Supplementary Appendix for "Strategic Government Communication About Performance"

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A   Results from STM

For the main results of this paper, I use a dictionary approach to classify press releases about economic growth and crime. However, as a way of exploring these data, I also use Structural Topic Models (STM) with one covariate — the source city — to analyze the text data in my corpus, which accommodates the varying style of press releases between the 50 cities in my data yet also identifies common themes and topics across all cities. Here, I present the machine-generated topic clusters identified by the STM with 45 topics in Table A1. The first column lists the summary label that I create for each topic, the second column shows the five words that the STM identified as the most predictive of that topic, and the third column shows the frequency of the topic across all press releases in the entire corpus of documents.[18]

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[18]It also lists the topic number in parentheses in the first column. These topic numbers are arbitrarily selected by the model — lower numbered topics do not explain more variance within the model, but were simply assigned lower numbers in the model.

Table A1: STM-identified topic summaries and frequency, K=45

Topic Summary Label	Highest Probability Words	Frequency in Corpus (%)
Crime reports (23)	police, cityname, suspect, officers, crime	5.14
Infrastructure repairs & closures (13)	will, traffic, cityname, street, road	4.46
City planning (24)	city, will, public, council, meeting	3.93
Community/vounteer events (41)	community, program, cityname, neighborhood, will	3.73
Holiday closures/calendars (15)	will, open, friday, monday, center	3.53
Public utilities (2)	city, cityname, information, box, department	3.43
Parks & recreational programs (35)	park, parks, recreation, center, community	3.40
Parks & public facilities (25)	project, new, will, construction, building	3.39
Mayoral announcements (37)	said, people, can, make, city	3.21
Awards & global issues (4)	cityname, mayor, cities, national, city	2.92
Misc. announcements (20)	year, new, years, first, one	2.76
Personnel announcements (10)	police, department, chief, cityname, officers	2.68
Economic development (31)	cityname, business, economic, jobs, businesses	2.57
Performing arts & events (18)	cityname, music, will, festival, center	2.56
Fiscal affairs (21)	city, million, budget, tax, will	2.55
Technology and administration (7)	city, information, cityname, online, can	2.50
City council/govt boards (40)	council, cityname, city, board, committee	2.50
Permitting/licensing (39)	city, property, order, department, cityname	2.42
Parking restrictions & road closures (29)	street, parking, will, avenue, cityname	2.23
Events/intergovernmental affairs (26)	cityname, mayor, city, office, release	2.22
Water quality/sewer (12)	water, cityname, public, utilities, sewer	2.20
Weather preparedness (6)	snow, weather, can, city, emergency	2.16
Celebrations & memorials (28)	cityname, honor, veterans, day, memorial	2.08
Garbage & recycling (33)	waste, recycling, collection, cityname, will	2.06
Education (1)	school, students, schools, youth, education	1.99
Legislation/intergovernmental affairs (45)	mayor, bill, legislation, state, statement	1.86
Festivals & events (5)	cityname, visitors, convention, will, zoo	1.79
Emergency preparation & management (14)	fire, emergency, cityname, department, safety	1.77
Demographic statistics (11)	percent, report, cityname, city, safety	1.73
Sustainability/energy (27)	energy, city, cityname, green, light	1.72
Transportation (43)	transportation, transit, bus, will, service	1.71
Sporting events (9)	cityname, will, game, team, sports	1.69
Arts & culture (30)	arts, art, cityname, cultural, city	1.67
Crime reports (16)	district, pike, persons, charged, detectives	1.59
Law enforcement (38)	court, law, gun, cityname, enforcement	1.56
Affordable housing (17)	housing, affordable, development, cityname, will	1.49
Public health & safety (3)	health, care, services, violence, cityname	1.41
Animals and pets (44)	animal, shelter, cityname, animals, pet	1.41
Libraries (34)	library, cityname, public, branch, san	1.31
Voting & elections/airports (22)	airport, cityname, election, texas, international	0.97
Misc. mayoral announcements (32)	city, bloomberg, mayor, will, citynameers	0.96
Speech transcripts (42)	going, mayor, think, people, know	0.89
Transit/road closures (19)	will, highway, closed, street, lane	0.86
Street & infrastructure repairs (36)	street, avenue, completion, date, estimated	0.74
Street repair (8)	street, end, place, road, avenue	0.22

