Supplemental Material: Increasing Intergovernmental Coordination to Fight Crime: Evidence from Mexico

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Appendix 1 Police reform in Mexico

Between 2010 and 2014, three different police reforms were proposed, debated, and rejected in the national congress, two of which had the central purpose of increasing coordination between local, state, and federal police. First, President Calderon proposed a police reform in 2010, called "Single Command" (Mando Unico), to the Mexican legislature in which the federal police would take operational command of state police, and state police of would take operational command over local police that passed certain quality controls and take the over local police that did not meet these controls (Instituto Belisario Domínguez 2015). The Executive Secretary of the National Public Security System explained at the time that under this reform "all the police forces in the country would be obligated to have better coordination in order to give citizens, anywhere in the national territory, better security conditions" (NTX 2010). This reform was specifically designed to increase coordination between federal, state, and local police, as they would share an identity, information, operations, control, and strategies, among others. The reform would affect all 32 state police and over 2,000 local police. The reform was killed in its congressional committee.

In 2014, President Peña Nieto proposed a bill called Unique Police Command (Mando Unico Policial) that would disband the over 1,800 local police that existed at the time and give all local level policing responsibilities to state police forces. Widespread opposition to this reform led to an alternative proposal called Mixed Police Command (Mando Policial Mixto), which would increase coordination between state and local police by allowing local police that met certain criteria to continue operating, though under the operational control of state police. Police that did not meet these criteria would be eliminated and replaced by the state police. Yet, like the two previous attempts, this proposed reform was not approved by its congressional committee and never made it to the floor for a vote.

Appendix 2 Police reform in Guanajuato

The police reform in Guanajuato was implemented under the governor Miguel Márquez Márquez, who served between 2012 and 2018. The governor was an advocate of the reform and encouraged all municipal governments to adopt the reform. The director of the State Police Agency, Alvar Cabeza de Vaca, also advocated the reform and presented it to various municipal governments. However, the state government did not impose its preferences on municipal governments, and instead, municipal governments were given the option to adopt the reform or not. Once a mayor and the municipal council voted to adopt the reform, they petitioned the state government, the agreement was signed, and the reform went into effect. This means that municipalities self-selected into the reform. This municipal autonomy is also highlighted by the fact that before 2021, all six municipalities that chose to retract the reform were able to do so.

To provide an example of how this worked, as was noted by an official press release in June of 2016, given the interest of the municipal government of San Luis de la Paz, the directors of Guanajuato's Public Security (Secretario de Seguridad Pública) and Home Affairs (Secretario de Gobierno) presented the reform to the municipal council. In this meeting, they also answered questions and clarified details to the municipal council. That same day the municipal council voted to adopt the reform (SSPEG 2016).

According to a few public statements made by state and municipal government officials, the key reasons for municipalities choosing to adopt the reform were security concerns. In particular, municipal government had concerns over worsening public security, limited budgets for municipal police, municipal police lacking the capacity to confront organized crime, citizen security demands in the face of increasing insecurity, and economic concerns over insecurity. Data shows that municipalities that adopted the reform had, on average, better established cartel presence, more cartels, and more cartel wars. However, they also had lower levels of violent and non-violent theft, and similar levels of homicides. So the adoption of the reform appears to be driven by exposure to the presence of cartels more than overall violence or crime. However, a statement by a mayor when seeking to adopt MUP suggests there was a change in the nature of the violence (rather than levels

of violence) which may have also prompted support for the reform. When discussing the economic impacts of insecurity that were pushing the mayor towards adopting the reform, he stated: "It got complicated precisely when [cartels] started leaving bodies in the municipality" (Contreras 2014).

While co-partisanship, particularly in Mexico, is often highlighted as an important factor that shapes intergovernmental cooperation and coordination, data suggests that it is not a key driver of the reform being adopted in Guanajuato. Guanajuato is a stronghold for the right-of-center PAN party, with about two-thirds of mayors being from the PAN in 2014/2015, when the reforms were adopted. This is the same ratio for municipalities that adopted the reform, which included PAN mayors and also mayors from rival parties (PRI and PRD). Partisanship therefore does not seem to be a main driver for the adoption of the reform. This is consistent with statements made by the current governor of Guanajuato, Diego Sinhue Rodríguez Vallejo, after being asked in 2022 why municipalities in the state had adopted the reforms. The governor stated that "it was a [reform] that was taken in desperation" due to security concerns (Bravo 2022).

A worry may be that this police reform happened in writing but not in practice, as happens routinely in Mexico and Latin America more broadly. Given that adopting the reform was a decision by municipal governments with the support of the state government, the reform was implemented and rather quickly when municipalities chose to enact it. For each municipality that implemented the reform, I include at least three different sources that verify its implementation. A crucial piece of evidence that the reform was actually implemented is that one of its central policies entails appointing a new municipal police chief who comes from the state police agency. For most municipalities that adopted the reform, I found municipal or state government news briefs and journalist reports on the swearing in ceremonies of these new police chiefs. However, information on the implementation of the reform is broader, and includes government or news outlets reporting on the arrival of state police to the municipalities, evaluations of the reform, news on the implementation, discontent with the reform, and arrests or seizures made by state and municipal police in coordinated operations. This last one was common, as the state

government often posted, and continues to post, information on successful operations against criminals undertaken by the Unique Police Commands in different municipalities.¹

Another crucial observation is that the time between municipalities formally agreeing to the police reform and the reform being implemented is very short. While information on the implementation of the reform was found for all municipalities, information on when the reforms were agreed on and signed by municipal and state governments is scarce. Information on the date that the reform was formally agreed to was only found for half of the municipalities that implemented the reform. For these municipalities, the reform begins to be implemented very quickly—from the same month to 3 months after the agreement was signed. There is one exception where a municipality took 15 months to implement the reform after signing it.

