Supplementary Information File

When does the Public Get It Right?
The Information Environment and the Accuracy of Economic Sentiment

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I. Descriptive Statistics

Table A1. Descriptive Statistics

Series	Mean	Std. Dev.	Min	Max
Economic Perceptions	46.72	10.16	25.84	73.84
Growth	3.96	3.58	-9.55	13.97
(log)Inflation	1.45	0.89	-2.30	2.82
Unemployment	8.56	3.12	3.54	18.19
Political Approval	2.55	9.99	-28.83	28.85
Transparency	3.98	1.07	1.36	5.90
Press Freedom	59.72	12.61	37.00	86.00
Opposition Percent	30.02	11.74	9.34	52.17
Information Environment	0.46	0.52	-0.80	1.41

Notes: For each series the number of observations is 280.

II. Measuring Economic Perceptions

Table A2 describes the consumer confidence batteries in our eight countries with reference to these items. As noted in the manuscript, our measure of economic perceptions includes only the two current/retrospective items of the index, designated in Table A1 as M1 and M2 (see Kellstedt, Linn, and Hannah 2015 for a cautionary discussion on combining ICS items). For Colombia, Costa Rica, and El Salvador the question battery is identical to the Michigan ICS. Argentina also has all five items, in addition to a question about current business conditions. The items in the Mexican surveys are identical in all ways except they include three retrospective items and two prospective ones. And series coverage for Brazil, Chile, and Peru are made possible by combining series from two survey firms which, in combination, provide information on both prospective and retrospective economic conditions. For these cases we combine individual series by applying a dyad-ratios algorithm (Stimson 1991).

With respect to measurement, for Argentina, Brazil, and El Salvador original survey responses range theoretically from 0 to 200 with 100 as the neutral point. In the remaining five cases, the range is 0 to 100 with 50 serving as the neutral point. We standardize all eight series on the 0-100 scale. The regression analyses we estimate below include country fixed effects to account for any residual variation in mean levels due to country-specific aggregation rules and index set date.

Table A2. Consumer Confidence Batteries in Eight Countries

Country	Years	Index Components	Source(s)
Argentina	1998-2013	Six items. M1-M5 plus current business conditions	Índice de Confianza del Consumidor, Centro de Investigación en Finanzas, Universidad de Torcuato di Tella
Brazil	1999-2013	FGV Six items: M1, M3, M5, employment expectations, savings current, savings expectations; CNI Six items: M1, M2, M3, debt ratio, unemployment, inflation	Indice de Confiança do Consumidor, Instituto Brasileiro de Economia, Fundação Getúlio Vargas; Confederação Nacional da Indústria
Chile	2001-2013	IPEC is five items, M1-M5; IPeCo is M2, M3, M4, M5, plus retrospective employment conditions	Índice de Percepción de la Economía (IPEC), GfK Adimark; Índice de Percepción del Consumidor (IPeCo), Centro de Estudio en Economía y Negocios, Universidad del Desarrollo
Colombia	2001-2013	Five items. M1-M5	Índice de Confianza del Consumidor, Fundación para la Educación Superior y el Desarrollo
Costa Rica	2002-2013	Five items. M1-M5	Índice de Confianza del Consumidor, Escuela de Estadística de la Universidad de Costa Rica
Mexico	2001-2013	Five items. M1, M2, M3, M5, plus sociotropic retrospective	Índice de Confianza del Consumidor (ICC), Banco de Información Económica, Instituto Nacional de Estadística y Geografía (BIE/INEGI)
Peru	2003-2013	Michelsen is M1-M5; INDICCA is 4 items: 1) personal retrospective, 2) personal prospective, 3) employment situation, 4) prices.	Índice de Actitudes y Confianza del Consumidor Peruano (IAC), Michelsen Consulting, and Índice de Confianza del Consumidor de Consultoría APOYO (INDICCA), Ipsos-Apoyo
El Salvador	2001-2013	Five items. M1-M5	Índice de Confianza de los Consumidores, Fundación Salvadoreña para el Desarrollo Económico y Social

Notes: In many cases the indices are composed of items identical or very similar in wording to the five-item University of Michigan's Index of Consumer Sentiment. We designate these as M1-M5 in the table.

III. Examining the Effects of Aggregate Partisanship

Research on partisan bias in individuals' evaluations of the executive has consistently found that supporters of the incumbent are systematically more positive in their performance evaluations than opponents or independents (e.g. Donovan et al. forthcoming; Stanig 2013). Although our focus in this paper is not on individual characteristics but on systemic barriers to information in this section we consider the possibility that aggregate patterns of partisanship in the population might shape the connection between economic perceptions and conditions.

To gauge *Aggregate Partisanship*, we use data survey data from several sources, including the Latin American Public Opinion Project (LAPOP) and the Latinobarometer, to calculate the proportion of survey respondents in each country who identify with a political party. The timing of surveys varies widely so we create yearly averages, using available observations per country/year (typically one or two). Models (1) and (2) include only years for which there was at least one survey; in Models (3) and (4) we interpolate for missing years. Given the limitations of the data, results should be taken as preliminary. However, they do suggest that consumer confidence tends to be higher where the proportion of partisans is higher and that, as expected, partisanship might weaken the link between economic perceptions and conditions. Most importantly for our purposes, the results show that the conditioning effect of the information environment is strong, even when we control for aggregate partisanship.

Table A3. Aggregate Partisanship

	(1)	(2)	(3)	(4)
Economic Perceptions$_{t-1}$	-0.380***	-0.211**	-0.271***	-0.211***
	(-7.04)	(-3.29)	(-5.51)	(-3.90)
ΔGrowth$_t$	0.482***		0.287***	
	(4.68)		(3.40)	
Growth$_{t-1}$	0.726***		0.328***	
	(5.86)		(4.07)	
Δ(log)Inflation$_t$	1.385		0.894	
	(0.98)		(1.05)	
(log)Inflation$_{t-1}$	0.250		0.610	
	(0.24)		(1.18)	
ΔUnemployment$_t$	-0.784		-0.373	
	(-0.94)		(-0.61)	
Unemployment$_{t-1}$	-0.0904		-0.513**	
	(-0.22)		(-2.76)	
ΔPolitical Approval$_t$	0.0805	0.117*	0.098***	0.082**
	(1.64)	(2.20)	(3.61)	(2.87)
Political Approval$_{t-1}$	-0.002	0.009	0.067**	0.039
	(-0.04)	(0.21)	(2.95)	(1.73)
Information Environment$_t$	5.999	0.616	4.201*	1.350*
	(1.65)	(0.57)	(2.00)	(2.07)
Aggregate Partisanship$_t$	12.57**	8.581*		
	(3.23)	(2.09)		
Aggregate Partisanship$_t$ (ipo)			1.133	-1.054
			(0.29)	(-0.26)
ΔGrowth$_t$ × Info Environment$_t$	0.751**		0.447	

	(2.90)		(1.91)	
$Growth_{t-1}$ × Info $Environment_t$	0.348		0.052	
	(1.65)		(0.29)	
$\Delta Inflation_t$ × Info $Environment_t$	-6.044***		-4.925***	
	(-4.20)		(-3.69)	
$Inflation_{t-1}$ × Info $Environment_t$	-1.537		-1.821*	
	(-1.70)		(-2.26)	
$\Delta Unemployment_t$ × Info $Environment_t$	-11.87***		-8.931***	
	(-5.18)		(-3.63)	
$Unemployment_{t-1}$ × Info $Environment_t$	-0.880		-0.039	
	(-1.88)		(-0.16)	
ΔObjective Economy		1.645		1.653
		(0.39)		(0.46)
Objective $Economy_{t-1}$		10.32**		5.871*
		(2.66)		(2.27)
$\Delta Objective\ Economy_t$ × Info $Environment_t$ on		8.003***		8.120***
		(3.35)		(3.62)
Objective $Economy_{t-1}$ × Info $Environment_t$ on		1.536		2.333
		(0.93)		(1.68)
$\Delta Objective\ Economy_t$ × $Aggregate\ Partisanship_t$		3.958		
		(0.34)		
Objective $Economy_{t-1}$ × $Aggregate\ Partisanship_t$		-16.06*		
		(-2.01)		
$\Delta Objective\ Economy_t$ × $Aggregate\ Partisanship_t$ (ipo)				-0.130
				(-0.01)
Objective $Economy_{t-1}$ × $Aggregate\ Partisanship_t$ (ipo)				-10.42
				(-1.72)
Constant	5.436	1.371	5.609	5.711*
	(1.19)	(0.48)	(1.41)	(1.96)
N	136	136	280	280

Note: The dependent variable is the first difference of economic perceptions. Cells report parameter estimates with panel-corrected standard errors in parentheses. Standard errors are adjusted for panel-specific AR(1) processes. All models include country fixed effects. ** $p < 0.01$, * $p < 0.05$, two-tailed test.