B Placebo Checks for Pretreatment Trends

In this section, I examine the effect of economic growth and increases in crime on past communication – a placebo check for the potential presence of time-varying confounders commonly known as a check for parallel trends in pretreatment outcomes. Across both communication areas, these placebo checks show that there is no significant effect of contemporaneous conditions on pretreatment outcomes. This suggests that threats to causal inference from time-varying confounders are unlikely.
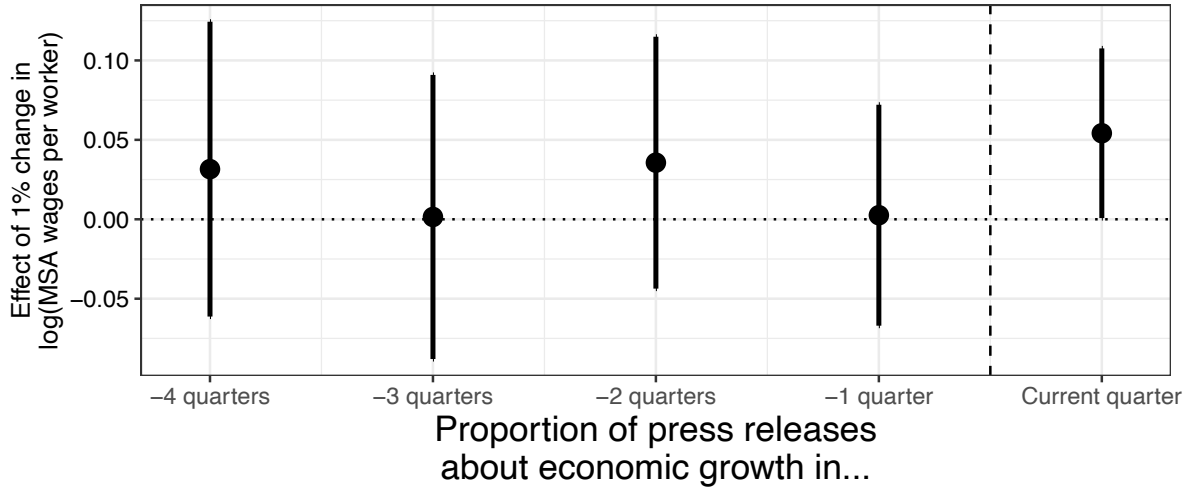
Figure A1: Treatment effect of contemporary economic growth on current and previous outcomes. Points indicate the effect of 1% greater economic growth on communication about the economy, using communication measured in past periods designated along the x-axis, with 95%-confidence intervals.
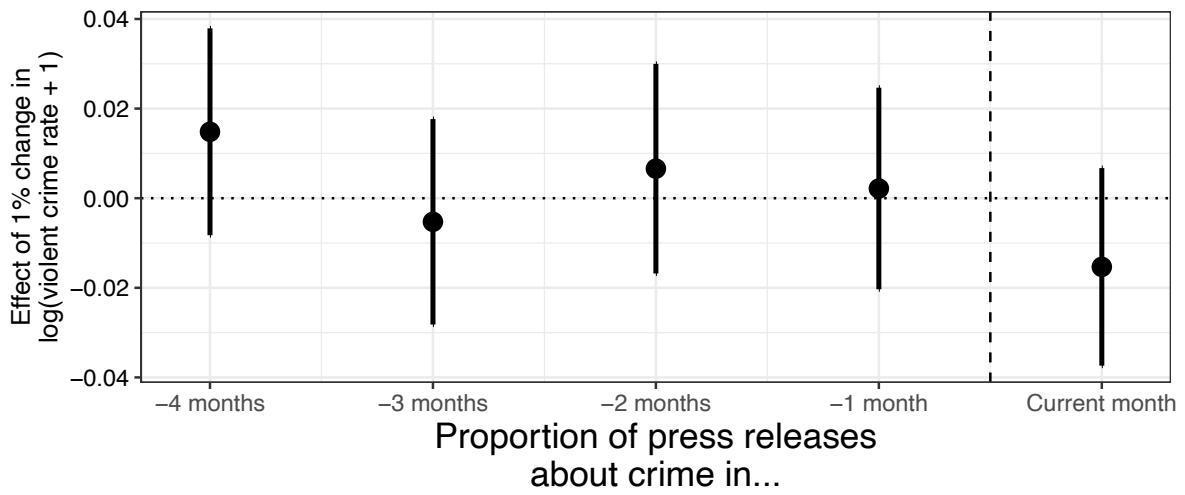
Figure A2: Treatment effect of contemporary crime conditions on current and previous outcomes. Points indicate the effect of 1% greater change in violent crime on communication about crime, using communication measured in past periods designated along the x-axis, with 95%-confidence intervals.