I attribute the actual and quick implementation of the reform to four key factors. First, the state government and state police were advocates of the reform. Second, municipal governments themselves chose whether to adopt the reform. Both of these conditions overcome a common reason behind failed police reforms in Latin America: partisan squabbles (Davis 2006). Third, while the reform reduced the autonomy of municipal police departments, these are typically weak institutions that are not veto players, and mayors have a high degree of formal and informal discretion over municipal police departments. These factors help overcome another common reason for failed police reforms in Latin America: police resistance (Fuentes 2005). Fourth, while the state police is a strong institution with much more influence and could act as a veto player, the reform did not threaten its autonomy. On the contrary, the reform strengthened this institution. Thus, the incentives that create reform gaps identified by González (2023) are not present in this case.

Figure A1 shows the map of Guanajuato and the municipalities that, at some point between January 1, 2000 and December 31, 2021, adopted Unique Police Command, only adopted Unique State Command and not Unique Police Command, and those that did not adopt any police reform. This is the sampling frame from which the treatment and

¹See here: https://boletines.guanajuato.gob.mx/.

control groups are drawn from (see next section).

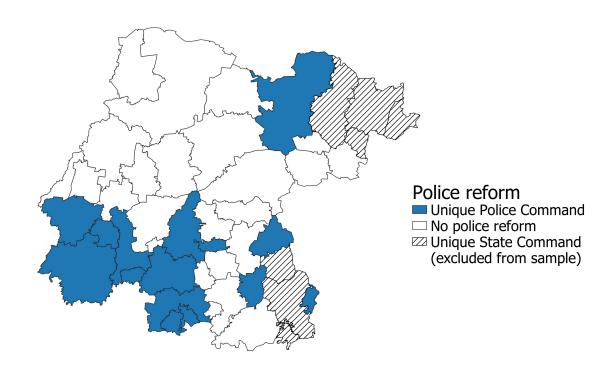


Figure A1: Municipalities in Guanajuato that adopted Unique Police Command at any point, only adopted Unique State Command, did not implement any police reform.

Despite evidence of the reform's implementation in various municipalities, detailed information on how the reform worked in each municipality is scarce beyond its key components. This lack of transparency tends to characterize law enforcement institutions and also appears to also stem from explicit efforts by state and municipal government officials. For example, not only are the agreements between the state and municipal governments not public, politicians themselves tend to keep details obscure. To illustrate, when the municipality of Salamanca enacted the reform, the press reported that the details of the agreement with the state government were presented and discussed in a private meeting with the municipal council. When asked about these details, the mayor stated that the information was confidential.

Appendix 2.1 Treatment anticipation

Anticipation bias could be present if cartels changed their behavior prior to the implementation of the reform. Of main concern is if the results are biased away from zero due to anticipation. This would mean cartels left, fought each other less, committed fewer violent crimes, and used more violence in anticipation of the treatment. While anticipation bias could be present, I believe it to be unlikely for three key reasons, which I outline here.

First, municipalities implemented the reform very soon after formally agreeing to it with state governments—from the same month to 3 months after the agreement was signed. There is one exception where a municipality took 15 months to implement the reform after signing it. This means that cartels had from days to three months to adjust their overall behavior enough to have sizable observable effects. This seems unlikely. Moreover, in the yearly panel, these anticipation effects are inconsequential since the reforms (with one exception) are implemented within the same year they were agreed on. In the monthly panel, this would mean 0-3 month anticipation, which I feel is negligible and would not be consequential for the results. Ideally, I would estimate an additional model setting the month of the agreement as the date treatment begins (as opposed to when it is implemented), but since the information on the agreements is not public for half the municipalities that adopted the reform, it would be difficult to estimate the models considering anticipation effects.

Second, one could argue that cartels may have had insider information that a municipality was considering agreeing to the reform, giving them more time to adjust their behavior than the time from the formal agreement and its implementation. Methodologically, if this was the case, the parallel trends shown in the main results would not hold. Substantively, many mayors had been publicly advocating for MUP for years, some of which implemented the reform and others that did not. This suggests that public statements in support of the reform did not provide a reliable signal to cartels either about which municipalities would adopt it or about when. Taken together, this possibility seems unlikely.

Third, neither state nor municipal agencies, nor cartels, nor citizen knew what to expect from the reform since it had never been implemented in the state. Even if cartels were able and sought to anticipate the reform, it is unclear how they would adjust given that it was a new and unknown reform. Cartels likely did not know whether it would be implemented, how it would be implemented, or what the consequences of its implementation would be. Given that cartels in Guanajuato are known to have some police officers, particularly municipal police officers, in their payroll, they may have believed that it would be business as usual even if the reform was adopted. Cartels deciding to leave a municipality or end a turf war with another cartel because a new police chief would be appointed seems unlikely, particularly given their success capturing police officers and the often incomplete implementation of police reforms in Mexico and Latin America.

Appendix 3 Identifying treatment and control units

The first step of the GSC method is identifying the treated and control units that will be used to create the counterfactuals. In total, 15 of Guanajuato's 46 municipalities adopted MUP at some point. However, two municipalities only adopted it for one year and then revoked it, one adopted it for three years and then revoked it, and one adopted it for four years and then revoked it. The last to adopt it, and the only one to do so after 2018, did so in October 2021, so it is excluded from the year-municipality sample. Therefore, the final municipality-year data has 10 municipalities that adopted the treatment, and the municipality-month data has 11. To construct the control group, I exclude any municipality that implemented MUE (six municipalities) and the municipality of Leon, which is by far the largest municipality in the state of Guanajuato. I exclude Leon because it does not share common support with the rest of the sample for most covariates, and the GSC method could use this data to erroneously extrapolate a counterfactual. This process leaves 23 municipalities in the control group that is used to create the counterfactuals. Appendix Table A1 lists these municipalities and whether they are part of the treatment or control group, while Appendix Figures A2 and A3 visualize the timing each treated unit received treatment.

Appendix 4 Treatment status

Table A1: List of municipalities in sample.