IV. Unit Root Tests

Table A4 reports Im-Pesaran-Shin unit root tests for heterogeneous panels for all series used in the models in Table 1 in the text, with the lag length chosen by the Aikake information criterion. The null hypothesis is that all panels contain unit roots and the alternative hypothesis is that some panels are stationary. Results indicate that there is evidence that at least two of the series are integrated across all panels, therefore motivating our use of the error correction model pending results of the cointegration tests described below.

Table A4. Im-Pesaran-Shin Unit Root Tests for Series in Table 1

Series	Statistic	p-value	Conclusion
Economic Perceptions	-0.839	0.201	All panels integrated
Growth	-2.274	0.012	Some panels stationary
(log)Inflation	-4.397	<0.001	Some panels stationary
Unemployment	-0.803	0.211	All panels integrated
Political Approval	-4.247	0.000	Some panels stationary
Information environment	1.581	0.943	All panels integrated
Transparency	1.631	0.949	All panels integrated
Press Freedom	-2.598	0.005	Some panels stationary
Opposition Share	-8.047	<0.001	Some panels stationary

Notes: For each series the number of observations is 280.

V. Assessing Equation Balance

In the paper, we estimate the effect of economic and political variables on economic perceptions using a general error correction model (GECM). The choice of the GECM is motivated by its capacity to address the spurious regression problem first identified by Granger and Newbold (1974). In political science, an influential paper by De Boef and Keele (2008) argues for application of a general form of the ECM model in a wide range of settings, pointing out that the GECM can be re-expressed as a general autoregressive distributed lag (ADL) model (see also the follow up discussion of GECM/ADL equivalency in Enns *et al.* 2016). More recently, scholars have debated whether the GECM is appropriate for unbalanced equations. Models are *balanced* balanced when the collection of variables on the right-hand side (the regressors) are *collectively* of the same order of integration as the variable on the left-hand side (the regressand) (Pickup and Kellstedt 2020, 4). Models are unbalanced when "the regressand is not of the same order of integration as the regressors, or *any combination of the regressors*" (Banerjee *et al.* 1993, 164, emphasis added). The crucial point relates to "collectively" and to "any combination of the regressors," meaning that the linear combination of the regressors and regressand should produce a stationary series in order for the GECM to provide a solution to the spurious regression problem. Monte Carlo simulations performed by Enns and Wlezien (2017) support this general conclusion and, in doing so, address the cautionary notes about equation balance in time series found in contributions to a recent *Political Analysis* symposium (Grant and Lebo 2016; Keele et al. 2016; but see Freeman 2016).

Pickup and Kellstedt (2020) lay out a set of procedures for assessing balance. The first step is to assess the order of integration of the variable on the left-hand side. As shown in the first row of Table A3, Economic perceptions may not be stationary. However, the series in first differences, rejects the null hypothesis of panel unit roots (IPS statistic = -8.445, $p < 0.001$). Thus, Δ*Economic Perceptions*$_t$ is I(0). The second step is to determining the order of integration of variables on the right-hand side. Table A3 shows that some of the series levels—*Unemployment*, *Information environment*, and *Transparency*—may be I(1). To assess whether these series collectively, or in combination, are I(0), we follow Banerjee *et al.*'s (1993) guidance and examine the residuals from a linear combination of the series used in Table 1, Models 1-5, in the main text. For each model, we employ Im-Pesaran-Shin (IPS) unit root tests for heterogeneous panels on the residuals. The procedure follows that of the Augmented Engle-Granger test for establishing cointegration (Davidson and MacKinnon 1973, 720-721; in political science, see e.g., Enns *et al.* 2014), but employs the IPS test in place of the Augmented Dickey Fuller tests owing to the panel nature of the data. Table A5 reports the results. In each case, the evidence of stationarity supports claims that a linear combination of the regressors is I(0), thus indicating balance with the regressand, Δ*Economic Perceptions*$_t$.

Finally, in a third step we check equation balance by testing the residuals from our models for unit roots. Results of these tests, reported in Table A6, reveal no indication of unit roots.

Table A5. Im-Pesaran-Shin Unit Root Tests for Linear Combination of Right-Hand Side Series, Table 1 Regressions

Model	Statistic	p-value
Table 1 Model 1	-3.423	0.0003
Table 1 Model 2	-5.289	<0.001
Table 1 Model 3	-4.442	<0.001
Table 1 Model 4	-2.851	0.002
Table 1 Model 5	-4.612	<0.001

Notes: Right-hand side variables are those reported in Table 1 in the main text. For each model the number of observations is 280.

Table A6. Im-Pesaran-Shin Unit Root Tests for Residuals, Table 1 Regressions

Model	Statistic	p-value	Conclusion
Table 1 Model 1	-11.632	<0.001	Some panels stationary
Table 1 Model 2	-10.074	<0.001	Some panels stationary
Table 1 Model 3	-11.540	<0.001	Some panels stationary
Table 1 Model 4	-10.885	<0.001	Some panels stationary
Table 1 Model 5	-10.303	<0.001	Some panels stationary

Notes: For each series the number of observations is 280.

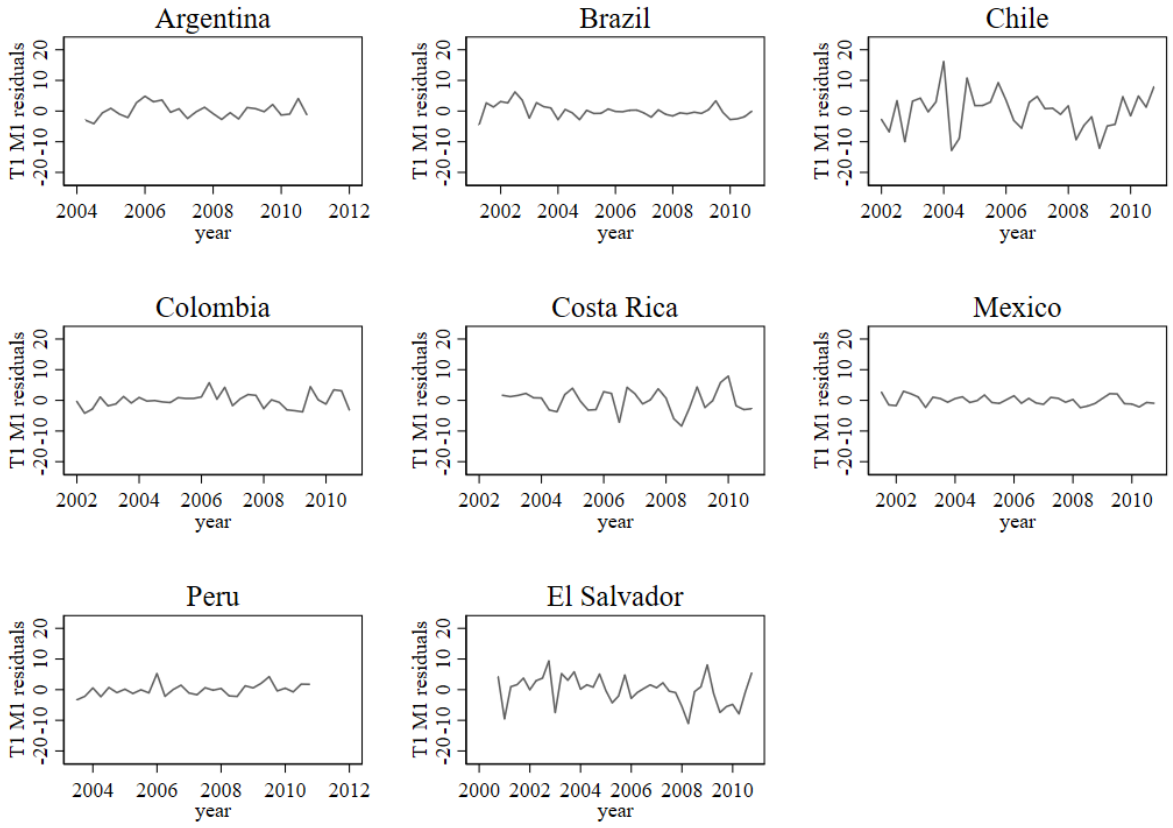
VI. Diagnostics within panels

The findings of stationarity in all models in Tables A5 and A6 supports our use of the (panel) GECM as a solution for threats to inference caused by spurious regression. However, the application of error correction models to pooled time series data has not been widely addressed in the time-series literature; nearly all methodological research on GECMs pertains to single-case time-series studies. Thus, as an additional check, we examine residuals across panels. Table A7 reports Augmented Dickey Fuller tests (1 lag) for the residuals in Table 1 for each country separately. Figure A1 follows with graphs of the residuals.

