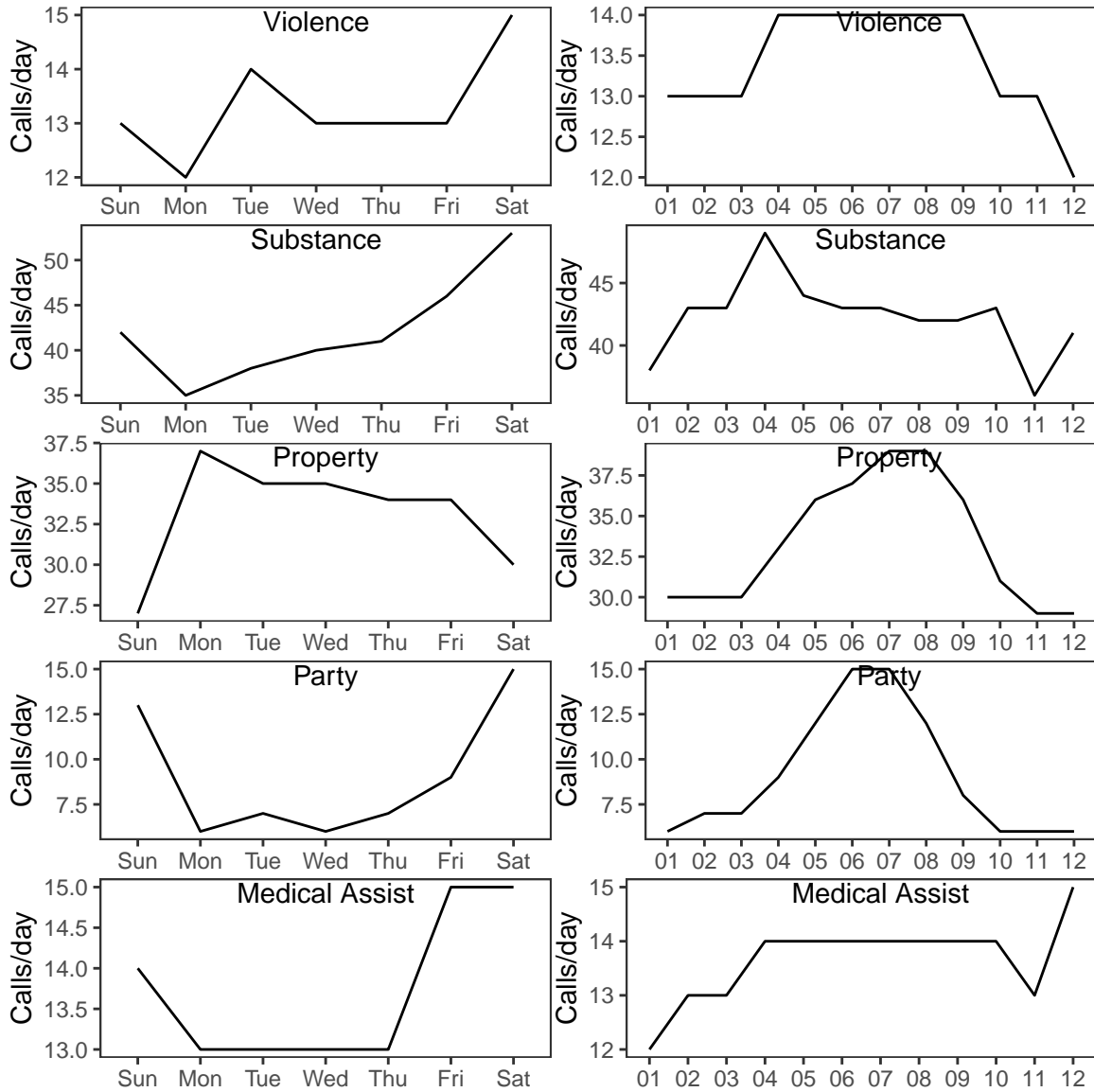


Supplementary Information for: Universal Cash and Crime

Appendix A Appendix Tables and Figures

Figure A.1: Median Incidents per Day, by day of week and month of year (2000-2016)



Violence includes: Homicide, assault, and sexual assault. Two categories of substance abuse are presented for robustness. Substance category includes: incidents of driving while intoxicated, drunk and disorderly, drug possession, hit-and-runs, and liquor law violations. Property crime includes burglary, robbery, theft, and shoplifting. Party includes noise violation and loud/disruptive party calls. Medical assistance calls only include police assistance of medical aid for another department.