Municipality ID	Municipality name	Ever treated
11001	Abasolo	1
11008	Manuel Doblado	1
11012	Cuerámaro	1
11021	Moroleón	1
11023	Pénjamo	1
11035	Santa Cruz de Juventino Rosas	1
11039	Tarimoro	1
11041	Uriangato	1
11042	Valle de Santiago	1
11044	Villagrán	1
11046	Yuriria	1
11002	Acámbaro	0
11003	San Miguel de Allende	0
11007	Celaya	0
11009	Comonfort	0
11011	Cortazar	0
11013	Doctor Mora	0
11014	Dolores Hidalgo Cuna de la Independencia Nacional	0
11015	Guanajuato	0
11017	Irapuato	0
11018	Jaral del Progreso	0
11022	Ocampo	0
11024	Pueblo Nuevo	0
11025	Purísima del Rincón	0
11026	Romita	0
11028	Salvatierra	0
11029	San Diego de la Unión	0
11030	San Felipe	0
11031	San Francisco del Rincón	0
11032	San José Iturbide	0
11036	Santiago Maravatío	0
11037	Silao	0
11040	Tierra Blanca	0

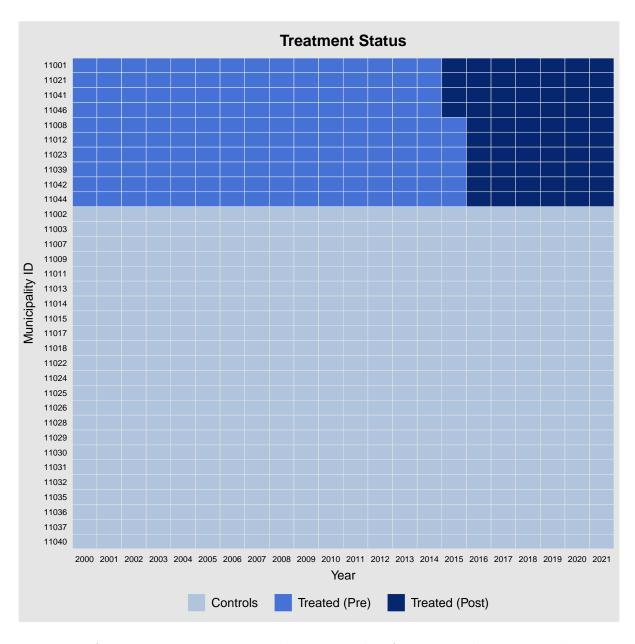


Figure A2: Treatment assignment by municipality for municipality-year analysis.

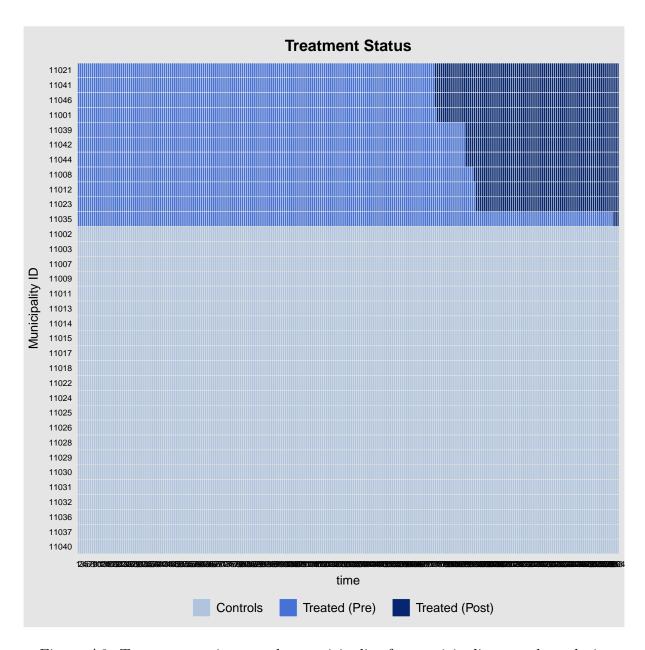


Figure A3: Treatment assignment by municipality for municipality-month analysis.

Appendix 5 Descriptive statistics

Table A2: Summary statistics for variables in analysis.

	n	mean	sd	min	max
Effect on Cartels (Municipality-year)					
MUP	726	0.088	0.284	0	1
Cartel presence strength	726	1.110	1.186	0	3
Number of cartels	726	0.908	1.115	0	5
Cartel war	726	0.275	0.447	0	1
Log population	726	11.078	0.919	8.805	13.293
Log economically inactive pop.	726	10.095	0.935	7.565	12.545
Governor from rival party	726	0.430	0.495	0	1
President from rival party	726	0.534	0.499	0	1
Governor and president from rival party	726	0.295	0.456	0	1
Individuals in local public security	726	174.843	185.047	0	1,280
Effect on Crime and Violence (Municipality-month)					
MUP	8,712	0.092	0.288	0	1
Violent theft rate	4,356	1.573	2.865	0	32.233
Non-violent theft rate	4,356	10.119	9.369	0	89.955
Homicide rate	8,316	1.713	4.272	0	104.948
Cartel-related homicide rate	8,316	0.753	2.315	0	59.970
Number of cartel cells	8,712	0.197	0.477	0	3
Number of weak cartels	8,712	0.556	0.790	0	4
Number of strong cartels	8,712	0.154	0.376	0	2
Cartel war	8,712	0.275	0.447	0	1
Log population	8,712	11.078	0.919	8.805	13.293
Log economically inactive pop.	8,712	10.095	0.934	7.565	12.545
Governor from rival party	8,712	0.430	0.495	0	1
President from rival party	8,712	0.534	0.499	0	1
Governor and president from rival party	8,712	0.295	0.456	0	1
Individuals in local public security	8,712	174.843	184.930	0	1,280

Appendix 6 Cartel activity in Guanajuato

The data on cartel presence in Guanajuato is from Alcocer (2023), and includes three datasets providing different information about the population of cartels operating in Guanajuato between January 2000 and December 2021: cartel geographic presence and strength of presence, descriptive cartel histories, and cartel dyad data on the relations between cartels (neutral, allied, rivals). For a more detailed discussion on definitions, measurement, data collection, and sources see Methodology document provided by Alcocer (2023). Table A3 lists all 16 cartels included in the datasets.

