tend to be wealthier than autocracies, enjoyed better access to surveillance technologies prior to Huawei transfers, and that Huawei's observed effect in autocracies reflects this initial difference in surveillance capacities. We explore this with Table 11, which reports average levels of digital surveillance and repression in democracies and autocracies in the year 2000, two years prior to the initiation of Huawei digital surveillance transfers. The evidence suggests that despite democracies' considerably higher purchasing power, they had not invested in surveillance capacities prior to the initiation of Huawei transfers in 2002. Our core V-Dem surveillance and repression measures were considerably lower in democracies than in autocracies in 2000. This suggests that the pernicious effects of Huawei transfers in autocracies cannot be attributed to democracies' prior surveillance technology endowments.

Table 11: Digital Surveillance in Democracies and Autocracies in 2000

	GDP Per Capita	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Democracies	17310.74	-1.41	-1.36	-1.30	-1.48
Autocracies	10796.95	0.70	0.32	0.61	0.93

5.2 Huawei Transfers and Protests

Another alternative interpretation is that Huawei, by providing coordination technologies, stimulates anti-regime protests, which, in turn, beget repression. Tables 12 and 13 report the relationship between Huawei transfers and protests. We find no evidence that Huawei transfers stimulate protests in either democracies or autocracies.

Table 12: Huawei Transfers and Protests (Democracies)

	Protests
Transfer $\geq$ \$250,000	0.454
	(1.012)
Transfer $\geq$ \$500,000	−1.581
	(1.313)
Transfer $\geq$ \$1,000,000	−1.611
	(1.474)
Transfer $\geq$ \$5,000,000	−1.932
	(1.621)
Transfer $\geq$ \$10,000,000	−1.643
	(1.411)
Country Fixed Effects	Yes
Year Fixed Effects	Yes
Control Variables	Yes
Notes:	*p<0.1; **p<0.05; ***p<0.01

The \$250,000 model uses three pre-treatment periods, all others use five.

Table 13: Huawei Transfers and Protests (Autocracies)

	Protests
Transfer $\geq$ \$250,000	0.126
	(0.549)
Transfer $\geq$ \$500,000	−0.851
	(0.801)
Transfer $\geq$ \$1,000,000	−0.939
	(0.993)
Transfer $\geq$ \$5,000,000	−1.060
	(1.099)
Transfer $\geq$ \$10,000,000	0.526
	(1.179)
Country Fixed Effects	Yes
Year Fixed Effects	Yes
Control Variables	Yes
Notes:	*p<0.1; **p<0.05; ***p<0.01

6 Robustness Checks for the GSC Estimator

6.1 Expanded Minimum Pre-Treatment Period

In the main text, we discussed how implementing the GSC estimator requires specifying some minimum number of pre-treatment periods, which are used by the GSC estimator to impute counterfactual outcomes. Intuitively, specifying a higher minimum threshold increases the information with which the GSC estimator imputes counterfactual outcomes, but at the expense of discarding units that were treated early, at least relative to the beginning of data. We specified a five-year pre-treatment minimum as a compromise: our protest and repression variables begin in 1995; Huawei transfers begin around 2001. The five-year minimum lets us maximize coverage while also providing ample information to the GSC estimator. Readers may wonder whether the results are meaningfully different with alternative minimum pre-treatment periods. We specify alternative minimum pre-treatment periods of three years, four years, six years, seven years, and eight years. The results appear in Table 14, and are substantively unchanged for each.

6.2 Placebo

Figure 1 presents the placebo tests developed by Liu, Wang and Xu (2022) for our GSC estimator. These tests hide some observation periods before the treatment for treated units, and predict the untreated outcomes of the hidden periods with a model trained on the untreated units. There should be no differences between observed and predicted outcomes if the identifying assumptions are valid.[2] As desired, the p-values are high, suggesting that the identifying assumptions of the model are not violated.

[2]For more, see Liu, Wang and Xu (2022, 3-4, 18-20).