Table A.1: Anchorage Police Call Codes, Daily Average Count, and Assigned Category

Outcome Category	Incident Code	Average Daily Incidents
Violence	Sexual Assault (in progress)	0.05
	Homicide	0.05
	Assault with Weapon	0.76
	Sexual Assault	1.32
	Sexual Assault of Minor	1.63
	Assault	9.82
Substance (Part)	Driving While Intoxicated	4.69
	Drugs or Forged Perscription	5.45
	Drunk Transport	7.75
	Drunk Problem	18.45
Substance (Full)	Hit And Run with Injury	0.26
	Liquor Law Violation	1.48
	Driving While Intoxicated	4.69
	Drugs or Forged Perscription	5.45
	Hit And Run	5.50
	Drunk Transport	7.75
	Drunk Problem	18.45
Property	Stolen Property	0.03
	Strongarm Robbery	0.50
	Robbery	0.68
	Burglary in Progress	1.09
	Stolen Vehicle	3.25
	Shoplifter	4.13
	Burglary	4.47
	Theft	19.55
Party	Loud Disruptive Party	2.44
	Noise Violation	7.64
Medical	Medic Assist	14.38

Compared to the Federal Bureau of Investigation’s Uniform Crime Report (UCR), our aggregation differs in three ways. First, UCR reports robbery as a violent crime whereas we categorize it as a property crime (as it is financially motivated). Second, UCR includes arson as a property crime, but because it does not provide direct financial gain to the perpetrator, we omit it. Finally, UCR does not track substance abuse incidents. Therefore, in consultation with APD, we determined seven incidents to be associated with substance abuse. Hit-and-run violations have been shown to be associated with alcohol consumption ?. Liquor law violations tend to be associated with illegal possession or sale of alcohol, rather than excessive consumption. For robustness, in Appendix tables, we provide estimates for both an inclusive (Full) and restrictive (Part) categorization of incidents as substance abuse that differ by hit-and-run and liquor law violations. As these yield qualitatively similar results, in the main text only Substance (Full) results are presented.