Full Name(s)	Abbreviation
Cartel de Sinaloa/Cartel del Pacifico	CDS
Organizacion Beltran Leyva/Cartel del Pacifico Sur	BLO
Mata Zetas/Los Antrax	MZ
Los Pelones	Pelones
Cartel La Union de Leon/La Union de Leon/Gente de Leon	CUL
Cartel Los Durango/Los Durango	CLD
Cartel Jalisco Nueva Generacion	CJNG
Cartel Nueva Plaza/Nueva Plaza	CNP
Cartel del 00	C00
Cartel Santa Rosa de Lima/Cartel de Guanajuato/Cartel del Marro	CSRL
La Familia Michoacana/La Familia	LFM
Los Caballeros Templarios	CT
Carteles Unidos	CU
Cartel del Golfo	CDG
Cartel de los Zetas/Los Zetas	Zetas
Grupo Sombra/Fuerzas Especiales Grupo Sombra	FEGS

Table A3: Criminal organizations included in MCO Guanajuato and the abbreviations used by the author.

Figure A4 maps notable cartel presence in Guanajuato in 2010 and 2020. The map on the left shows LFM and Zetas presence in 2010, and the map on the right shows CJNG and CSRL presence in 2020. The red line shows oil pipelines used to steal oil by cartels, which is a key control variable in the empirical models.

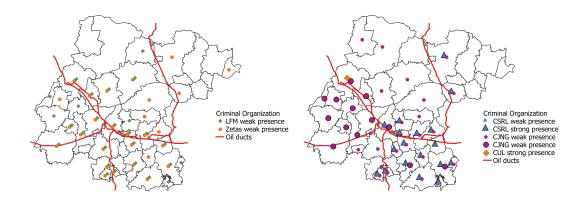


Figure A4: Cartel presence in Guanajuato in 2010 and 2020: (left) LFM and Zetas presence in 2010, and (right) CJNG and CSRL presence in 2020. Red lines show location of oil pipelines.

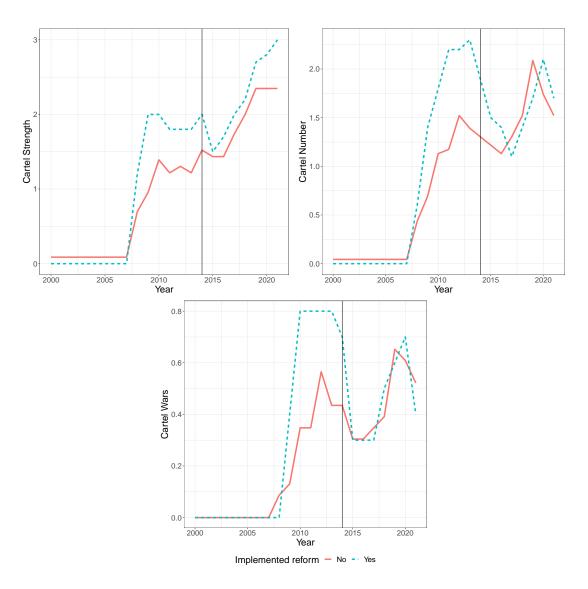


Figure A5: Cartel presence in Guanajuato, 2000-2021 by treatment group. Vertical line denotes time the first group of municipalities adopted the MUP reform.

Appendix 7 Outcome trends

This section presents the raw trends of the outcome variables. Figure A5 shows that municipalities that adopted the reform had, on average, better established cartel presence, more cartels, and more cartel wars. However, Figure A6 shows that they also had lower levels of violent and non-violent theft, and similar levels of homicides.

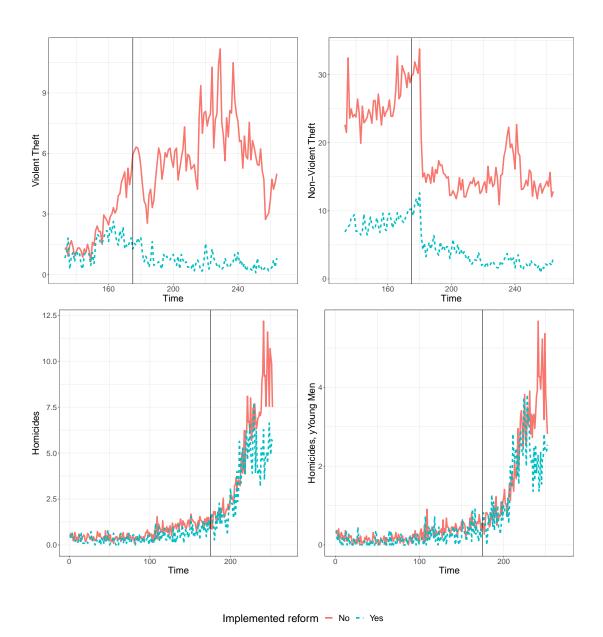


Figure A6: Crime trends in Guanajuato, 2000-2021 by treatment group. Vertical line denotes time the first group of municipalities adopted the MUP reform.

Appendix 8 Effect on cartels per period results

Table A4: ATT effect of increased intergovernmental coordination on cartel strength of presence per treatment period.

	ATT	S.E.	CI.lower	CI.upper	p.value	n.Treated
0	-0.265	0.174	-0.605	0.076	0.128	0
1	-0.439	0.323	-1.073	0.195	0.175	10
2	-0.362	0.336	-1.020	0.295	0.280	10
3	-0.629	0.275	-1.169	-0.089	0.022	10
4	-0.556	0.255	-1.056	-0.056	0.029	10
5	-0.199	0.283	-0.755	0.356	0.481	10
6	-0.011	0.307	-0.613	0.591	0.972	10
7	-0.043	0.456	-0.936	0.850	0.924	4

Table A5: ATT effect of increased intergovernmental coordination on number of cartels per treatment period.