Table A7. Augmented Dickey Fuller tests of residuals from Table 1 Model 1, separate by country

Country	T	Statistic	p-value	Conclusion
Argentina	25	-3.542	0.007	Residuals stationary
Brazil	37	-3.638	0.005	Residuals stationary
Chile	34	-4.320	0.002	Residuals stationary
Colombia	34	-3.991	<0.001	Residuals stationary
Costa Rica	31	-5.336	<0.001	Residuals stationary
Mexico	36	-5.266	<0.001	Residuals stationary
Peru	28	-3.824	0.003	Residuals stationary
El Salvador	39	-3.858	0.002	Residuals stationary

Figure A1. Graphs of Residuals from Table 1 Model 1, by country



VII. Unrestricted GECMs

As described in the text, our main models, reported in Table 1, are a form of General Error Correction Models (GECMs). We proceed in two stages: first, with a baseline, unrestricted model in which covariates are included both in first differences and in lagged levels. We estimate four models that specify influence of the economic indicators (growth, inflation, and unemployment) on perceptions to vary according to the information environment. Equation (2) provides the model specification that aligns with this expectation. We acknowledge, however, that Equation (2) places a restriction on the most general GECM. Following Warner (2019), this more general expression allows a full complement of interactions between differenced and lagged variables:

$\Delta y_{it} = \alpha_0 + \alpha_1 y_{it-1} + \beta_0 \Delta x_{it} + \beta_1 x_{it-1} + \beta_2 z_{it-1} + \beta_3 \Delta x_{it} z_{it-1} + \beta_4 x_{it-1} z_{it-1} + \beta_5 \Delta z_{it} + \beta_6 \Delta x_{it} \Delta z_{it} + \beta_7 x_{it-1} \Delta z_{it} + \epsilon_{it}$. (A1)

For reasons both theoretical and practical, in the models in Table 1, we restrict this specification so that $\beta_5 = \beta_6 = \beta_7 = 0$.

Theoretically, we have little reason to expect that changes in the information environment, would condition the influence of the economy on perceptions. Additionally, the information environment variables are relatively time-invariant. This is shown empirically in Table A8, which reports summary statistics for these series in differences and find little variance with each of the series. .

Table A8. Information Environment series in first differences, descriptive statistics

Variable	Obs	Mean	Variance	Min	Max
Δ*Information Environment*$_t$	280	-0.017	0.009	-0.770	0.804
Δ*Transparency*$_t$	280	-0.050	0.014	-0.516	0.199
Δ*Press Freedom*$_t$	280	-0.222	0.469	-2.063	2.227
Δ*Opposition Percent*$_t$	280	0.026	10.72	-27.329	28.333

On a practical note, if we were to estimate the fully unrestricted version of the model in Equation A1 (and as described in Warner 2019), it would make for a specification consuming 24 degrees of freedom since our specifications include three economic series, each entered with differenced and lagged levels, to condition.

For these reasons, then, we base our inferences on the slightly restricted version of the conditional GECM presented in Equation (2). Tables A9-A12 below report results of the fully unrestricted models. To conserve degrees of freedom, we estimate models conditioning one series per model. Note that results are very consistent with those we report in Table 1 and, where they differ, the implication is that the Table 1 results are overly *conservative*, against supporting our research expectations.

Table A9. The Effects of Growth on Economic Perceptions conditioned by Information Environment

	(1)	(2)	(3)
Economic Perceptions$_{t-1}$	-0.257**	-0.216**	-0.274**
	(0.052)	(0.051)	(0.049)
ΔGrowth$_t$	0.329**	0.318**	0.377**
	(0.097)	(0.100)	(0.096)
Growth$_{t-1}$	0.251**	0.229*	0.352**
	(0.080)	(0.089)	(0.088)
Δ(log)Inflation$_t$	-2.255**	-0.518	-2.450**
	(0.654)	(1.025)	(0.604)
(log)Inflation$_{t-1}$	-0.547	0.810	-0.825
	(0.495)	(0.577)	(0.433)
ΔUnemployment$_t$	-3.256**	-2.934**	-0.685
	(0.767)	(0.749)	(0.584)
Unemployment$_{t-1}$	-0.360	-0.276	-0.466**
	(0.187)	(0.179)	(0.169)
ΔPolitical Approval$_t$	0.094**	0.095**	0.101**
	(0.028)	(0.028)	(0.028)
Political Approval$_{t-1}$	0.045	0.042	0.052*
	(0.024)	(0.024)	(0.022)
ΔInformation Environment$_t$	-2.485	-9.625	-3.664
	(3.216)	(9.640)	(3.916)
Information Environment$_{t-1}$	0.268	4.232*	0.716
	(0.781)	(1.650)	(1.531)
ΔGrowth$_t$ × Info Environment$_{t-1}$	0.504*		
	(0.249)		
Growth$_{t-1}$ × ΔInfo Environment$_t$	0.749		
	(0.401)		
ΔGrowth$_t$ × ΔInfo Environment$_t$	1.512		
	(1.107)		
Growth$_{t-1}$ × Info Environment$_{t-1}$	0.268		
	(0.141)		
ΔInflation$_t$ × Info Environment$_{t-1}$		-3.824**	
		(1.474)	
Inflation$_{t-1}$ × ΔInfo Environment$_t$		4.838	
		(5.652)	
ΔInflation$_t$ × ΔInfo Environment$_t$		-32.336*	
		(13.002)	
Unemployment$_{t-1}$ × Info Environment$_{t-1}$		-1.897*	
		(0.921)	
ΔUnemployment$_t$ × Info Environment$_{t-1}$			-7.728**
			(2.031)
Unemployment$_{t-1}$ × ΔInfo Environment$_t$			0.422
			(0.365)
ΔUnemployment$_t$ × ΔInfo Environment$_t$			-11.079
			(8.045)
Unemployment$_{t-1}$ × Info Environment$_{t-1}$			0.090
			(0.243)
Constant	10.286**	5.779*	11.606**
	(2.431)	(2.441)	(2.248)
R^2	0.268	0.308	0.298
N	280	280	280

Note: The dependent variable is the first difference of economic perceptions. Parameter estimates with panel-corrected standard errors are in parentheses. Standard errors are adjusted for panel-specific AR(1) processes. All models include country fixed effects. ** $p < 0.01$, * $p < 0.05$, two-tailed test.

Table A10. The Effects of Growth on Economic Perceptions conditioned by Transparency

	(1)	(2)	(3)
Economic Perceptions$_{t-1}$	-0.231**	-0.209**	-0.224**
	(0.052)	(0.051)	(0.051)
ΔGrowth$_t$	0.387**	0.308**	0.334**
	(0.138)	(0.099)	(0.099)
Growth$_{t-1}$	0.304*	0.253**	0.244**
	(0.125)	(0.085)	(0.093)
Δ(log)Inflation$_t$	-2.221**	-4.475**	-2.221**
	(0.653)	(0.926)	(0.645)
(log)Inflation$_{t-1}$	-0.703	-1.007	-0.590
	(0.489)	(0.604)	(0.470)
ΔUnemployment$_t$	-2.944**	-2.420**	-2.482**
	(0.777)	(0.704)	(0.674)
Unemployment$_{t-1}$	-0.357	-0.220	-0.186
	(0.193)	(0.180)	(0.202)
ΔPolitical Approval$_t$	0.100**	0.105**	0.104**
	(0.029)	(0.029)	(0.02)
Political Approval$_{t-1}$	0.054*	0.048	0.053*
	(0.027)	(0.028)	(0.025)
ΔTransparency$_t$	3.812	4.173	20.079**
	(3.221)	(6.862)	(7.773)
Transparency$_{t-1}$	-0.031	0.673	-1.209
	(0.644)	(0.924)	(1.187)
ΔGrowth$_t$ × Transparency$_{t-1}$	-0.048		
	(0.125)		
Growth$_{t-1}$ × ΔTransparency$_t$	0.210		
	(0.521)		
ΔGrowth$_t$ × ΔTransparency$_t$	0.084		
	(0.728)		
Growth$_{t-1}$ × Transparency$_{t-1}$	-0.044		
	(0.092)		
ΔInflation$_t$ × Transparency$_{t-1}$		-0.559	
		(0.789)	
Inflation$_{t-1}$ × ΔTransparency$_t$		-0.287	
		(3.638)	
ΔInflation$_t$ × ΔTransparency$_t$		-16.474**	
		(6.066)	
Unemployment$_{t-1}$ × Transparency$_{t-1}$		-0.533	
		(0.516)	
ΔUnemployment$_t$ × Transparency$_{t-1}$			0.168
			(1.107)
Unemployment$_{t-1}$ × ΔTransparency$_t$			-1.902*
			(0.931)
ΔUnemployment$_t$ × ΔTransparency$_t$			5.151
			(5.311)
Unemployment$_{t-1}$ × Transparency$_{t-1}$			0.106
			(0.165)
Constant	10.641**	9.698**	10.596**

	(2.525)	(2.528)	(2.577)
R^2	0.248	0.308	0.256
N	280	280	280

Note: The dependent variable is the first difference of economic perceptions. Parameter estimates with panel-corrected standard errors are in parentheses. Standard errors are adjusted for panel-specific AR(1) processes. All models include country fixed effects. ** $p < 0.01$, * $p < 0.05$, two-tailed test.