Table 14: Generalized Synthetic Control Method (Alternative Minimum Pre-Treatment Periods)

	Autocracies			
	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Transfer $\geq$ \$1,000,000 (Minimum Pre-Treatment Periods = 3)	0.339***	0.394***	0.334**	0.160*
	(0.108)	(0.102)	(0.167)	(0.086)
Transfer $\geq$ \$1,000,000 (Minimum Pre-Treatment Periods = 4)	0.339***	0.393***	0.334**	0.159*
	(0.109)	(0.103)	(0.165)	(0.083)
Transfer $\geq$ \$1,000,000 (Minimum Pre-Treatment Periods = 6)	0.331***	0.368***	0.174***	0.147**
	(0.082)	(0.102)	(0.056)	(0.071)
Transfer $\geq$ \$1,000,000 (Minimum Pre-Treatment Periods = 7)	0.366***	0.432***	0.169**	0.128*
	(0.107)	(0.125)	(0.082)	(0.068)
Transfer $\geq$ \$1,000,000 (Minimum Pre-Treatment Periods = 8)	0.365***	0.432***	0.168**	0.126*
	(0.109)	(0.123)	(0.078)	(0.067)
Country Fixed Effects	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓
Observations	1,322	1,322	1,322	1,322

	Democracies			
	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Transfer $\geq$ \$1,000,000 (Minimum Pre-Treatment Periods = 3)	0.077	−0.126	0.204	−0.180
	(0.052)	(0.136)	(0.136)	(0.176)
Transfer $\geq$ \$1,000,000 (Minimum Pre-Treatment Periods = 4)	0.077	−0.126	0.204	−0.180
	(0.052)	(0.136)	(0.136)	(0.176)
Transfer $\geq$ \$1,000,000 (Minimum Pre-Treatment Periods = 6)	0.077	−0.125	0.204	−0.179
	(0.052)	(0.139)	(0.133)	(0.182)
Transfer $\geq$ \$1,000,000 (Minimum Pre-Treatment Periods = 7)	0.077	−0.124	0.204	−0.179
	(0.052)	(0.139)	(0.134)	(0.179)
Transfer $\geq$ \$1,000,000 (Minimum Pre-Treatment Periods = 8)	0.038	−0.227	0.282*	−0.190
	(0.055)	(0.150)	(0.148)	(0.228)
Country Fixed Effects	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓
Observations	2,163	2,163	2,163	2,163