Table A.2: Change in average daily calls, first full PFD day, 2000-2016

	<i>Change in daily incident count by category:</i>					
	Violence	Substance (Part)	Substance (Full)	Property	Party	Medical Assist
	(1)	(2)	(3)	(4)	(5)	(6)
First Full PFD Day	-0.087 (0.948)	5.993*** (1.989)	6.163*** (1.964)	-0.656 (1.504)	-1.022* (0.603)	0.914 (0.885)
Mil. Pay Day/Day After	-0.120 (0.210)	1.115*** (0.418)	1.191*** (0.447)	0.176 (0.333)	0.207 (0.189)	-0.182 (0.204)
New Years Day/Eve	5.536*** (0.818)	11.971*** (1.628)	13.847*** (1.756)	-2.818** (1.406)	2.780*** (0.958)	1.042 (0.838)
Super Bowl	0.571 (1.037)	-0.144 (2.229)	0.690 (2.226)	-3.633*** (0.982)	-1.208 (0.880)	-0.837 (1.128)
Iditarod	-0.960 (1.007)	4.486* (2.707)	4.292 (2.796)	-0.998 (0.846)	-2.833*** (1.058)	-0.199 (0.791)
St Patricks Day	0.693 (0.796)	1.234 (1.379)	-0.278 (1.560)	2.368 (2.289)	-0.300 (0.692)	-0.497 (1.002)
Cinco de Mayo	0.250 (0.991)	2.720 (2.061)	3.848* (2.305)	0.493 (1.656)	0.565 (0.984)	-0.715 (1.364)
July 4th	1.060 (0.767)	5.187*** (1.809)	3.678* (1.960)	-8.259*** (1.704)	4.950*** (1.249)	-1.009 (1.112)
Labor Day Weekend	-0.304 (0.844)	1.992 (1.656)	1.705 (1.905)	-3.171*** (1.091)	1.029 (0.917)	0.508 (0.556)
Columbus Day Weekend	1.254* (0.753)	-0.109 (1.345)	-0.028 (1.384)	1.615 (1.086)	-1.658*** (0.609)	0.288 (0.752)
Halloween and Weekend	0.509 (0.665)	-1.305 (1.128)	-0.748 (1.338)	-1.561 (1.388)	2.558*** (0.598)	0.605 (0.450)
Thanksgiving	-1.798** (0.814)	-1.419 (1.573)	-3.259* (1.766)	-10.119*** (1.497)	1.369* (0.780)	0.365 (0.724)
Christmas	-2.489*** (0.893)	-6.078*** (1.799)	-9.911*** (1.841)	-12.979*** (1.809)	-0.226 (0.699)	-1.815** (0.816)
Federal Holiday	-0.991** (0.422)	0.408 (0.759)	-0.303 (0.840)	-5.475*** (0.688)	3.663*** (0.425)	0.038 (0.384)
Unadjusted P-value	[0.927]	[0.003]	[0.002]	[0.663]	[0.090]	[0.302]
Bonferroni P-value	[1.000]	[0.016]	[0.010]	[1.000]	[0.540]	[1.000]
Weather	Yes	Yes	Yes	Yes	Yes	Yes
Day of Week Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Day-of-Month 5th Order Poly. Trend	Yes	Yes	Yes	Yes	Yes	Yes
Month x Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,193	6,193	6,193	6,193	6,193	6,193
Adjusted R ²	0.092	0.604	0.602	0.482	0.693	0.516

Note: Newey-West Robust Errors in parentheses. Unadjusted p-values: *p<0.1; **p<0.05; ***p<0.01