Table A11. The Effects of Growth on Economic Perceptions conditioned by Press Freedom

	(1)	(2)	(3)
Economic Perceptions$_{t-1}$	-0.229**	-0.199**	-0.213**
	(0.049)	(0.048)	(0.045)
ΔGrowth$_t$	0.549**	0.336**	0.352**
	(0.137)	(0.097)	(0.100)
Growth$_{t-1}$	0.336**	0.229**	0.191*
	(0.105)	(0.087)	(0.088)
Δ(log)Inflation$_t$	-2.161**	-1.337*	-2.238**
	(0.647)	(0.600)	(0.619)
(log)Inflation$_{t-1}$	-0.361	-0.238	-0.449
	(0.477)	(0.407)	(0.437)
ΔUnemployment$_t$	-3.386**	-3.445**	-5.663**
	(0.852)	(0.872)	(1.196)
Unemployment$_{t-1}$	-0.236	-0.260	-0.068
	(0.170)	(0.167)	(0.158)
ΔPolitical Approval$_t$	0.105**	0.095**	0.125**
	(0.028)	(0.028)	(0.030)
Political Approval$_{t-1}$	0.050*	0.048*	0.057**
	(0.023)	(0.024)	(0.021)
ΔPress Freedom$_t$	-0.751	1.326	-0.957
	(0.497)	(1.035)	(0.751)
Press Freedom$_{t-1}$	0.105	0.193*	0.078
	(0.060)	(0.089)	(0.063)
ΔGrowth$_t$ × Press Freedom$_{t-1}$	0.024*		
	(0.010)		
Growth$_{t-1}$ × ΔPress Freedom$_t$	0.209*		
	(0.106)		
ΔGrowth$_t$ × ΔPress Freedom$_t$	0.133		
	(0.124)		
Growth$_{t-1}$ × Press Freedom$_{t-1}$	0.004		
	(0.007)		
ΔInflation$_t$ × Press Freedom$_{t-1}$		-0.201**	
		(0.073)	
Inflation$_{t-1}$ × ΔPress Freedom$_t$		-0.982	
		(0.639)	
ΔInflation$_t$ × ΔPress Freedom$_t$		0.027	
		(1.354)	
Unemployment$_{t-1}$ × Press Freedom$_{t-1}$		-0.075	
		(0.046)	
ΔUnemployment$_t$ × Press Freedom$_{t-1}$			-0.005
			(0.059)
Unemployment$_{t-1}$ × ΔPress Freedom$_t$			0.108
			(0.076)
ΔUnemployment$_t$ × ΔPress Freedom$_t$			-2.729**
			(0.703)

$Unemployment_{t-1}$ × $Press\ Freedom_{t-1}$			0.006
			(0.007
Constant	9.611**	8.607**	8.656**
	(2.287)	(2.285)	(2.079)
R^2	0.271	0.289	0.293
N	280	280	280

Note: The dependent variable is the first difference of economic perceptions. Parameter estimates with panel-corrected standard errors are in parentheses. Standard errors are adjusted for panel-specific AR(1) processes. All models include country fixed effects. ** $p < 0.01$, * $p < 0.05$, two-tailed test.

Table A12. The Effects of Growth on Economic Perceptions conditioned by Opposition Percent

	(1)	(2)	(3)
$Economic\ Perceptions_{t-1}$	-0.232**	-0.219**	-0.241**
	(0.049)	(0.050)	(0.046)
$\Delta Growth_t$	0.157	0.367**	0.306**
	(0.186)	(0.102)	(0.093)
$Growth_{t-1}$	-0.147	0.256**	0.214**
	(0.137)	(0.088)	(0.078)
$\Delta(log)Inflation_t$	-2.503**	2.104	-2.818**
	(0.662)	(2.857)	(0.605)
$(log)Inflation_{t-1}$	-0.730	1.503	-0.767
	(0.480)	(1.221)	(0.412)
$\Delta Unemployment_t$	-3.092**	-3.274**	3.733**
	(0.752)	(0.819)	(1.020)
$Unemployment_{t-1}$	-0.212	-0.264	-0.301
	(0.181)	(0.181)	(0.185)
$\Delta Political\ Approval_t$	0.085**	0.090**	0.104**
	(0.028)	(0.029)	(0.027)
$Political\ Approval_{t-1}$	0.027	0.031	0.042*
	(0.022)	(0.022)	(0.018)
$\Delta Opposition\ Percent_t$	-0.148	-0.138	-0.113
	(0.101)	(0.290)	(0.116)
$Opposition\ Percent_{t-1}$	-0.036	0.105*	0.040
	(0.046)	(0.054)	(0.071)
$\Delta Growth_t$ × $Opposition\ Percent_{t-1}$	0.009		
	(0.009)		
$Growth_{t-1}$ × $\Delta Opposition\ Percent_t$	0.035**		
	(0.013)		
$\Delta Growth_t$ × $\Delta Opposition\ Percent_t$	0.076*		
	(0.038)		
$Growth_{t-1}$ × $Opposition\ Percent_{t-1}$	0.017**		
	(0.006)		
$\Delta Inflation_t$ × $Opposition\ Percent_{t-1}$		-0.108	
		(0.078)	
$Inflation_{t-1}$ × $\Delta Opposition\ Percent_t$		0.099	
		(0.178)	
$\Delta Inflation_t$ × $\Delta Opposition\ Percent_t$		-0.087	
		(0.325)	
$Unemployment_{t-1}$ × $Opposition\ Percent_{t-1}$		-0.055	
		(0.037)	
$\Delta Unemployment_t$ × $Opposition\ Percent_{t-1}$			-0.325**
			(0.070)
$Unemployment_{t-1}$ × $\Delta Opposition\ Percent_t$			0.012

			(0.011)
ΔUnemployment$_t$ × ΔOpposition Percent$_t$			-0.249
			(0.245)
Unemployment$_{t-1}$ × Opposition Percent$_{t-1}$			0.001
			(0.008)
Constant	10.545**	5.242*	9.125**
	(2.659)	(2.649)	(2.409)
R^2	0.267	0.254	0.323
N	280	280	280

Note: The dependent variable is the first difference of economic perceptions. Parameter estimates with panel-corrected standard errors are in parentheses. Standard errors are adjusted for panel-specific AR(1) processes. All models include country fixed effects. ** $p < 0.01$, * $p < 0.05$, two-tailed test.

VIII. Table A13. Re-estimation of Table 1 with Annual Series

The table below reports results using annual series. Quarterly series are annualized by taking the mean value for a given year (Q1-Q4). Given concerns over Nickel bias resulting from dynamic models with short time-series, models do not include panel fixed effects.

	(1)	(2)	(3)	(4)	(5)
ΔGrowth_t	0.897**	0.974**	0.079	-1.739*	0.490
	(0.180)	(0.176)	(0.827)	(0.834)	(0.394)
$(\log)\text{Inflation}_{t-1}$	-1.994	-3.838*	-7.475	-18.188*	-4.724
	(1.063)	(1.911)	(6.273)	(7.741)	(4.423)
$\Delta\text{Unemployment}_t$	-3.542**	-2.622*	-3.856	-10.375*	0.319
	(0.900)	(1.082)	(4.253)	(4.312)	(1.962)
$\Delta\text{Political Approval}_t$	0.284**	0.299**	0.267*	0.321**	0.266**
	(0.100)	(0.095)	(0.102)	(0.092)	(0.098)
$\text{Information Environment}_t$		1.586			
		(2.623)			
$\Delta\text{Growth}_t \times \text{Info Environment}_t$		0.729*			
		(0.309)			
$\Delta\text{Inflation}_t \times \text{Info Environment}_t$		1.940			
		(2.344)			
$\Delta\text{Unemployment}_t \times \text{Info Environment}_t$		-1.854			
		(1.949)			
Transparency_t			-0.274		
			(1.430)		
$\Delta\text{Growth}_t \times \text{Transparency}_t$			0.297		
			(0.256)		
$\Delta\text{Inflation}_t \times \text{Transparency}_t$			1.614		
			(1.721)		
$\Delta\text{Unemployment}_t \times \text{Transparency}_t$			0.124		
			(1.008)		
Press Freedom_t				0.107	
				(0.179)	
$\Delta\text{Growth}_t \times \text{Press Freedom}_t$				0.049**	
				(0.015)	
$\Delta\text{Inflation}_t \times \text{Press Freedom}_t$				0.250*	
				(0.120)	
$\Delta\text{Unemployment}_t \times \text{Press Freedom}_t$				0.114	
				(0.070)	
$\text{Opposition Percent}_t$					0.004
					(0.166)
$\Delta\text{Growth}_t \times \text{Press Freedom}_t$					0.014
					(0.013)
$\Delta\text{Inflation}_t \times \text{Press Freedom}_t$					0.043
					(0.113)
$\Delta\text{Unemployment}_t \times \text{Press Freedom}_t$					-0.167*
					(0.076)
Constant	-0.625	-2.264	0.783	-5.733	-0.352
	(1.892)	(2.660)	(7.715)	(9.523)	(6.478)
R^2	0.454	0.551	0.480	0.582	0.519
N	67	67	67	67	67

Note: The dependent variable is the first difference of economic perceptions. Parameter estimates with panel-corrected standard errors are in parentheses. ** $p < 0.01$, * $p < 0.05$, two-tailed test.