Note: *p<0.1; **p<0.05; ***p<0.01

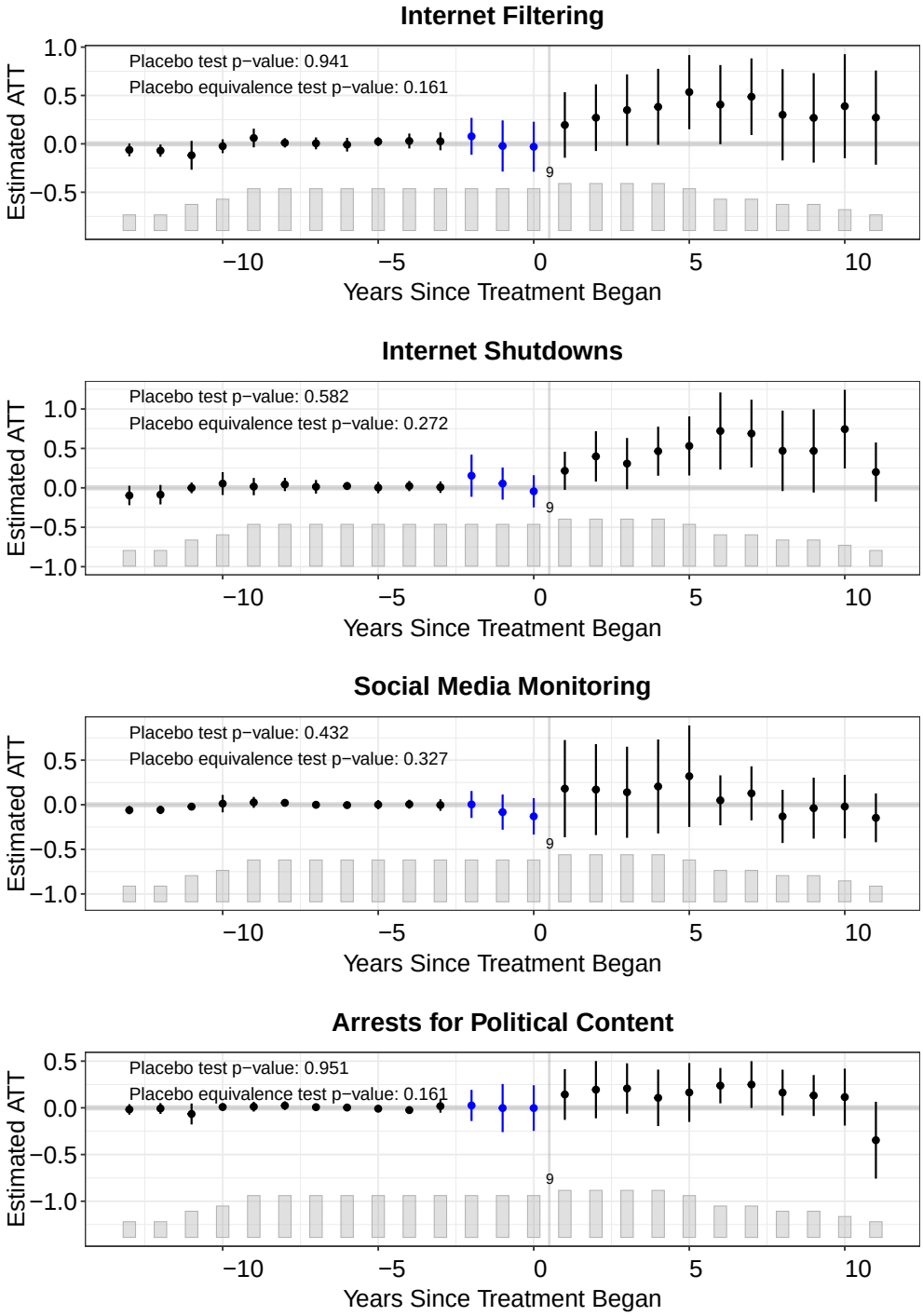

Figure 1: GSC placebo tests

7 Extension: Guardrails Against Democratic Backsliding

We find no clear and consistent evidence that, on average, Huawei transfers have amplified digital repression in the world's democracies. In some cases, however, legitimately elected governments have used Huawei transfers to erode the democratic institutions that brought them to power (Feldstein 2021). This has been especially well-documented in Zambia, where the security forces under former president Edward Lungu used Huawei technology – aided, indeed, by Huawei employees – to intercept encrypted messages sent by local journalists, track their whereabouts, and ultimately secure their arrest (Parkinson, Bariyo and Chin 2019; Woodhams 2019).

When do Huawei technology transfers facilitate democratic backsliding? In Section 2.3.2, we identified a series of constraints that may prevent democratically-elected governments from using Huawei transfers for digital repression: countervailing political institutions, independent media, and vibrant civil societies. Ascertaining which of these is most important beyond the scope of this paper, but our data and estimation strategy let us suggest some tentative answers. We exploit the fact that V-Dem measures the subcomponents of democracy. We focus on five, which are summarized in Table 15. These reflect the strength of civil society, rule of law, legislative constraints on the executive, free and fair elections, and media freedom.

We estimate a series of staggered differences-in-differences estimators that include an interaction term for each V-Dem subcomponent. The baseline model is:

$$Y_{it} \quad = \quad \alpha + \beta_i \left(\text{Treated}_{it}\right) + \kappa \left(\text{Treated}_{it} \times W_{it}\right) + \delta X_{it} + \gamma_i + \gamma_t + \epsilon \tag{2}$$

Equation (2) is identical to (1) save for the interaction term κ, which lets the effect of the Huawei treatment in democracies depend on subcomponent W_{it}.[3] The vector X_{it} includes all of the controls in equation (Equation: GSC). It also includes three lagged values of the treatment and the potential guardrail, which accommodate the possibility that these potential guardrails may actually compel democratically-elected executives to seek Huawei technology for digital repression.