	ATT	S.E.	CI.lower	CI.upper	p.value	n.Treated
0	-0.217	0.149	-0.510	0.076	0.146	0
1	-0.354	0.271	-0.885	0.177	0.191	10
2	-0.775	0.299	-1.362	-0.189	0.010	10
3	-1.012	0.277	-1.555	-0.470	0.0003	10
4	-1.167	0.320	-1.793	-0.540	0.0003	10
5	-0.919	0.273	-1.455	-0.384	0.001	10
6	-0.372	0.232	-0.826	0.082	0.109	10
7	-0.176	0.348	-0.858	0.506	0.613	4

Table A6: ATT effect of increased intergovernmental coordination on cartel wars per treatment period.

	ATT	S.E.	CI.lower	CI.upper	p.value	n.Treated
0	-0.062	0.071	-0.201	0.077	0.385	0
1	-0.282	0.132	-0.541	-0.023	0.033	10
2	-0.383	0.153	-0.683	-0.083	0.012	10
3	-0.346	0.144	-0.627	-0.064	0.016	10
4	-0.424	0.133	-0.684	-0.164	0.001	10
5	-0.395	0.157	-0.703	-0.087	0.012	10
6	-0.429	0.159	-0.742	-0.117	0.007	10
7	-0.278	0.260	-0.788	0.233	0.287	4

Appendix 9 Effect on crime and violence per period results

Table A7: ATT effect of increased intergovernmental coordination on violent theft rates per treatment period.

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Months relative to treatment	ATT	S.E.	CI.lower	CI.upper	p.value	n.Treated
0	-1.018	0.575	-2.146	0.110	0.077	0
1	-1.397	0.901	-3.162	0.369	0.121	11
2	-1.166	0.845	-2.822	0.490	0.168	11
$\begin{array}{c}2\\3\\4\end{array}$	-1.893	0.776	-3.415	-0.372	0.015	11
4	-1.752	0.779	-3.278	-0.226	0.024	10
5	-1.271	0.862	-2.961	0.418	0.140	10
6	-1.123	0.827	-2.744	0.497	0.174	10
7	-1.310	0.837	-2.950	0.330	0.118	10
8	-1.220	0.807	-2.801	0.362	0.131	10
9	-1.469	0.786	-3.009	0.071	0.062	10
10	-1.404	0.758	-2.890	0.082	0.064	10
11	-1.467	0.739	-2.917	-0.018	0.047	10
$\frac{12}{13}$	-1.737 -1.293	$0.835 \\ 0.848$	-3.374 -2.955	$-0.101 \\ 0.370$	$0.037 \\ 0.128$	10 10
14	-1.293	0.763	-3.103	-0.112	0.128 0.035	10
15	-1.162	$0.705 \\ 0.725$	-2.583	0.259	0.035 0.109	10
16	-1.723	$0.725 \\ 0.865$	-3.418	-0.028	$0.109 \\ 0.046$	10
17	-1.175	1.005	-3.145	0.795	0.242	10
18	-1.469	0.904	-3.241	0.303	0.104	10
19	-1.852	0.765	-3.351	-0.353	0.015	10
20	-1.804	0.821	-3.412	-0.195	0.028	10
$\overline{21}$	-1.567	0.880	-3.292	0.158	0.075	10
22	-1.762	0.969	-3.661	0.138	0.069	10
23	-1.641	1.096	-3.788	0.507	0.134	10
24	-2.272	1.103	-4.434	-0.109	0.039	10
25	-0.335	1.025	-2.344	1.674	0.744	10
26	-0.987	1.068	-3.080	1.106	0.355	10
27	-2.111	1.166	-4.396	0.175	0.070	10
28	-2.643	1.227	-5.049	-0.238	0.031	10
29	-2.135	1.089	-4.270	-0.001	0.050	10
30	-1.937	1.282	-4.450	0.577	0.131	10
31	-1.437	1.264	-3.914	1.039	0.255	10
32	-1.839	1.129	-4.052	0.375	0.104	10
33	-2.584	1.210	-4.956	-0.212	0.033	10
$\frac{34}{35}$	-1.924	1.291	-4.453	0.605	0.136	10
	-2.786	1.551	-5.826	0.255	0.073	10
36	-2.193 -2.049	$1.208 \\ 1.098$	-4.561 -4.202	$0.176 \\ 0.103$	$0.070 \\ 0.062$	10 10
37 38 39	-1.648	0.976	-4.202 -3.561	$0.103 \\ 0.264$	0.002 0.091	10
30	-1.575	1.301	-4.124	0.204 0.975	0.031 0.226	10
40	-2.523	1.271	-5.014	-0.031	0.220 0.047	10
41	-2.028	1.157	-4.446	0.089	0.060	10
42	-2.323	1.354	-4.976	0.330	0.086	10
43	-2.588	1.570	-5.666	0.489	0.099	10
44	-2.637	1.500	-5.576	0.302	0.079	10
45	-2.310	1.387	-5.029	0.409	0.096	10
46	-2.260	1.322	-4.852	0.332	0.087	10
47	-2.244	1.163	-4.524	0.036	0.054	10
48	-2.813	1.585	-5.920	0.295	0.076	10
49	-1.444	1.275	-3.943	1.056	0.258	10
50	-2.613	1.327	-5.214	-0.012	0.049	10
51	-1.348	1.033	-3.374	0.677	0.192	10
$\frac{52}{2}$	-2.011	1.067	-4.102	0.081	0.060	10
53	-2.387	1.155	-4.651	-0.122	0.039	10
54	-2.329	1.427	-5.126	0.468	0.103	10
55 56	-2.991	1.447	-5.827	-0.155	0.039	10
<u>56</u>	-2.246	1.050	-4.303	-0.189	0.032	10
57 50	-1.593	0.895	-3.348	0.161	0.075	10
58 50	-2.456	0.906	-4.231 4.207	-0.682	0.007	10
59 60	-2.261 -2.048	$0.992 \\ 1.056$	-4.207 -4.117	-0.316 0.021	$0.023 \\ 0.052$	10 10
61	-2.048	1.030 1.043	-4.117 -4.097	-0.008	0.032 0.049	10
62	-2.055 -2.657	1.045 1.171	-4.097 -4.952	-0.008 -0.363	0.049 0.023	10
63	-2.037 -2.126	1.171 1.429	-4.932 -4.927	0.675	0.023 0.137	10
64	-1.588	1.429 1.015	-3.578	0.402	0.137	10
65	-1.972	0.911	-3.758	-0.186	0.110	10
66	-1.594	0.816	-3.194	0.006	0.050 0.051	10
67	-1.765	0.708	-3.154	-0.377	0.013	10
68	-1.388	0.685	-2.730	-0.045	0.043	10
69	-1.371	0.738	-2.816	0.075	0.063	10
70	-1.854	0.791	-3.404	-0.304	0.019	10
			-			