IX. Table A14. Re-estimation of Table 1 without country fixed effects

	(1)	(2)	(3)	(4)	(5)
Economic Perceptions$_{t-1}$	-0.129**	-0.154**	-0.112**	-0.131**	-0.155**
	(0.030)	(0.031)	(0.028)	(0.031)	(0.030)
ΔGrowth$_t$	0.307**	0.222*	0.016	-0.838	0.198
	(0.098)	(0.087)	(0.333)	(0.556)	(0.208)
Growth$_{t-1}$	0.154*	0.202**	-0.079	0.121	0.044
	(0.075)	(0.076)	(0.273)	(0.588)	(0.149)
Δ(log)Inflation$_t$	-2.249**	1.023	4.202*	12.402**	3.362
	(0.635)	(0.818)	(1.861)	(4.489)	(2.602)
(log)Inflation$_{t-1}$	-0.604	0.573	0.774	3.058	1.299
	(0.329)	(0.377)	(0.948)	(2.151)	(0.891)
ΔUnemployment$_t$	-3.076**	0.125	-5.641	2.604	3.672**
	(0.837)	(0.742)	(4.229)	(6.469)	(1.279)
Unemployment$_{t-1}$	0.153*	0.081	0.642	0.267	-0.012
	(0.077)	(0.094)	(0.588)	(0.337)	(0.209)
ΔPolitical Approval$_t$	0.091**	0.090**	0.089**	0.086**	0.101**
	(0.027)	(0.027)	(0.027)	(0.027)	(0.028)
Political Approval$_{t-1}$	0.027	0.037	0.025	0.023	0.035
	(0.021)	(0.021)	(0.021)	(0.023)	(0.020)
Information Environment$_t$		1.493			
		(2.058)			
ΔGrowth$_t$ × Info Environment$_t$		0.357			
		(0.238)			
Growth$_{t-1}$ × Info Environment$_t$		-0.062			
		(0.185)			
ΔInflation$_t$ × Info Environment$_t$		-5.094**			
		(1.345)			
Inflation$_{t-1}$ × Info Environment$_t$		-1.560*			
		(0.696)			
ΔUnemployment$_t$ × Info Environment$_t$		-8.528**			
		(2.600)			
Unemployment$_{t-1}$ × Info Environment$_t$		0.023			
		(0.216)			
Transparency$_t$			0.811		
			(0.903)		
ΔGrowth$_t$ × Transparency$_t$			0.071		
			(0.079)		
Growth$_{t-1}$ × Transparency$_t$			0.060		
			(0.068)		
ΔInflation$_t$ × Transparency$_t$			-2.061**		
			(0.583)		
Inflation$_{t-1}$ × Transparency$_t$			-0.345		
			(0.271)		
ΔUnemployment$_t$ × Transparency$_t$			0.703		
			(0.973)		
Unemployment$_{t-1}$ × Transparency$_t$			-0.096		
			(0.118)		
Press Freedom$_t$				0.107	
				(0.102)	
ΔGrowth$_t$ × Press Freedom$_t$				0.021*	
				(0.011)	
Growth$_{t-1}$ × Press Freedom$_t$				0.001	

				(0.011)	
ΔInflation$_t$ × Press Freedom$_t$				-0.228**	
				(0.074)	
Inflation$_{t-1}$ × Press Freedom$_t$				-0.054	
				(0.036)	
ΔUnemployment$_t$ × Press Freedom$_t$				-0.089	
				(0.105)	
Unemployment$_{t-1}$ × Press Freedom$_t$				-0.002	
				(0.007)	
Opposition Percent$_t$					0.007
					(0.071)
ΔGrowth$_t$ × Press Freedom$_t$					0.002
					(0.009)
Growth$_{t-1}$ × Press Freedom$_t$					0.002
					(0.006)
ΔInflation$_t$ × Press Freedom$_t$					-0.154*
					(0.069)
Inflation$_{t-1}$ × Press Freedom$_t$					-0.051
					(0.028)
ΔUnemployment$_t$ × Press Freedom$_t$					-0.313**
					(0.076)
Unemployment$_{t-1}$ × Press Freedom$_t$					0.004
					(0.008)
Constant	4.812**	5.196**	-0.029	-1.932	5.670*
	(1.339)	(1.745)	(4.574)	(5.584)	(2.544)
R^2	0.215	0.328	0.259	0.278	0.310
N	280	280	280	280	280

Note: The dependent variable is the first difference of economic perceptions. Parameter estimates with panel-corrected standard errors are in parentheses. Standard errors are adjusted for panel-specific AR(1) processes. ** $p < 0.01$, * $p < 0.05$, two-tailed test.

X. Analyses with Press Freedom Disaggregated

Freedom House evaluates press freedom on three dimensions, laws and regulations that influence media content, political pressures and controls on media content, and economic influences over media content. Although our main analyses combine these into an aggregate indicator, we also conduct analyses with the separate indicators and report results in Table A15. Consistent with our claim about the role of political manipulation on access to information, these disaggregated analyses show that political controls register the strongest impact.