Primary specification estimates from Eq. ?? with holiday and special date effects presented for reference. Violence includes: Homicide, assault, and sexual assault. Two categories of substance abuse are presented for robustness. Substance (Part) includes: driving while intoxicated, drunk and disorderly, and drug possession. Substance (Full) category includes: incidents of driving while intoxicated, drunk and disorderly, drug possession, hit-and-runs, and liquor law violations. Property crime includes burglary, robbery, theft, and shoplifting. Party includes noise violation and loud/disruptive party calls. Medical assistance calls only include police assistance of medical aid for another department. Complete list of holidays accompanies discussion of Eq. ?. Weather includes third order effects for temperature, precipitation, and snow depth. Bonferroni p-values (for PFD coefficient) correct for multiple hypothesis testing.

Table A.3: Change in average daily calls, first full PFD day, Parsimonious Controls

	<i>Change in daily incident count by category:</i>					
	Violence	Substance (Part)	Substance (Full)	Property	Party	Medical Assist
	(1)	(2)	(3)	(4)	(5)	(6)
First Full PFD Day	-0.124 (0.957)	7.830*** (2.043)	7.941*** (2.062)	-0.604 (1.454)	-0.906 (0.627)	1.205 (0.915)
Day of Week: Monday	-1.092*** (0.213)	-7.127*** (0.331)	-7.448*** (0.360)	9.789*** (0.376)	-6.984*** (0.197)	-0.605*** (0.181)
Day of Week: Tuesday	0.190 (0.224)	-3.422*** (0.383)	-3.928*** (0.411)	8.186*** (0.348)	-7.198*** (0.191)	-0.785*** (0.187)
Day of Week: Wednesday	-0.399* (0.218)	-1.962*** (0.400)	-2.175*** (0.431)	7.951*** (0.347)	-7.081*** (0.199)	-0.857*** (0.192)
Day of Week: Thursday	-0.341 (0.213)	-1.161*** (0.391)	-1.215*** (0.414)	6.960*** (0.347)	-6.820*** (0.198)	-0.144 (0.189)
Day of Week: Friday	-0.392** (0.193)	1.795*** (0.378)	3.089*** (0.408)	7.210*** (0.322)	-5.011*** (0.195)	0.790*** (0.194)
Day of Week: Saturday	1.319*** (0.175)	9.005*** (0.410)	10.723*** (0.439)	3.302*** (0.273)	1.143*** (0.195)	0.942*** (0.191)
Unadjusted P-value	[0.897]	[0.000]	[0.000]	[0.678]	[0.149]	[0.188]
Bonferroni P-value	[1.000]	[0.001]	[0.001]	[1.000]	[0.892]	[1.000]
Weather	No	No	No	No	No	No
Holiday Effects	No	No	No	No	No	No
Day-of-Month 5th Order Poly. Trend	No	No	No	No	No	No
Month x Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,193	6,193	6,193	6,193	6,193	6,193
Adjusted R ²	0.077	0.531	0.534	0.439	0.649	0.510