The results appear in Tables 16 through 20. To facilitate interpretation, we visualize the results in Figure 2. Each panel presents the results of six models, each corresponding to a different potential guardrail. The point estimates give the marginal effects of the Huawei treatment for the six potential guardrails along the x-axis. Each potential guardrail has two point estimates. One point estimate, in black, gives the marginal effect of Huawei transfers at the lowest observed value for democracies. This reflects, for instance, the lowest observed freedom of association rating for the world's democracies. Put differently, this point estimate reflects the effect of Huawei when the potential guardrail is at its weakest. The other point estimate, in gray, gives the marginal effect of Huawei transfers at the highest observed value for democracies: the highest freedom of association rating or the highest rule of law rating. This point estimate reflects the effect of Huawei when the

[3] To be clear, we include the base term for W_{it} in the vector X_{it}.

Table 15: Measuring guardrails against democratic backsliding

Variable	Description
Freedom of Association	To what extent are parties, including opposition parties, allowed to form and to participate in elections, and to what extent are civil society organizations able to form and to operate freely?
Rule of Law	To what extent are laws transparent and rigorously enforced and public administration impartial, and to what extent do citizens enjoy access to justice, secure property rights, freedom? from forced labor, freedom of movement, physical integrity rights, and freedom of religion?
Legislative Constraints on the Executive	To what extent are the legislature and government agencies e.g., comptroller general, general prosecutor, or ombudsman capable of questioning, investigating, and exercising oversight over the executive?
Free and Fair Elections	To what extent are elections free and fair?
Free and Independent Media	Are individual journalists harassed — i.e., threatened with libel, arrested, imprisoned, beaten, or killed — by governmental or powerful nongovernmental actors while engaged in legitimate journalistic activities?

potential guardrail is at its strongest. The surrounding lines represent 95% confidence intervals.

Figure 2 suggests two broad implications. First, three of the potential guardrails – a vibrant civil society, the rule of law, and a free and independent media – seem to offer the strongest protection against democratically-elected governments using Huawei transfers for digital repression. When citizens are organized, enjoy access to well-functioning courts, and are kept informed by a free media, democratically-elected governments are least likely to use Huawei technology transfers for digital repression. Second, across potential guardrails, weakly constrained democracies are more likely to impose internet shutdowns and monitor social media than arrest citizens for online content and filter the internet. Put differently, internet shutdowns and social media monitoring are the most common forms of digital repression where the guardrails against democratic backsliding are generally weak. This makes sense as well. Social media monitoring is less invasive, less conspicuous than internet filtering and arrests for online content, and so easier for democratically-elected governments to employ. Likewise, the table against internet shutdowns seems to be weakening, which may incline democratically-elected governments to employ them as well. In 2023, for instance, Access Now documented 283 internet shutdowns across 39 countries, up from 78 shutdowns across 27 countries in 2016.[4] In many years, India, the world's most populous democracy, has been the most frequent offender.

[4]For more, see `https://www.accessnow.org/campaign/keepiton/`.

Table 16: Guardrails against democratic backsliding: Civil society

	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Treatment	0.937^{**}	0.948^{***}	1.137^{**}	0.221
	(0.366)	(0.299)	(0.488)	(0.419)
Freedom of Association × Treatment	-1.054^{**}	-1.028^{***}	-1.303^{**}	-0.161
	(0.430)	(0.351)	(0.572)	(0.492)
Freedom of Association	-2.638^{***}	-1.328^{***}	-3.329^{***}	-4.179^{***}
	(0.366)	(0.299)	(0.487)	(0.419)
Constant	0.616^{**}	-1.125^{***}	-0.132	-0.513^{*}
	(0.261)	(0.213)	(0.348)	(0.299)
Controls	✓	✓	✓	✓
Treatment Lags	✓	✓	✓	✓
Subcomponent Lags	✓	✓	✓	✓
Country Fixed Effects	✓	✓	✓	✓
Observations	1,808	1,808	1,808	1,808
R^2	0.942	0.944	0.923	0.948
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 17: Guardrails against democratic backsliding: Rule of law