Table A8: ATT effect of increased intergovernmental coordination on non-violent theft rates per treatment period.

Months relative to treatment	ATT	S.E.	CI.lower	CI.upper	p.value	n.Treated
0	-1.939	1.785	-5.438	1.560	0.277	0
1	-3.260	1.772	-6.732	0.212	0.066	11
2	-2.253	1.701	-5.587	1.080	0.185	11
$\frac{3}{4}$	-0.952	2.142	-5.151	3.246	$0.657 \\ 0.390$	$\begin{array}{c} 11 \\ 10 \end{array}$
5	-1.765 -2.773	$2.055 \\ 2.091$	-5.793 -6.871	$2.263 \\ 1.325$	$0.390 \\ 0.185$	10
6	-1.113	1.971	-4.975	2.749	$0.163 \\ 0.572$	10
7	2.140	1.883	-1.550	5.831	0.256	10
8	0.172	2.040	-3.826	4.170	0.933	10
9	-0.218	1.718	-3.585	3.150	0.899	10
10	-0.149	1.527	-3.142	2.845	0.922	10
11	-0.858	1.711	-4.212	2.495	0.616	10
12	1.134	1.808	-2.411	4.678	0.531	10
13	1.579	1.899	-2.143	5.301	0.406	10
14 15	$1.375 \\ 1.622$	2.040	-2.623	5.373	0.500	10
16	0.543	$\frac{2.220}{1.831}$	-2.730 -3.046	$5.974 \\ 4.132$	$0.465 \\ 0.767$	10 10
17	2.397	$\frac{1.031}{2.077}$	-1.674	6.468	0.767	10
18	0.647	2.196	-3.656	4.951	0.768	10
19	0.584	1.708	-2.764	3.931	0.733	10
20	0.534	2.087	-3.557	4.625	0.798	10
21	-0.081	1.658	-3.330	3.169	0.961	10
22	0.063	1.791	-3.447	3.573	0.972	10
23	1.535	1.791	-1.975	5.045	0.391	10
24	-0.021	1.541	-3.041	2.999	0.989	10
25	2.200	1.709	-1.150	5.551	0.198	10
$\frac{26}{27}$	-0.748 -0.580	$\frac{1.877}{1.882}$	-4.426 -4.267	$\frac{2.930}{3.108}$	$0.690 \\ 0.758$	10 10
28	-1.232	1.836	-4.831	2.367	0.738 0.502	10
29	-1.581	1.862	-5.230	$\frac{2.367}{2.067}$	0.396	10
30	-1.735	1.684	-5.035	1.565	0.303	10
31	-1.749	1.637	-4.958	1.459	0.285	10
32	-2.574	1.632	-5.772	0.625	0.115	10
33	-1.418	1.855	-5.053	2.217	0.444	10
34	-1.410	1.864	-5.063	2.244	0.449	10
35	-2.685	1.879	-6.369	0.999	0.153	10
36	-0.573	1.782	-4.066	2.920	0.748	10
37	-0.354	1.759	-3.801	3.093	0.841	10
38 39	-4.083 -3.033	$\frac{1.808}{1.818}$	-7.626 -6.595	$-0.539 \\ 0.530$	$0.024 \\ 0.095$	10 10
40	-3.033 -3.932	1.865	-0.595 -7.588	-0.276	0.095 0.035	10
41	-2.191	1.830	-5.778	1.397	0.231	10
42	-2.690	1.912	-6.438	1.058	0.159	10
43	-1.740	1.887	-5.439	1.959	0.357	10
44	-4.201	2.011	-8.141	-0.260	0.037	10
45	-4.102	2.044	-8.109	-0.095	0.045	10
46	-3.544	1.871	-7.210	0.123	0.058	10
47	-4.226	1.846	-7.844	-0.609	0.022	10
48	-3.116	2.080	-7.194	0.961	0.134	10
49 50	-4.897 -2.293	$\frac{1.780}{1.771}$	-8.386 -5.765	-1.408 1.179	$0.006 \\ 0.196$	10 10
50 51	-2.293 -3.697	1.636	-6.904	-0.490	$0.190 \\ 0.024$	10
52	-1.942	1.711	-5.296	1.412	0.256	10
53	-1.213	1.691	-4.528	2.102	0.473	10
54	-2.248	1.652	-5.487	0.991	0.174	10
55	-1.626	1.534	-4.632	1.381	0.289	10
56	-1.280	1.664	-4.541	1.981	0.442	10
57	-0.637	1.621	-3.813	2.540	0.695	10
58	-2.549	1.654	-5.790	0.693	0.123	10
59	-2.928	1.724	-6.307	0.451	0.089	10
60	-1.562	1.848	-5.184	2.060	0.398	10
61	-2.868	1.760	-6.316	0.581	0.103	10
62 63	-2.817 -4.344	$\frac{1.689}{1.982}$	-6.127 -8.229	0.492	$0.095 \\ 0.028$	10
64	-4.344 -2.054	$\frac{1.982}{1.802}$	-8.229 -5.586	-0.460 1.477	0.028 0.254	10 10
65	-2.034 -2.418	1.802 1.963	-6.264	1.477 1.429	$0.234 \\ 0.218$	10
66	-2.418 -4.071	1.870	-7.736	-0.407	0.218 0.029	10
67	-2.789	1.840	-6.395	0.817	0.029 0.130	10
68	-2.703	1.793	-6.218	0.811	0.132	10
69	-1.614	1.626	-4.801	1.573	0.321	10
	-0.147	1.614	-3.310	3.016	0.928	10