Table A15: Re-estimating Table 1 Model 3 with Press Freedom Components

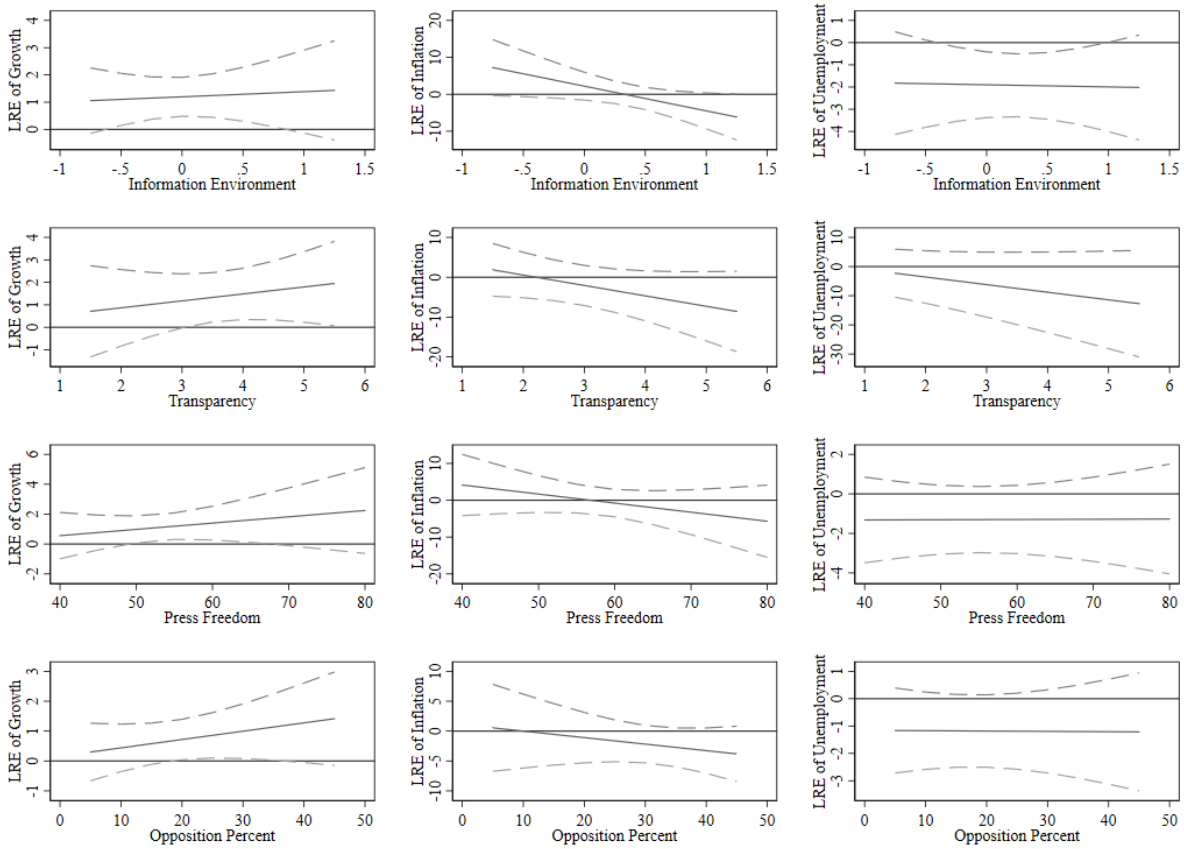
	(2)	(3)	(4)
Economic Perceptions$_{t-1}$	-0.223**	-0.222**	-0.234**
	(0.050)	(0.051)	(0.050)
ΔGrowth$_t$	-8.957*	-2.486	-8.036**
	(4.373)	(1.337)	(3.018)
Growth$_{t-1}$	-4.426	-0.462	-4.201
	(3.947)	(1.560)	(2.970)
Δ(log)Inflation$_t$	62.245**	32.147**	52.720**
	(23.766)	(11.934)	(19.032)
(log)Inflation$_{t-1}$	10.868	4.008	21.045
	(15.222)	(7.368)	(11.719)
ΔUnemployment$_t$	17.667	5.502	-2.559
	(37.726)	(16.407)	(29.289)
Unemployment$_{t-1}$	5.183	-0.368	-1.102
	(6.510)	(1.396)	(2.141)
ΔPolitical Approval$_t$	0.099**	0.079**	0.092**
	(0.029)	(0.028)	(0.027)
Political Approval$_{t-1}$	0.042	0.030	0.045
	(0.026)	(0.024)	(0.024)
Laws & Regulations$_t$	0.612		
	(0.698)		
ΔGrowth$_t$ × Laws & Regulations$_t$	0.106*		
	(0.050)		
Growth$_{t-1}$ × Laws & Regulations$_t$	0.053		
	(0.045)		
ΔInflation$_t$ × Laws & Regulations$_t$	-0.716**		
	(0.268)		
Inflation$_{t-1}$ × Laws & Regulations$_t$	-0.127		
	(0.172)		
ΔUnemployment$_t$ × Laws & Regulations$_t$	-0.230		
	(0.426)		
Unemployment$_{t-1}$ × Laws & Regulations$_t$	-0.061		
	(0.073)		
Political Pressures$_t$		0.061	
		(0.199)	
ΔGrowth$_t$ × Political Pressures$_t$		0.036*	
		(0.017)	
Growth$_{t-1}$ × Political Pressures$_t$		0.009	
		(0.020)	
ΔInflation$_t$ × Political Pressures$_t$		-0.406**	
		(0.144)	
Inflation$_{t-1}$ × Political Pressures$_t$		-0.053	
		(0.090)	

$\Delta Unemployment_t \times Political\ Pressures_t$		-0.102	
		(0.198)	
$Unemployment_{t-1} \times Political\ Pressures_t$		0.001	
		(0.017)	
$Economic\ Influences_t$			0.511
			(0.290)
$\Delta Growth_t \times Economic\ Influences_t$			0.097**
			(0.035)
$Growth_{t-1} \times Economic\ Influences_t$			0.051
			(0.034)
$\Delta Inflation_t \times Economic\ Influences_t$			-0.616**
			(0.217)
$Inflation_{t-1} \times Economic\ Influences_t$			-0.239
			(0.134)
$\Delta Unemployment_t \times Economic\ Influences_t$			-0.007
			(0.326)
$Unemployment_{t-1} \times Economic\ Influences_t$			0.010
			(0.025)
Constant	-44.939	3.896	-36.442
	(61.509)	(16.369)	(25.313)
R-Squared	0.279	0.298	0.313
N	280	280	280

Note: The dependent variable is the first difference of economic perceptions. Cells report parameter estimates with panel-corrected standard errors in parentheses. Standard errors are adjusted for panel-specific AR(1) processes. All models include country fixed effects. ** $p < 0.01$, * $p < 0.05$, two-tailed test.

XI. Long-Run Effects

Figure A2. The Information Environment and Economic Perceptions: Long-Run Effects



Note: graphs report the cumulative, or long-run, effect (LRE) of a one-unit change in the variable noted on the y-axes on *Economic perceptions* over the range of sample value on the information environment, transparency, press freedom, and opposition percent. Graphs produced with estimates from Table 1 models. Dashed lines report 95% confidence intervals. Using notation from Equation (2), the cumulative coefficient, conditional on the given information environment z_{it} is $(\beta_1 + \beta_4 z_{it})/(-\alpha_1)$ with standard error

$$\sqrt{\left(\frac{1}{\alpha_1^2}\right)\left(var\beta_1 + var\beta_4 z_{it}^2 + 2cov\beta_1\beta_4 z_{it}\right) + \frac{((\beta_1+\beta_4 z_{it})^2)}{(\alpha_1^4)} * var\alpha_1 - 2 * \frac{\beta_1+\beta_4 z_{it}}{-\alpha_1^3} * \left(var\beta_1 + var\beta_4 z_{it}^2 + 2cov\beta_1\beta_4 z_{it}\right) * var\alpha_1}$$

For more on calculating LREs from conditional GECMs, see Warner (2019).

XII. Analyses with Williams' Informational Transparency Measures

The below analyses examine the influence of Williams' (2015) informational transparency measures in place of Information environment. Williams' indicators are developed using data from 29 sources. Informational transparency relates to the availability of information, with which market participants can draw upon to reduce informational asymmetries. This measure may be broken into its subcomponents, Informational quantity and Informational quality. The former measures "the quantum of information released by governments, or the information outcomes. The latter measures the quality of this information released, or the information processes. We create these measures using the data and procedures provided by Williams.

Table A16 reports bivariate contemporary correlations between these three indicators and Information environment for our data sample. Note that while our measure correlates positively to the overall transparency index and with Informational quantity, it is negatively associated with Informational quality.

Table A17 replicates Model 2 from Table 2 in the text substituting Williams' measures in place of the information environment. In each case, we mean-center the series. Model 1 reports results for conditioning the economy's influence on Economic perceptions to be conditional on *Informational transparency*. Coefficients on the three interaction terms are all precisely estimated in the expected directions. Model 2 conditions factors of interest on *Informational quantity*. When the effects are weaker, the interaction term coefficients are the same as the previous, albeit less precisely estimated (all are $p < 0.10$). Model 3 shows that *Informational quality* has no influence in shaping the effects of growth, inflation, or unemployment on subjective perceptions. Lastly, in Model 4 we condition these factors on a variable created using the residuals from regressing Information environment on Informational quality. This measure, which is equal to the information environment purged of the quality measure, performs similarly to the unpurged measure, a finding which reiterates Model 3 results indicating that the quality of information does not affect the degree to which publics connect objective economic measures to their subjective assessments of the economy.

Table A16: Contemporaneous correlations

	Information environment	Informational transparency	Informational quantity	Informational quality
Information environment	1			
Informational transparency	0.216	1		
Informational quantity	0.347	0.755	1	
Informational quality	-0.273	0.639	0.219	1

Note: cells report bivariate correlations (*r*). All are statistically significant at $p < 0.001$. N = 280