Note: Newey-West Robust Errors in parentheses. Unadjusted p-values: *p<0.1; **p<0.05; ***p<0.01

Estimates from parsimonious alternative specification which drops weather, holiday, and day-of-month trend variables from main specification in Eq. ???. Violence includes: Homicide, assault, and sexual assault. Two categories of substance abuse are presented for robustness. Substance (Part) includes: driving while intoxicated, drunk and disorderly, and drug possession. Substance (Full) category includes: incidents of driving while intoxicated, drunk and disorderly, drug possession, hit-and-runs, and liquor law violations. Property crime includes burglary, robbery, theft, and shoplifting. Party includes noise violation and loud/disruptive party calls. Medical assistance calls only include police assistance of medical aid for another department. Complete list of holidays accompanies discussion of Eq. ??. Weather includes third order effects for temperature, precipitation, and snow depth. Bonferroni p-values (for PFD coefficient) correct for multiple hypothesis testing.

Table A.4: Change in average daily calls, first full PFD day, Poisson count model

	<i>Change in daily incident count by category:</i>					
	Violence	Substance (Part)	Substance (Full)	Property	Party	Medical Assist
	(1)	(2)	(3)	(4)	(5)	(6)
First Full PFD Day	-0.006 (0.070)	0.129*** (0.044)	0.114*** (0.036)	-0.020 (0.047)	-0.156 (0.103)	0.041 (0.053)
Mil. Pay Day/Day After	-0.009 (0.015)	0.027** (0.011)	0.024** (0.010)	0.007 (0.010)	0.015 (0.019)	-0.012 (0.014)
New Years Day/Eve	0.360*** (0.046)	0.296*** (0.035)	0.280*** (0.032)	-0.118** (0.050)	0.337*** (0.079)	0.071 (0.052)
Super Bowl	0.045 (0.077)	-0.005 (0.055)	0.015 (0.046)	-0.207*** (0.041)	0.031 (0.090)	-0.063 (0.084)
Iditarod	-0.064 (0.075)	0.057 (0.047)	0.044 (0.043)	-0.060* (0.034)	-0.115 (0.108)	-0.007 (0.053)
St Patricks Day	0.052 (0.058)	0.033 (0.041)	-0.009 (0.039)	0.069 (0.072)	-0.044 (0.086)	-0.037 (0.077)
Cinco de Mayo	0.018 (0.071)	0.053 (0.041)	0.068 (0.041)	0.014 (0.047)	0.062 (0.083)	-0.045 (0.094)
July 4th	0.080 (0.055)	0.114** (0.045)	0.072* (0.042)	-0.252*** (0.058)	0.180** (0.077)	-0.073 (0.076)
Labor Day Weekend	-0.021 (0.058)	0.047 (0.037)	0.033 (0.037)	-0.084** (0.033)	0.101 (0.070)	0.032 (0.035)
Columbus Day Weekend	0.088* (0.051)	-0.009 (0.035)	-0.007 (0.031)	0.049 (0.036)	-0.062 (0.056)	0.018 (0.048)
Halloween and Weekend	0.037 (0.047)	-0.028 (0.031)	-0.010 (0.030)	-0.055 (0.047)	0.322*** (0.055)	0.040 (0.031)
Thanksgiving	-0.175** (0.078)	-0.070 (0.054)	-0.115** (0.052)	-0.524*** (0.079)	0.200** (0.084)	0.028 (0.051)
Christmas	-0.240*** (0.090)	-0.212*** (0.059)	-0.281*** (0.051)	-0.706*** (0.113)	0.090 (0.069)	-0.135** (0.060)
Federal Holiday	-0.078** (0.033)	0.015 (0.023)	-0.006 (0.021)	-0.161*** (0.022)	0.398*** (0.038)	0.001 (0.027)
Constant	2.638*** (0.036)	3.592*** (0.048)	3.817*** (0.026)	3.439*** (0.022)	2.933*** (0.040)	2.072*** (0.028)
Unadjusted P-value	[0.929]	[0.003]	[0.002]	[0.669]	[0.128]	[0.438]
Bonferroni P-value	[1.000]	[0.018]	[0.010]	[1.000]	[0.770]	[1.000]
Weather	Yes	Yes	Yes	Yes	Yes	Yes
Day of Week Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Day-of-Month 5th Order Poly. Trend	Yes	Yes	Yes	Yes	Yes	Yes
Month x Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,193	6,193	6,193	6,193	6,193	6,193