	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Treatment	0.890^{***}	0.914^{***}	1.426^{***}	0.513
	(0.304)	(0.252)	(0.405)	(0.350)
Rule of Law × Treatment	-1.092^{***}	-1.054^{***}	-1.780^{***}	-0.594
	(0.370)	(0.307)	(0.493)	(0.426)
Rule of Law	-3.182^{***}	-1.398^{***}	-3.814^{***}	-4.308^{***}
	(0.289)	(0.240)	(0.386)	(0.333)
Constant	0.804^{***}	-2.065^{***}	-0.214	-1.206^{***}
	(0.248)	(0.206)	(0.331)	(0.286)
Controls	✓	✓	✓	✓
Treatment Lags	✓	✓	✓	✓
Subcomponent Lags	✓	✓	✓	✓
Country Fixed Effects	✓	✓	✓	✓
Observations	1,808	1,808	1,808	1,808
R^2	0.944	0.944	0.926	0.949
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 18: Guardrails against democratic backsliding: Legislative constraints

	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Treatment	0.144	0.339^{***}	0.357^{**}	0.241
	(0.131)	(0.107)	(0.173)	(0.151)
Legislative Constraints × Treatment	-0.173	-0.371^{***}	-0.499^{**}	-0.290^{*}
	(0.149)	(0.122)	(0.196)	(0.172)
Legislative Constraints	-1.039^{***}	-0.312^{**}	-1.271^{***}	-1.325^{***}
	(0.169)	(0.138)	(0.222)	(0.195)
Constant	-0.408^{***}	-1.378^{***}	-0.793^{***}	-1.795^{***}
	(0.152)	(0.124)	(0.199)	(0.175)
Controls	✓	✓	✓	✓
Treatment Lags	✓	✓	✓	✓
Subcomponent Lags	✓	✓	✓	✓
Country Fixed Effects	✓	✓	✓	✓
Observations	1,808	1,808	1,808	1,808
R^2	0.941	0.943	0.923	0.946
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 19: Guardrails against democratic backsliding: Free and fair elections

	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Treatment	0.305^{*}	0.241^{*}	0.120	0.325^{*}
	(0.159)	(0.127)	(0.208)	(0.182)
Free and Fair Elections × Treatment	-0.417^{**}	-0.253	-0.145	-0.422^{*}
	(0.208)	(0.167)	(0.272)	(0.239)
Free and Fair Elections	-0.786^{***}	-0.407^{***}	-0.609^{***}	-1.091^{***}
	(0.175)	(0.141)	(0.230)	(0.202)
Constant	-1.029^{***}	-1.650^{***}	-1.564^{***}	-2.659^{***}
	(0.121)	(0.097)	(0.159)	(0.139)
Controls	✓	✓	✓	✓
Treatment Lags	✓	✓	✓	✓
Subcomponent Lags	✓	✓	✓	✓
Country Fixed Effects	✓	✓	✓	✓
Observations	1,808	1,808	1,808	1,808
R^2	0.939	0.942	0.920	0.944
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 20: Guardrails against democratic backsliding: Journalist harassment

	Dependent variable:			
	Internet Filtering	Internet Shutdowns	Social Media Monitoring	Arrests for Political Content
Treatment	0.276^{***}	0.336^{***}	0.223^{*}	0.309^{***}
	(0.104)	(0.085)	(0.130)	(0.113)
Journalist Harassment × Treatment	-0.240^{***}	-0.258^{***}	-0.188^{**}	-0.248^{***}
	(0.063)	(0.051)	(0.079)	(0.068)
Journalist Harassment	-0.192^{***}	-0.054^{**}	-0.320^{***}	-0.377^{***}
	(0.026)	(0.021)	(0.033)	(0.029)
Constant	-0.971^{***}	-1.638^{***}	-1.446^{***}	-2.477^{***}
	(0.112)	(0.091)	(0.140)	(0.122)
Controls	✓	✓	✓	✓
Treatment Lags	✓	✓	✓	✓
Subcomponent Lags	✓	✓	✓	✓
Country Fixed Effects	✓	✓	✓	✓
Observations	1,808	1,808	1,808	1,808
R^2	0.942	0.943	0.931	0.952
Note:				*p<0.1; **p<0.05; ***p<0.01