Table A17: Re-estimating Table 1 Model 2 using Williams' (2015) measures

	(1)	(2)	(3)	(4)
Economic Perceptions$_{t-1}$	-0.291**	-0.255**	-0.217**	-0.281**
	(0.048)	(0.051)	(0.049)	(0.047)
ΔGrowth$_t$	0.366**	0.478**	0.301**	0.507**
	(0.099)	(0.113)	(0.105)	(0.141)
Growth$_{t-1}$	0.337**	0.422**	0.256*	0.392**
	(0.093)	(0.117)	(0.099)	(0.111)
Δ(log)Inflation$_t$	-2.202**	-1.808**	-2.612**	-1.919**
	(0.584)	(0.560)	(0.713)	(0.550)
(log)Inflation$_{t-1}$	-0.360	-0.260	-0.824	-0.335
	(0.433)	(0.421)	(0.488)	(0.405)
ΔUnemployment$_t$	-2.889**	-2.829**	-2.845**	-4.132**
	(0.787)	(1.089)	(0.846)	(0.865)
Unemployment$_{t-1}$	-0.289	-0.239	-0.278	-0.542**
	(0.220)	(0.211)	(0.177)	(0.187)
ΔPolitical Approval$_t$	0.074**	0.089**	0.084**	0.093**
	(0.026)	(0.027)	(0.026)	(0.027)
Political Approval$_{t-1}$	0.045	0.060*	0.039	0.060**
	(0.024)	(0.026)	(0.021)	(0.022)
Informational Transparency$_t$	-0.023			
	(0.280)			
ΔGrowth$_t$ × Info Transparency$_t$	0.064*			
	(0.027)			
Growth$_{t-1}$ × Info Transparency$_t$	0.057*			
	(0.028)			
ΔInflation$_t$ × Info Transparency$_t$	-0.294**			
	(0.077)			
Inflation$_{t-1}$ × Info Transparency$_t$	-0.130*			
	(0.053)			
ΔUnemployment$_t$ × Info Transparency$_t$	-0.494			
	(0.286)			
Unemployment$_{t-1}$ × Info Transparency$_t$	0.009			
	(0.029)			
Informational Quantity$_t$		-0.323		
		(0.350)		
ΔGrowth$_t$ × Info Quantity$_t$		0.059*		
		(0.023)		
Growth$_{t-1}$ × Info Quantity$_t$		0.051*		
		(0.021)		
ΔInflation$_t$ × Info Quantity$_t$		-0.273*		
		(0.111)		
Inflation$_{t-1}$ × Info Quantity$_t$		-0.105		
		(0.080)		
ΔUnemployment$_t$ × Info Quantity$_t$		-0.134		
		(0.290)		
Unemployment$_{t-1}$ × Info Quantity$_t$		0.042		
		(0.040)		
Informational Quality$_t$			0.199	
			(0.127)	
ΔGrowth$_t$ × Info Quality$_t$			0.017	
			(0.014)	
Growth$_{t-1}$ × Info Quality$_t$			0.010	
			(0.014)	

$\Delta Inflation_t \times$ Info $Quality_t$			-0.153**	
			(0.058)	
$Inflation_{t-1} \times$ Info $Quality_t$			-0.107**	
			(0.038)	
$\Delta Unemployment_t \times$ Info $Quality_t$			-0.175	
			(0.226)	
$Unemployment_{t-1} \times$ Info $Quality_t$			-0.016	
			(0.017)	
IE $purged_t$				2.881
				(2.249)
$\Delta Growth_t \times$ IE $purged_t$				0.607*
				(0.276)
$Growth_{t-1} \times$ IE $purged_t$				0.180
				(0.207)
$\Delta Inflation_t \times$ IE $purged_t$				-3.803**
				(0.946)
$Inflation_{t-1} \times$ IE $purged_t$				-1.445*
				(0.611)
$\Delta Unemployment_t \times$ IE $purged_t$				-8.854**
				(2.453)
$Unemployment_{t-1} \times$ IE $purged_t$				-0.024
				(0.270)
Constant	11.272**	9.038**	9.668**	11.891**
	(2.503)	(2.504)	(2.558)	(2.265)
R-Squared	0.359	0.310	0.292	0.381
N	280	280	280	280

Note: The dependent variable is the first difference of economic perceptions. Cells report parameter estimates with panel-corrected standard errors in parentheses. Standard errors are adjusted for panel-specific AR(1) processes. All models include country fixed effects. ** $p \leq 0.01$, * $p \leq 0.05$, two-tailed test.

XIII. Analyses with Statistical Capacity

We re-estimate Table 1 Model 2 controlling for the ability of government agencies to produce high-quality economic data. Our measure of agency capacity draws on World Bank evaluations of the capacity of national statistical systems to abide by international guidelines and procedures in the collection of socioeconomic data (See http://datatopics.worldbank.org/statisticalcapacity). The Bank employs this information to produce an index, the *Statistical Capacity Indicator* (*SCI*), which ranges theoretically between 0 and 100, and in our sample from a low mean of 75.7 in Mexico to a high of 91.9 in Chile. The *SCI* varies also over time; Mexico's score, for example, increased from 68.8 in 2006 to 85.5 in 2010. Model estimates reported in Table A18 show that incorporating the statistical capacity index does not alter the conditioning influence of the information environment nor does it mediate the relationship between the objective and subjective economies. These findings suggest that the distance between economic conditions and perceptions is driven mainly by distortions in the information environment rather than states' capacity to generate high quality data.

Table A18. Modeling Economic Perceptions in Eight Latin American Countries: Statistical Capacity

	(1)	(2)	(3)
Economic Perceptions$_{t-1}$	-0.332**	-0.281**	-0.325**
	(0.060)	(0.057)	(0.058)
ΔGrowth$_t$	0.308**	-1.323	-2.544
	(0.096)	(1.294)	(1.477)
Growth$_{t-1}$	0.354**	0.191*	0.318**
	(0.109)	(0.090)	(0.101)
Δ(log)Inflation$_t$	-1.094	-15.394*	-14.501*
	(0.881)	(7.713)	(7.326)
(log)Inflation$_{t-1}$	-0.454	-0.642	-0.330
	(0.531)	(0.472)	(0.486)
ΔUnemployment$_t$	-0.663	16.726	16.865
	(1.650)	(14.593)	(14.481)
Unemployment$_{t-1}$	0.067	0.065	0.015
	(0.268)	(0.278)	(0.277)
ΔPolitical Approval$_t$	0.146**	0.126**	0.128**
	(0.036)	(0.037)	(0.035)
Political Approval$_{t-1}$	0.067*	0.022	0.042
	(0.030)	(0.027)	(0.027)
Statistical Capacity$_t$	-0.169*	-0.181*	-0.203**
	(0.077)	(0.075)	(0.073)
Information Environment$_t$	0.363	0.176	0.105
	(0.909)	(0.893)	(0.863)
ΔGrowth$_t$ x Information Environment$_t$	0.450*		0.581*
	(0.211)		(0.245)
Δ(log)Inflation$_t$ x Information Environment$_t$	0.908		-0.582
	(1.536)		(1.594)
ΔUnemployment$_t$ x Information Environment$_t$	-5.377*		-5.203*
	(2.412)		(2.425)
ΔGrowth$_t$ x Stat Capacity$_t$		0.020	0.034
		(0.016)	(0.018)
Δ(log)Inflation$_t$ x Stat Capacity$_t$		0.167	0.160
		(0.091)	(0.088)
ΔUnemployment$_t$ x Stat Capacity$_t$		-0.253	-0.217
		(0.183)	(0.177)
Constant	22.906**	23.111**	25.486**
	(6.517)	(6.680)	(6.558)
R-Squared	0.344	0.342	0.377
N	200	200	200

Note: The dependent variable is the first difference of economic perceptions. Cells report parameter estimates with panel-corrected standard errors in parentheses. Standard errors are adjusted for panel-specific AR(1) processes. All models include country fixed effects. The reduced number of observations is due to lack of complete overlap in time periods between *Statistical Capacity* and the information environment indicators. ** $p < 0.01$, * $p < 0.05$, two-tailed test.

XIV. Examining the Effects of Political Stability and Economic Volatility

We consider the possibility that under certain circumstances individuals are less likely to trust the economic signals sent by the government. In contexts of high economic or political volatility, for example, citizens may rationally discount the information provided by the government about the state of the economy. Accordingly, in Table A19 we report estimates from two models: one controlling for political stability and the other for economic stability. To measure political stability we use an indicator, *Government Stability*, developed by the PRS Group, which assesses a government's "ability to carry out its declared program(s), and its ability to stay in office." To measure economic volatility, we use annual standard deviations of monthly exchange rates (Aizenman, Chinn, and Ito 2013), and label the indicator *Exchange Rate Volatility*. Although both variables are rough proxies, neither alters our results. Even in contexts of high volatility—times when citizens might be particularly skeptical of the signals from the government—factors shaping the information climate affect the connection between conditions and perceptions.