Note: Newey-West Robust Errors in parentheses. Unadjusted p-values: *p<0.1; **p<0.05; ***p<0.01

Coefficient estimates from Poisson regression interpretable as percent changes. Violence includes: Homicide, assault, and sexual assault. Two categories of substance abuse are presented for robustness. Substance (Part) includes: driving while intoxicated, drunk and disorderly, and drug possession. Substance (Full) category includes: incidents of driving while intoxicated, drunk and disorderly, drug possession, hit-and-runs, and liquor law violations. Property crime includes burglary, robbery, theft, and shoplifting. Party includes noise violation and loud/disruptive party calls. Medical assistance calls only include police assistance of medical aid for another department. Complete list of holidays accompanies discussion of Eq. ???. Weather includes third order effects for temperature, precipitation, and snow depth. Bonferroni p-values (for PFD coefficient) correct for multiple hypothesis testing.

Table A.5: Disaggregated Effects, Week After PFD

Category	Outcome	Average Daily Count	Poisson				Linear			
			Coef.	Std. Error	P-value	Adj. P-value	Coef.	Std. Error	P-value	Adj. P-value
Violence	Assault	9.82	-0.04	0.04	0.24	1	-0.41	0.37	0.27	1
	Assault With A Weapon	0.76	-0.13	0.13	0.34	1	-0.09	0.1	0.35	1
	Homicide	0.05	-0.61	0.52	0.24	1	-0.03	0.02	0.23	1
	Sexual Aslt In Progress	0.05	-1.5	0.82	0.07	1	-0.04	0.02	0.1	1
	Sexual Assault	1.32	0.24	0.09	0.01	0.24	0.35	0.13	0.01	0.21
	Sexual Assault Of Minor	1.64	0	0.09	0.99	1	-0.01	0.23	0.95	1
Substance	Driving While Intoxicated	4.69	0.1	0.05	0.04	1	0.49	0.25	0.05	1
	Drugs Forged Perscription	5.45	0.07	0.04	0.12	1	0.48	0.27	0.08	1
	Drunk Problem	18.45	0.07	0.03	0.01	0.23	1.42	0.6	0.02	0.52
	Drunk Transport	7.75	0.23	0.04	0	0	1.74	0.43	0	0
	Hit And Run	5.5	-0.04	0.05	0.35	1	-0.24	0.29	0.41	1
	Hit And Run W Injury	0.26	0.28	0.2	0.16	1	0.09	0.06	0.13	1
	Liquor Law Violation	1.48	-0.16	0.1	0.12	1	-0.16	0.14	0.26	1
Property	Burglary	4.47	-0.09	0.05	0.11	1	-0.36	0.25	0.14	1
	Burglary Inprogress	1.09	-0.6	0.12	0	0	-0.62	0.14	0	0
	Robbery	0.68	-0.27	0.15	0.08	1	-0.15	0.1	0.12	1
	Shoplifter	4.13	-0.14	0.06	0.02	0.63	-0.51	0.23	0.03	0.85
	Stolen Property	0.03	-0.4	0.65	0.54	1	-0.01	0.02	0.57	1
	Stolen Vehicle	3.25	0.15	0.06	0.01	0.32	0.52	0.21	0.01	0.44
	Strongarm Robbery	0.5	-0.04	0.15	0.79	1	-0.03	0.08	0.76	1
	Theft	19.55	-0.08	0.03	0	0.04	-1.57	0.6	0.01	0.25
Party	Loud Disruptive Party	2.44	-0.2	0.08	0.02	0.48	-0.33	0.21	0.11	1
	Noise Violation	7.64	0.02	0.05	0.66	1	0.15	0.34	0.66	1
Medical Assist.	Medic Assist	14.38	0.04	0.03	0.18	1	0.66	0.44	0.13	1