C   Results Using Additional Model Specifications

In this section, I present the main analyses presented in the paper, but with several alternative model specifications. First, in Table A2, I show the main effect of economic conditions on communication about economic growth but omitting fixed effects from the models. In Table A3 I show similar specifications for crime. Then, in Tables A4 and A5 I reproduce the main analyses of the paper, but using a different measurement of communication for the dependent variable. I show results using a threshold for topic membership that is anywhere between 5 and 15 words from the manually-created dictionaries for both economic growth and crime communication.

Table A2: Effect of Economic Conditions on Communication, Omitting Fixed Effects

	Proportion of documents having > 10 words in:		
	Economic growth dictionary		
	(1)	(2)	(3)
Δ Log(quarterly wages per worker)	0.02	0.02	0.05**
	(0.03)	(0.02)	(0.02)
City fixed effects?		✓	✓
Quarter fixed effects?			✓
Observations	1,310	1,310	1,310
R^2	0.0004	0.77	0.80
Adjusted R^2	-0.0004	0.76	0.77

Note: *p<0.1; **p<0.05; ***p<0.01
Standard errors clustered by MSA and year-quarter

Table A3: Effect of Crime Rates on Communication, Omitting Fixed Effects

	Proportion of documents having > 10 words in:		
	Crime dictionary		
	(1)	(2)	(3)
Δ Log(violent crime rate)	−0.03**	−0.03*	−0.02*
	(0.02)	(0.01)	(0.01)
City fixed effects?		✓	✓
Month fixed effects?			✓
Observations	520	520	520
R^2	0.02	0.32	0.53
Adjusted R^2	0.02	0.30	0.40

Note: *p<0.1; **p<0.05; ***p<0.01
Standard errors clustered by city and year-month

Table A4: Effect of Economic Conditions on Communication, Alternative Thresholds

	Proportion of documents having x words in dictionary:										
	> 15	> 14	> 13	> 12	> 11	> 10	> 9	> 8	> 7	> 6	> 5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Δ Log(quarterly wages per worker)	0.04***	0.04***	0.05***	0.05***	0.06***	0.05**	0.07***	0.06***	0.06***	0.06***	0.06***
	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
City fixed effects?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Quarter fixed effects?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310
R^2	0.76	0.77	0.76	0.77	0.79	0.80	0.81	0.81	0.82	0.83	0.83
Adjusted R^2	0.73	0.73	0.73	0.74	0.76	0.77	0.78	0.79	0.80	0.80	0.81

Note: *p<0.1; **p<0.05; ***p<0.01
Standard errors clustered by MSA and year-quarter

Table A5: Effect of Crime Rates on Communication, Alternative Thresholds

	Proportion of documents having x words in dictionary:										
	> 15	> 14	> 13	> 12	> 11	> 10	> 9	> 8	> 7	> 6	> 5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Δ Log(violent crime rate)	0.01	0.003	0.001	0.0002	−0.0005	−0.02*	−0.003	−0.003	−0.002	0.004	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)
City fixed effects?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Month fixed effects?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	520	520	520	520	520	520	520	520	520	520	520
R^2	0.37	0.38	0.38	0.37	0.38	0.53	0.39	0.40	0.43	0.44	0.47
Adjusted R^2	0.21	0.22	0.21	0.20	0.21	0.40	0.22	0.24	0.28	0.29	0.32

Note: *p<0.1; **p<0.05; ***p<0.01
Standard errors clustered by city and year-month

D   Results Using Individual Press Releases as Outcomes

In the main body of the paper, I use temporal aggregations of press releases within a city as the unit of analysis and assess the impact of objective conditions on the proportion of press releases about a given topic. However, another way of analyzing these data is to use the individual press release as the unit of analysis, and assess the influence of objective conditions — average wages per worker and crime rates — on the probability that a press release is about a given topic. To do this, I use the disaggregated form of the data used in the main analyses and conduct similar analyses to those presented in the main text. I regress the probability of a document being about economic growth on the change in the log of wages during that quarter in that MSA, and the probability of a document being about crime a city on the change in the log of the crime rate in that month in that city. As with the main analyses in the paper, I include city and time period fixed effects in a difference-in-differences approach.

The primary results of these analyses are shown in Figure A3 and A4. These results are also shown in Table A6 and Table A7, both for the model without fixed effects, in the first column, using only city-level fixed effects, in the second column, and using the preferred causal identification strategy with two-way fixed effects, in the third column. These results indicate that a 1% larger change in economic conditions leads to a 5 percentage point increase in the proportion of press releases in a given city-quarter about economic development, and a 1% larger change in the violent crime rate leads to a 2 percentage point decrease in the proportion of press releases in a given city-month about crime.