Table A9: ATT effect of increased intergovernmental coordination on homicide rates per treatment period.

period.						
Months relative	ATT	S.E.	CI.lower	CI.upper	p.value	n.Treated
to treatment	0.741	0.480	1 001	0.110	0.001	
0 1	-0.741 0.169	$0.438 \\ 0.466$	-1.601 -0.745	0.118 1.084	$0.091 \\ 0.716$	0 10
2	1.571	0.508	0.576	2.567	0.710	10
$\frac{2}{3}$	1.597	0.628	0.365	2.828	0.011	10
4	0.665	0.472	-0.261	1.591	0.159	10
5	0.476	0.489	-0.482	1.434	0.330	10
6	-0.065	0.582	-1.206	1.075	0.911	10
7	0.463	0.577	-0.668	1.595	0.422	10
8 9	0.047	0.609	-1.147	1.241	0.939	10
10	$\frac{2.189}{1.104}$	$0.541 \\ 0.560$	$\frac{1.129}{0.006}$	$3.250 \\ 2.202$	$0.0001 \\ 0.049$	10 10
11	0.908	0.630	-0.327	$\frac{2.202}{2.144}$	0.150	10
12	0.275	0.715	-1.126	1.677	0.700	10
13	-0.012	0.612	-1.211	1.187	0.984	10
14	-0.295	0.664	-1.597	1.007	0.657	10
15	-0.286	0.717	-1.691	1.118	0.689	10
16	0.702	0.697	-0.665	2.069	0.314	10
17 18	-1.352 -0.601	$0.753 \\ 0.754$	-2.828 -2.079	$0.123 \\ 0.878$	$0.072 \\ 0.426$	10 10
19	2.665	0.786	1.124	4.207	0.420 0.001	10
20	-0.492	0.797	-2.054	1.070	0.537	10
21	2.909	0.768	1.403	4.415	0.0002	10
22	1.303	0.751	-0.170	2.775	0.083	10
23	-1.793	0.848	-3.454	-0.131	0.034	10
24	0.230	0.899	-1.532	1.992	0.798	10
$\begin{array}{c} 25 \\ 26 \end{array}$	4.036	1.001	2.075 -2.438	5.997	0.0001	10 10
$\begin{array}{c} 20 \\ 27 \end{array}$	-0.531 -2.024	$0.973 \\ 1.024$	-2.436 -4.031	$1.375 \\ -0.017$	$0.585 \\ 0.048$	10
28	2.553	1.552	-0.489	5.595	0.100	10
$\frac{1}{29}$	-1.113	1.187	-3.438	1.213	0.348	10
30	1.777	1.196	-0.568	4.122	0.137	10
31	2.508	1.115	0.323	4.692	0.024	10
32	2.067	1.067	-0.024	4.158	0.053	10
$\frac{33}{34}$	$0.249 \\ 1.989$	$1.736 \\ 1.292$	-3.153 -0.543	$\frac{3.651}{4.521}$	$0.886 \\ 0.124$	10 10
35	1.404	1.292 1.294	-1.131	3.939	0.124 0.278	10
36	0.425	1.082	-1.696	2.547	0.694	10
37	2.059	0.960	0.178	3.940	0.032	10
38	2.967	1.254	0.511	5.424	0.018	10
39	0.275	1.420	-2.509	3.058	0.847	10
40	2.591	1.264	0.114	5.068	0.040	10
$\begin{array}{c} 41 \\ 42 \end{array}$	$0.117 \\ 0.403$	$1.152 \\ 1.115$	-2.141 -1.782	$2.375 \\ 2.588$	$0.919 \\ 0.718$	10 10
43	1.246	1.113 1.147	-1.702	3.494	$0.713 \\ 0.277$	10
44	2.098	1.347	-0.542	4.738	0.119	10
45	1.000	1.370	-1.685	3.686	0.465	10
46	4.904	1.361	2.236	7.572	0.0003	10
47	-1.379	1.576	-4.468	1.710	0.382	10
48	0.077	1.916	-3.679	3.832	0.968	10 10
49 50	$1.533 \\ 1.744$	$1.355 \\ 1.486$	-1.123 -1.169	$4.188 \\ 4.656$	$0.258 \\ 0.241$	10
51	1.832	1.244	-0.605	4.270	0.141	10
$5\overline{2}$	4.543	1.357	1.883	7.204	0.001	10
53	1.577	1.643	-1.642	4.797	0.337	10
54	2.163	1.617	-1.006	5.333	0.181	10
55	2.341	1.768	-1.124	5.806	0.185	10
56 57	0.762	1.685	-2.541	4.065	0.651	10
57 58	-0.177 -1.574	$1.536 \\ 1.542$	-3.187 -4.597	$\frac{2.833}{1.449}$	$0.908 \\ 0.308$	10 10
59	0.101	1.805	-3.436	3.639	0.955	8
60	-2.359	2.524	-7.305	2.587	0.350	$\tilde{7}$
61	-2.586	2.130	-6.760	1.589	0.225	7 7 7
62	-0.195	2.046	-4.206	3.816	0.924	7
63	1.599	1.879	-2.084	5.282	0.395	7
64 65	-0.414	2.190	-4.706 5.252	3.878	0.850	4
$\begin{array}{c} 65 \\ 66 \end{array}$	-0.244 2.529	$\frac{2.606}{2.512}$	-5.352 -2.395	$4.864 \\ 7.453$	$0.925 \\ 0.314$	$\frac{4}{4}$
67	-1.537	$\frac{2.512}{2.519}$	-6.474	3.400	0.514	4
68	-2.570	1.981	-6.453	1.312	0.194	4
69	0.005	2.106	-4.123	4.133	0.998	4
70	0.792	1.918	-2.968	4.552	0.680	4

Table A10: ATT effect of increased intergovernmental coordination on cartel-related homicide rates per treatment period.