Rows represent estimation of Eq. ?? for the given variable using a Poisson-count model or linear (ordinary least squares) regression. Coefficients represent the percent (Poisson) and absolute (Linear) average daily change in the week following PFD distribution. Adjusted p-values column applies Bonferroni correction for multiple hypothesis testing. Within each of the aggregated crime categories, there is not considerable evidence of heterogeneity in effect sign, with the possible exception of sexual assault and vehicle theft.

Table A.6: Persistence of PFD Effect

	Change in daily incidents by category:									
	Sample Years: 2010-2016					Sample Years: 2000-2016				
	Violence	Substance	Property	Party	Medical Assist	Violence	Substance	Property	Party	Medical Assist
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
4 weeks before (days -28 to -22)	1.263* (0.692)	0.796 (1.372)	0.677 (1.020)	-0.467 (0.435)	0.521 (0.761)	1.042** (0.409)	1.291 (0.950)	-0.187 (0.798)	-0.537 (0.375)	0.663 (0.418)
3 weeks before (days -21 to -15)	1.074 (1.044)	1.461 (1.257)	2.489** (1.162)	-0.739 (0.489)	0.342 (0.768)	0.211 (0.519)	-0.461 (0.804)	1.410* (0.747)	-0.704* (0.384)	0.365 (0.403)
2 weeks before (days -14 to -8)	0.806 (0.887)	2.771* (1.462)	0.841 (0.933)	-0.463 (0.486)	-0.605 (0.930)	0.872* (0.504)	0.854 (0.849)	-0.080 (0.809)	-0.538 (0.364)	-0.036 (0.448)
1 week before (days -7 to -1)	-0.073 (0.496)	3.866** (1.695)	0.324 (0.963)	-0.589 (0.478)	-0.436 (0.586)	0.175 (0.506)	0.250 (1.320)	-0.392 (0.591)	-0.350 (0.350)	-0.311 (0.340)
Week of PFD (days 1 to 7)	-0.846 (0.682)	8.785*** (1.291)	-5.109*** (1.170)	0.064 (0.631)	1.497 (1.145)	-0.174 (0.425)	6.303*** (1.563)	-5.150*** (0.806)	-0.041 (0.379)	1.272** (0.552)
1 Week After (days 8 to 14)	0.046 (0.827)	6.153*** (1.292)	-3.469*** (1.001)	-0.716 (0.564)	0.967 (0.851)	-0.487 (0.458)	4.079*** (1.085)	-3.554*** (0.924)	-0.427 (0.340)	0.851* (0.446)
2 Week After (days 15 to 21)	-1.107** (0.491)	3.286* (1.779)	-1.265 (1.043)	0.573 (0.456)	1.511* (0.785)	-0.064 (0.410)	3.923*** (1.168)	-2.355*** (0.634)	0.952** (0.377)	1.180*** (0.433)
3 Week After (days 22 to 28)	-0.422 (0.674)	-0.282 (1.353)	-1.216 (1.524)	0.780* (0.446)	1.377* (0.809)	0.061 (0.380)	-0.332 (0.920)	-2.341*** (0.843)	1.464*** (0.423)	1.109*** (0.415)
Total Effect, Week of PFD + Week 1: 95% Conf.	-5.60 [-22.8,11.5]	104.57 [75.7,133.4]	-60.05 [-84.3,-35.8]	-4.56 [-17.3,8.2]	17.25 [-6.3,40.8]	-4.63 [-13.8,4.5]	72.67 [40.5,104.8]	-60.93 [-80.4,-41.4]	-3.28 [-11.2,4.6]	14.86 [3.5,26.2]
Total Effect, Week of PFD + Week 1+2: 95% Conf.	-13.35 [-34.9,8.2]	127.57 [84.9,170.2]	-68.90 [-99.9,-37.9]	-0.55 [-16.5,15.4]	27.82 [-0.7,56.4]	-5.08 [-17.3,7.2]	100.13 [61.1,139.2]	-77.42 [-101.1,-53.8]	3.39 [-7.5,14.3]	23.12 [9.1,37.2]
Total Effect, Week of PFD + Week 1+2+3: 95% Conf.	-16.31 [-42.7,10.1]	125.60 [75.4,175.8]	-77.41 [-117.7,-37.1]	4.91 [-14.2,24.0]	37.46 [4.2,70.7]	-4.65 [-20.1,10.8]	97.81 [54.0,141.6]	-93.81 [-122.0,-65.6]	13.64 [-0.2,27.5]	30.88 [14.3,47.5]
Joint-F stat for post weeks	2.071*	14.667***	5.972***	1.557	1.516	0.359	7.054***	12.905***	5.307***	3.581***
Unadjusted P-value	[0.082]	[0.000]	[0.000]	[0.183]	[0.195]	[0.838]	[0.000]	[0.000]	[0.000]	[0.006]
Bonferroni P-value	[0.328]	[0.000]	[0.001]	[0.549]	[0.549]	[0.838]	[0.000]	[0.000]	[0.002]	[0.032]
Weather	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Holiday Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Day of Week Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Day-of-Month 5th Order Poly. Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE x Day-of-Yr 5th Order Poly. Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,550	2,550	2,550	2,550	2,550	6,193	6,193	6,193	6,193	6,193
Adjusted R ²	0.095	0.607	0.444	0.633	0.270	0.090	0.585	0.475	0.686	0.513