In addition, as I do with the main models in Appendix C, I also vary the threshold number of words in the dictionaries I use to classify press releases. These results, presented in Table A8 and Table A9, are substantively similar to those using the threshold of 10 words.

Table A6: Effect of Economic Conditions on Individual Press Releases

	Probability of document having		
	> 10 words in dictionary		
	(1)	(2)	(3)
Δ Log(quarterly wages per worker)	0.02	0.02	0.05*
	(0.04)	(0.03)	(0.03)
City fixed effects?		✓	✓
Quarter fixed effects?			✓
Observations	101,568	101,568	101,568
R^2	0.0000	0.10	0.10
Adjusted R^2	0.0000	0.09	0.10

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

Standard errors clustered by MSA and year-quarter

Table A7: Effect of Crime Rates on Individual Press Releases

	Probability of document having		
	> 10 words in dictionary		
	(1)	(2)	(3)
Δ Log(violent crime rate per 100k + 1)	-0.03^{**}	-0.03^{*}	-0.02^{*}
	(0.02)	(0.01)	(0.01)
City fixed effects?		✓	✓
Month fixed effects?			✓
Observations	12,672	12,672	12,672
R^2	0.001	0.03	0.04
Adjusted R^2	0.001	0.02	0.03

Note: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Standard errors clustered by city and year-month

Table A8: Effect of Economic Conditions on Individual Press Releases, Alternative Thresholds

	Probability of document having x words in dictionary:										
	> 15	> 14	> 13	> 12	> 11	> 10	> 9	> 8	> 7	> 6	> 5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Δ Log(quarterly wages per worker)	0.04^{**}	0.04^{*}	0.05^{**}	0.05^{*}	0.06^{**}	0.05^{*}	0.07^{**}	0.06^{**}	0.06^{**}	0.06^{***}	0.06^{**}
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)
City fixed effects?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Quarter fixed effects?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	101,568	101,568	101,568	101,568	101,568	101,568	101,568	101,568	101,568	101,568	101,568
R^2	0.07	0.08	0.08	0.09	0.09	0.10	0.10	0.11	0.11	0.12	0.12
Adjusted R^2	0.07	0.08	0.08	0.09	0.09	0.10	0.10	0.11	0.11	0.12	0.12

Note: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Standard errors clustered by MSA and year-quarter

Table A9: Effect of Crime Rates on Individual Press Releases, Alternative Thresholds

	Probability of document having x words in dictionary:										
	> 15	> 14	> 13	> 12	> 11	> 10	> 9	> 8	> 7	> 6	> 5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Δ Log(violent crime rate per 100k + 1)	0.0004	0.002	-0.002	-0.003	-0.01	-0.02^{*}	-0.01	-0.002	-0.004	-0.01	-0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
City fixed effects?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Month fixed effects?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	12,451	12,451	12,451	12,451	12,672	12,672	12,451	12,451	12,672	12,451	12,451
R^2	0.02	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05
Adjusted R^2	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04

Note: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
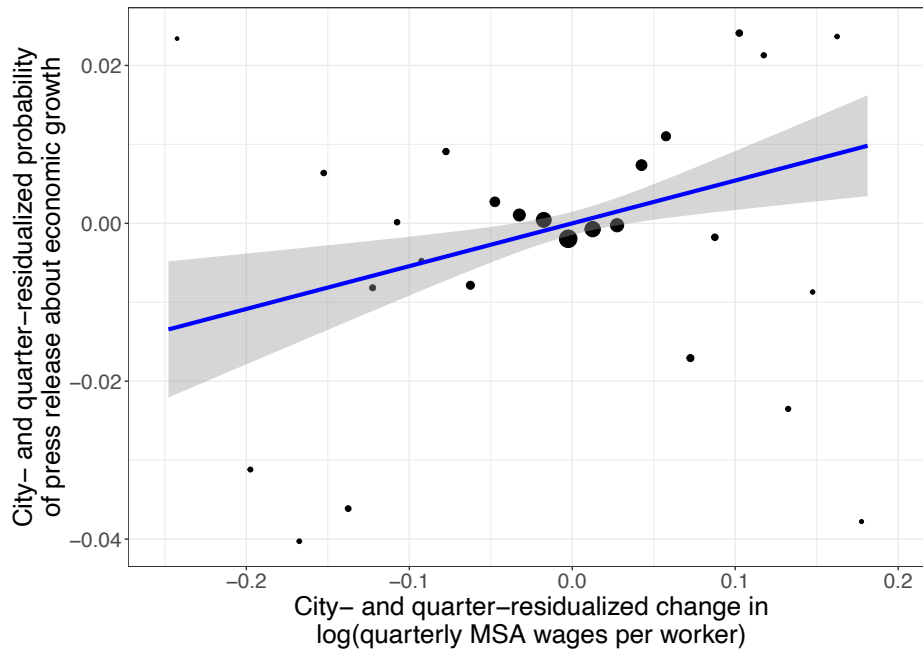Standard errors clustered by city and year-month