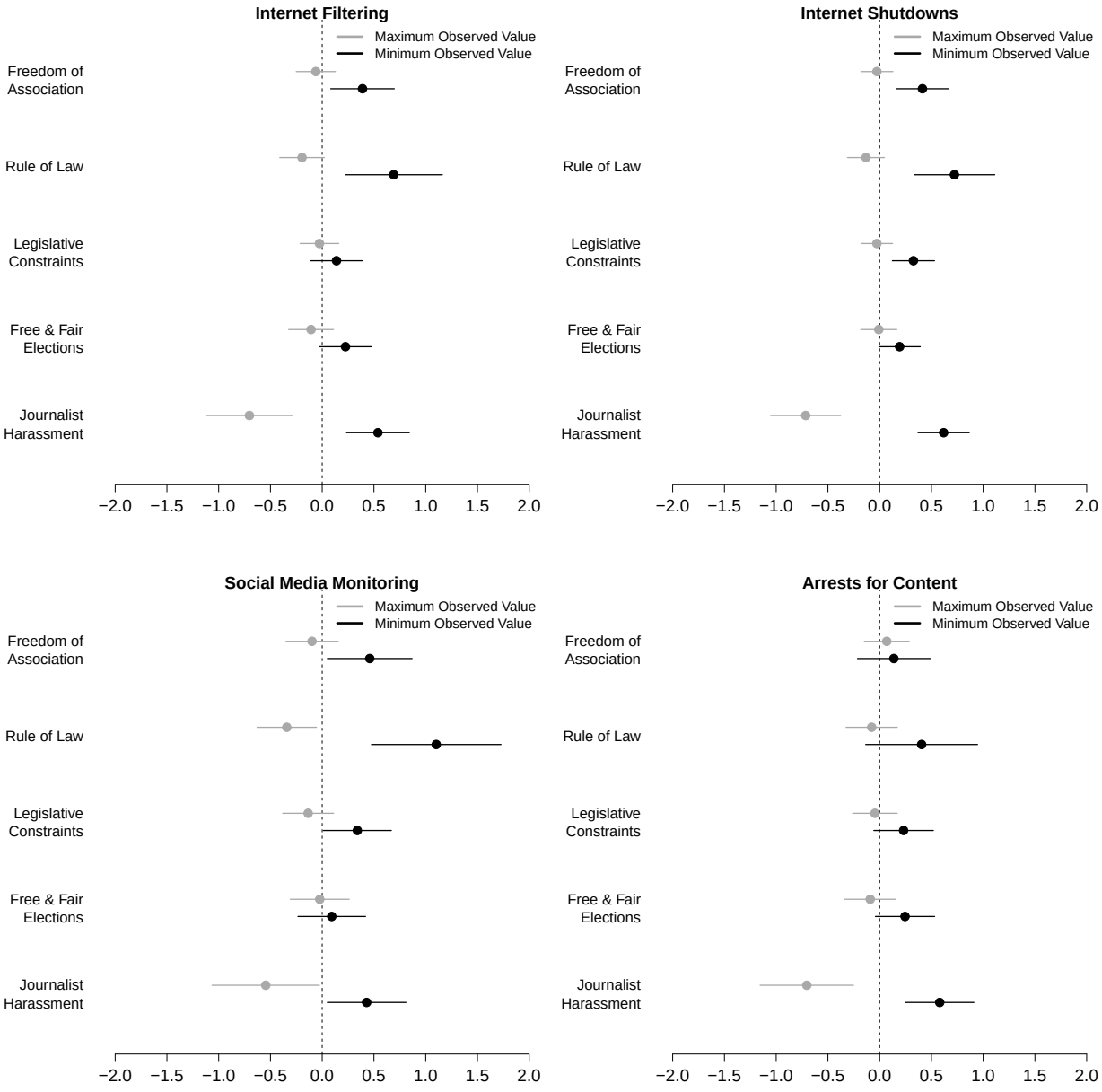

Figure 2: Guardrails against democratic backsliding

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