Months relative to treatment	ATT	S.E.	CI.lower	CI.upper	p.value	n.Treated
0	-0.087	0.244	-0.566	0.392	0.722	0
1	-0.061	0.321	-0.691	0.569	0.850	10
$\frac{2}{3}$	$0.726 \\ 0.494$	$0.326 \\ 0.297$	0.086 -0.088	$1.366 \\ 1.077$	$0.026 \\ 0.096$	10 10
4	-0.103	0.313	-0.716	0.511	0.743	10
5	0.142	0.345	-0.533	0.818	0.680	10
6	-0.324	0.347	-1.004	0.356	0.350	10
7	0.124	0.364	-0.590	0.839	0.733	10
8 9	-0.309 1.258	$0.403 \\ 0.310$	-1.099 0.651	$0.480 \\ 1.866$	$0.442 \\ 0.00005$	10 10
10	1.196	0.399	0.415	1.978	0.003	10
11	0.695	0.368	-0.026	1.416	0.059	10
12	0.410	0.361	-0.296	1.117	0.255	10
$\frac{13}{14}$	0.161 -0.126	$0.334 \\ 0.422$	-0.493 -0.954	$0.815 \\ 0.702$	$0.630 \\ 0.765$	10 10
15	0.390	0.422 0.425	-0.443	1.224	$0.765 \\ 0.359$	10
16	0.438	0.428	-0.402	1.277	0.307	10
17	-0.398	0.406	-1.192	0.397	0.327	10
18	0.236	0.355	-0.461	0.932	0.507	10
19	$1.120 \\ 0.420$	0.555	0.033	$\frac{2.208}{1.381}$	0.043	10
$\frac{20}{21}$	1.925	$0.490 \\ 0.554$	$-0.540 \\ 0.840$	$\frac{1.361}{3.010}$	$0.391 \\ 0.001$	10 10
$\frac{21}{22}$	-0.004	0.482	-0.948	0.940	0.994	10
23	-0.635	0.510	-1.634	0.364	0.213	10
24	0.159	0.586	-0.989	1.307	0.786	10
25	2.238	0.590	1.082	$\frac{3.395}{1.025}$	0.0001	10
$\frac{26}{27}$	-0.164 -1.254	$0.612 \\ 0.570$	-1.363 -2.370	1.035 -0.137	$0.789 \\ 0.028$	10 10
28	0.736	1.035	-1.292	2.764	0.477	10
29	-0.954	0.865	-2.649	0.742	0.270	10
30	1.918	1.015	-0.071	3.907	0.059	10
31	1.957	0.843	0.304	$3.610 \\ 1.964$	0.020	10
$\frac{32}{33}$	$0.849 \\ 0.121$	$0.569 \\ 1.306$	-0.265 -2.439	$\frac{1.964}{2.682}$	$0.135 \\ 0.926$	10 10
34	0.732	0.808	-0.853	2.316	0.365	10
35	0.705	1.132	-1.514	2.925	0.533	10
36	1.185	0.784	-0.353	2.722	0.131	10
37 38	1.753 1.599	$0.730 \\ 0.781$	$0.322 \\ 0.068$	$3.184 \\ 3.130$	$0.016 \\ 0.041$	10 10
39	0.213	1.041	-1.827	$\frac{3.130}{2.253}$	0.041 0.838	10
40	2.168	0.764	0.670	3.666	0.005	10
41	0.219	0.871	-1.488	1.927	0.801	10
42	0.234	0.714	-1.165	1.633	0.743	10
$\frac{43}{44}$	$0.504 \\ 0.621$	$0.628 \\ 0.954$	-0.726 -1.249	$1.734 \\ 2.490$	$0.422 \\ 0.515$	10 10
45	0.021 0.460	0.780	-1.068	1.988	0.555	10
46	1.498	0.806	-0.081	3.078	0.063	10
47	0.204	0.948	-1.654	2.063	0.829	10
48	-0.470	1.357	-3.130	2.191	0.729	10
49 50	0.329 -0.221	$0.973 \\ 1.491$	-1.578 -3.144	$2.236 \\ 2.701$	$0.735 \\ 0.882$	10 10
51	0.494	0.892	-1.256	2.243	0.580	10
52	2.059	0.872	0.350	3.768	0.018	10
53	0.351	0.963	-1.537	2.240	0.715	10
54 55	$0.165 \\ 1.216$	$\frac{1.080}{1.209}$	-1.951 -1.154	$\frac{2.281}{3.586}$	$0.878 \\ 0.315$	10 10
56	-0.286	1.083	-2.408	1.836	0.313 0.792	10
57	-0.394	0.900	-2.158	1.369	0.661	10
58	-0.323	0.889	-2.065	1.418	0.716	10
59	0.474	1.179	-1.836	2.784	0.688	8 7
60 61	-1.160 -1.124	$1.531 \\ 1.211$	-4.160 -3.498	$1.840 \\ 1.250$	$0.449 \\ 0.354$	7 7
62	0.261	1.211 1.023	-3.498 -1.744	$\frac{1.250}{2.265}$	0.334 0.799	$\frac{7}{7}$
63	1.471	0.810	-0.117	3.060	0.069	7
64	-0.286	1.207	-2.651	2.080	0.813	4
65 66	-0.075	1.587	-3.185	3.035	0.962	4
66 67	-0.039	1.369	-2.723	2.644	0.977	4
67 68	-0.323 -0.297	$\frac{1.414}{1.103}$	-3.093 -2.459	$\frac{2.448}{1.865}$	$0.820 \\ 0.788$	$\frac{4}{4}$
69	-1.414	1.940	-5.217	2.389	0.466	4
70	-0.353	2.180	-4.625	3.919	0.871	4

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