Figure A3: Change in MSA economic conditions and communication about economic growth. Open circles show the city- and quarter-residualized mean probability of a press release containing more than 10 words in the economic growth dictionary within bins of equal width along the horizontal axis, which represents the city- and quarter-residualized change in the log of quarterly wages per worker in that MSA. Size of circles is proportional to the number of press releases within each bin.
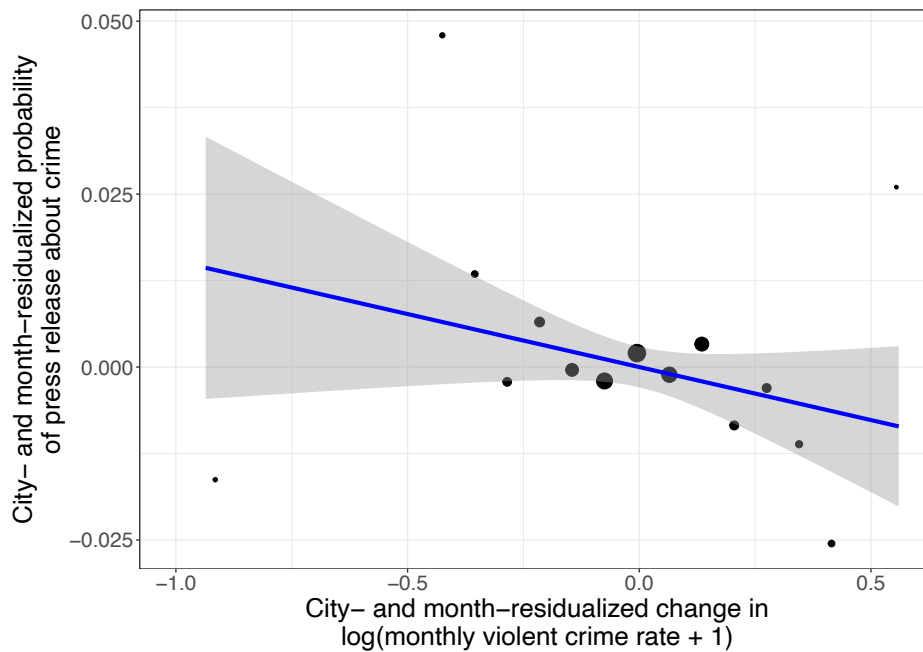
Figure A4: Change in city crime rate and communication about crime. Open circles show the city- and month-residualized mean probability of a press release containing more than 10 words in the crime dictionary within bins of equal width along the horizontal axis, which represents the city- and month-residualized change in the log of the monthly crime rate in that city. Size of circles is proportional to the number of press releases within each bin.

E Density of Press Releases

Another outcome of interest in relation to objective conditions and performance in cities is the aggregate number of press releases within a given time period — that is, the density of press releases. To analyze the effect of both economic conditions and crime on this outcome, I use similar aggregations of press releases at the temporal unit of measurement for the main independent variables, as in the main text. Using the city-time period aggregate datasets, I then conduct similar analyses to those used in the main analyses and regress the number of press releases a city released during that time period on the change in the log of wages, or the change in the log of the crime rate. As with the main analyses in the paper, I include city and time period fixed effects in a difference-in-differences approach. I show these results in Table A10, which indicates that both measures of objective conditions have effects on the density of cities' press releases that are statistically indistinguishable from zero.

Table A10: Effect of Economic Conditions and Crime on Density of Communication

	Dependent variable:	
	Number of press releases	
	(1)	(2)
Δ Log(quarterly wages per worker)	13.48	
	(13.63)	
Δ Log(violent crime rate per 100k + 1)		-1.38
		(2.59)
City fixed effects?	✓	✓
Quarter fixed effects?	✓	
Month fixed effects?		✓
Observations	1,310	519
R^2	0.65	0.83
Adjusted R^2	0.60	0.78

Note: *p<0.1; **p<0.05; ***p<0.01
Standard errors clustered by MSA and year-quarter,
in model 1 and by city and year-month in model 2