Table A19. Modeling Economic Perceptions in Eight Latin American Countries: Political Stability and Economic Volatility

	(1)	(2)
Economic Perceptions$_{t-1}$	-0.309**	-0.277**
	(0.050)	(0.046)
ΔGrowth$_t$	0.062	0.643**
	(0.524)	(0.167)
Growth$_{t-1}$	0.113	0.590**
	(0.446)	(0.164)
Δ(log)Inflation$_t$	-1.448	1.461
	(3.382)	(1.733)
(log)Inflation$_{t-1}$	-4.279	-0.340
	(2.546)	(0.863)
ΔUnemployment$_t$	11.321**	0.102
	(4.374)	(0.717)
Unemployment$_{t-1}$	-0.131	-0.747**
	(0.586)	(0.262)
ΔPolitical Approval$_t$	0.106**	0.095**
	(0.027)	(0.027)
Political Approval$_{t-1}$	0.078**	0.062**
	(0.026)	(0.022)
Information Environment$_t$	4.139	2.730
	(2.234)	(2.126)
ΔGrowth$_t$ × Information Environment$_t$	0.438	0.542*
	(0.230)	(0.239)
Growth$_{t-1}$ × Information Environment$_t$	0.110	0.098
	(0.178)	(0.187)
ΔInflation$_t$ × Information Environment$_t$	-4.821**	-5.557**
	(1.330)	(1.591)
Inflation$_{t-1}$ × Information Environment$_t$	-1.747*	-1.275
	(0.834)	(0.838)
ΔUnemployment$_t$ × Information Environment$_t$	-8.706**	-8.643**
	(2.367)	(2.693)
Unemployment$_{t-1}$ × Information Environment$_t$	-0.060	0.020
	(0.256)	(0.252)
Political Stability$_t$	-0.466	
	(0.692)	
ΔGrowth$_t$ × Political Stability$_t$	0.025	
	(0.068)	
Growth$_{t-1}$ × Political Stability$_t$	0.024	
	(0.062)	
ΔInflation$_t$ × Political Stability$_{t\,t}$	0.262	
	(0.394)	
Inflation$_{t-1}$ × Political Stability$_t$	0.572*	
	(0.285)	
ΔUnemployment$_t$ × Political Stability$_t$	-1.685*	
	(0.666)	
Unemployment$_{t-1}$ × Political Stability$_t$	-0.062	
	(0.072)	
Exchange Rate Volatility$_t$		-2.428
		(5.667)
ΔGrowth$_t$ × Exchange Rate Volatility$_t$		-0.911*
		(0.365)
Growth$_{t-1}$ × Exchange Rate Volatility$_t$		-0.734

		(0.400)
ΔInflation$_t$ × Exchange Rate Volatility$_t$		0.011
		(1.792)
Inflation$_{t-1}$ × Exchange Rate Volatility$_t$		1.445
		(1.022)
ΔUnemployment$_t$ × Exchange Rate Volatility$_t$		-1.079
		(3.831)
Unemployment$_{t-1}$ × Exchange Rate Volatility$_{t\,t}$		0.605
		(0.569)
Constant	15.620*	11.510**
	(6.532)	(2.834)
R-Squared	0.396	0.387
N	280	280

Note: The dependent variable is the first difference of economic perceptions. Cells report parameter estimates with panel-corrected standard errors in parentheses. Standard errors are adjusted for panel-specific AR(1) processes. All models include country fixed effects. ** $p < 0.01$, * $p < 0.05$, two-tailed test.

XV. Effects of Nighttime Light

In the following two tables we report results from panel models estimated on annual data from our eight countries. Note that our measure of *Nighttime Light* is from PRIO's calibrated series which measure average nighttime light emission calibrated to account for inter-satellite differences and inter-annual sensor decay. Image and data processing by NOAA's National Geophysical Data Center. We collapse satellite image at the country-year level. Results reported below are robust to non-calibrated series.

In the first two models of Table A20, the dependent variable is the economic indicator index described in the main text. The models show that nighttime light positively affects the objective economy, regardless of whether we included the lagged dependent variable in the specification. The four remaining models in the table show that nighttime light has no precise influence on economic perceptions.[1]

Table A21 repeats the specifications from Table A20 but does so with all series reported in annual first differences. The substantive findings are identical. Table A22 reports results using a general method of moments estimation (GMM).

Table A20. The Effect of Nighttime Light on Economic Indicators and Economic Perceptions, Models in Levels

	DV: Economic Indicators Index$_t$		DV: Economic Perceptions$_t$	
	M1	M2	M3	M4
Nighttime Light$_t$	9.61**	8.40*	5.08	-38.12
	(3.11)	(3.43)	(69.73)	(58.89)
Economic Indicators Index$_t$			10.24**	9.55**
			(2.44)	(2.02)
Economic Indicators Index$_{t-1}$		0.10		
		(0.12)		
Economic Perceptions$_{t-1}$				0.49**
				(0.09)
Constant	-0.54*	-0.47	31.35**	18.14**
	(0.26)	(0.28)	(5.59)	(5.63)
Observations	84	76	84	76
R^2	0.53	0.53	0.61	0.76

Note: Data are annual from 2001 to 2012 for Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru, and El Salvador. Cells report parameter estimates with standard errors in parentheses. All models include country fixed effects. ** $p < 0.01$, * $p < 0.05$, two-tailed test.

[1] We also estimated models including a measure of democratic quality from the Polity IV database; this had no effect on any of the results we report here, either in terms of parameter estimates or model fit.

Table A21. The Effect of Nighttime Light on Economic Indicators and Economic Perceptions, Models in <u>Differences</u>

	DV: ΔEconomic Indicators Index$_t$		DV: ΔEconomic Perceptions$_t$	
	M1	M2	M3	M4
ΔNighttime Light$_t$	20.67**	19.08*	-61.33	10.72
	(6.50)	(7.22)	(109.33)	(125.63)
ΔEconomic Indicator Index$_t$			7.71**	7.76**
			(1.92)	(2.05)
ΔEconomic Indicator Index$_{t-1}$		-0.23		
		(0.13)		
ΔEconomic Perceptions$_{t-1}$				0.21
				(0.13)
Constant	-0.03	-0.04	-0.06	0.00
	(0.14)	(0.15)	(2.19)	(2.39)
Observations	76	68	76	68
R^2	0.14	0.22	0.23	0.25

Note: Data are annual from 2001 to 2012 for Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru, and El Salvador. Cells report parameter estimates with standard errors in parentheses. All models include country fixed effects. ** $p < 0.01$, * $p < 0.05$, two-tailed test.

Table A22. Reanalysis of Table 2 Models 1 and 2 without FE, GMM regression

	DV: Economic Indicators	
	M1	M2
	Levels	Differences
Nighttime Light$_t$	3.20$^+$	
	(1.82)	
ΔNighttime Light$_t$		18.63**
		(7.22)
Lagged Dependent Variable	0.51**	-0.22*
	(0.10)	(0.11)
Country fixed effects	N	N
Constant	-0.18	-0.01
	(0.14)	(0.05)
Observations	76	68
R^2	0.31	0.20

Note: Data are annual from 2001 to 2012 for Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru, and El Salvador. Cells report parameter estimates with standard errors in parentheses from a two-step generalized method of moments estimation. ** $p < 0.01$, * $p < 0.05$, $^+ < 0.10$ two-tailed test.

XVI. References

Aizenman, Joshua, Menzie D. Chinn, and Hiro Ito. 2013. "The 'Impossible Trinity' Hypothesis in an Era of Global Imbalances: Measurement and Testing." *Review of International Economics* 21 (3): 447–458.

Banerjee, Anindya, Juan Dolado, John Galbraith and David F. Hendry. 1993. *Co-Integration, Error Correction, and the Econometric Analysis of Non-Stationary Data.* Oxford: Oxford University Press.

Davidson, Russell, and James G. MacKinnon. 1993. *Estimation and Inference in Econometrics*. New York: Oxford University Press.

Enns, Peter K., Nathan J. Kelly, Jana Morgan, Thomas Volscho, and Christopher Witko. 2014. "Conditional Status Quo Bias and Top Income Shares: How U.S. Political Institutions Have Benefited the Rich." *Journal of Politics* 76(2): 289-303.

Enns, Peter K., and Christopher Wlezien. 2017. "Understanding Equation Balance in Time Series Regression." *The Political Methodologist*, posted June 23, 2017.

Freeman, John R. 2016. "Progress in the Study of Nonstationary Political Time Series: A Comment." *Political Analysis* 24(1): 50-58.

Granger, C.W.J., and P. Newbold. 1974. "Spurious Regressions in Econometrics." *Journal of Econometrics* 2:111-120.

Grant, Taylor and Matthew J. Lebo. 2016. "Error Correction Methods with Political Time Series." *Political Analysis* 24(1):3–30.

Keele, Luke, Suzanna Linn and Clayton McLaughlin Webb. 2016. "Treating Time with All Due Seriousness." *Political Analysis* 24(1):31–41.

Pickup, Mark and Kellstedt, Paul. 2020. Equation Balance in Time Series Analysis: What It Is and How to Apply It (January 27, 2020). Available at SSRN: https://ssrn.com/abstract=3526534 or http://dx.doi.org/10.2139/ssrn.3526534

Stanig, Piero. 2013. "Political polarization in retrospective economic evaluations during recessions and recoveries." *Electoral Studies* 32(4): 729-745.

Warner, Zach. 2019. "Conditional Relationships in Dynamic Models." Unpublished manuscript, Cardiff University.

Donovan, Kathleen, Paul M. Kellstedt, Ellen M. Key, and Matthew J. Lebo. 2019. "Motivated Reasoning, Public Opinion, and Presidential Approval." *Political Behavior*: 1-21.