Note: Newey-West Robust Errors in parentheses. Unadjusted p-values: *p<0.1; **p<0.05; ***p<0.01

Top panel presents coefficient estimates from Eq. ?? . Second panel presents the cumulative sum of PFD-induced incidents over the specified period (and 95% confidence intervals). The third panel tests the joint significance of weeks 0-3 after distribution and provides Bonferroni adjusted p-values for multiple hypothesis testing. Violence includes: Homicide, assault, and sexual assault. Substance category includes: incidents of driving while intoxicated, drunk and disorderly, drug possession, hit-and-runs, and liquor law violations. Property crime includes burglary, robbery, theft, and shoplifting. Party includes noise violation and loud/disruptive party calls. Medical assistance calls only include police assistance of medical aid for another department. Complete list of holidays accompanies discussion of Eq. ?? . Weather includes third order effects for temperature, precipitation, and snow depth.

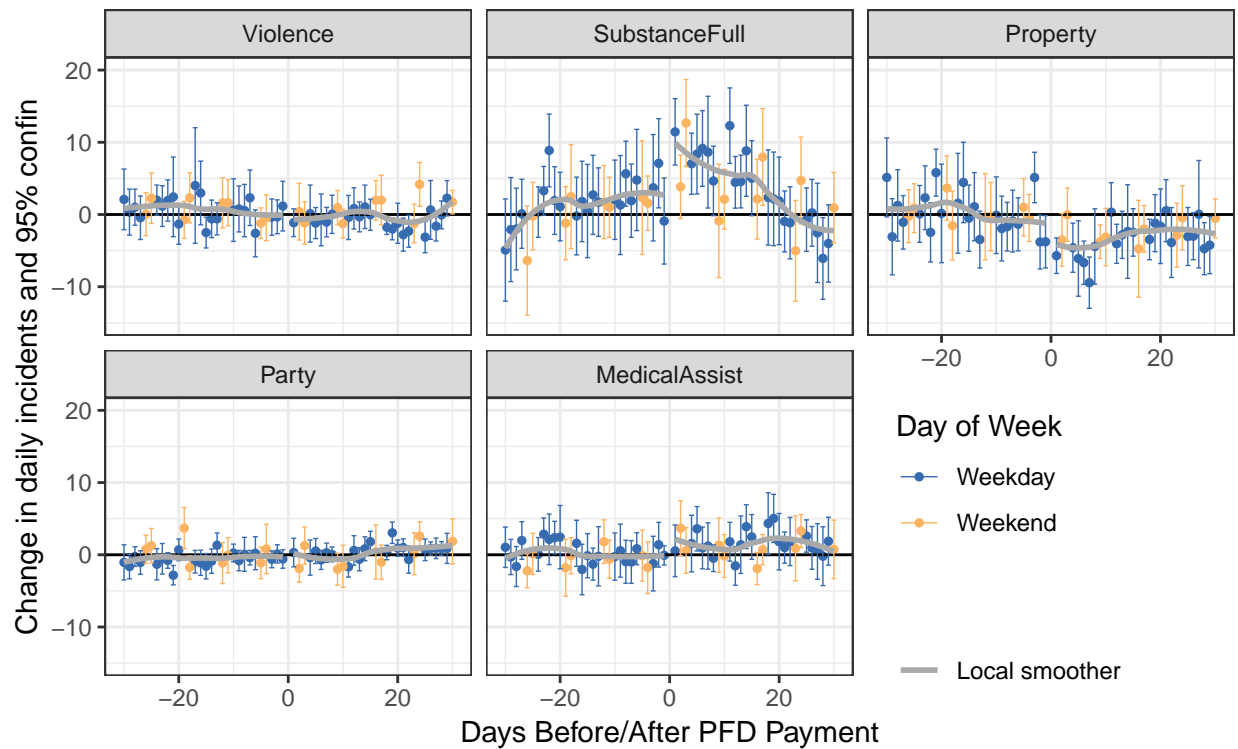
Table A.7: Day after results, sub-samples before and after 2010

	Change in daily incidents by category:									
	Sample Years: 2000-2009					Sample Years: 2010-2016				
	Violence	Substance	Property	Party	Medical Assist	Violence	Substance	Property	Party	Medical Assist
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
First Full PFD Day	0.358 (1.484)	5.762* (3.063)	0.122 (2.281)	-1.384** (0.678)	1.160 (1.122)	-0.784 (0.822)	6.038*** (1.832)	-1.859 (1.593)	-0.341 (1.063)	-0.020 (1.445)
Weather	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Holiday Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Day of Week Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Day-of-Month 5th Order Poly. Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month x Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,643	3,643	3,643	3,643	3,643	2,550	2,550	2,550	2,550	2,550
Adjusted R ²	0.089	0.599	0.478	0.685	0.314	0.099	0.620	0.454	0.635	0.280

Note: Newey-West Robust Errors in parentheses. Unadjusted p-values: *p<0.1; **p<0.05; ***p<0.01

Coefficient estimates of Eq. ?? on 2000-2009 sample when PFD payments were more spread over time and 2010-2016 sample used in persistence exercise. Violence includes: Homicide, assault, and sexual assault. Substance category includes: incidents of driving while intoxicated, drunk and disorderly, drug possession, hit-and-runs, and liquor law violations. Property crime includes burglary, robbery, theft, and shoplifting. Party includes noise violation and loud/disruptive party calls. Medical assistance calls only include police assistance of medical aid for another department. Complete list of holidays accompanies discussion of Eq. ?? . Weather includes third order effects for temperature, precipitation, and snow depth.

Figure A.2: Persistence of the PFD effect, by day



Estimates derived from estimating Eq. ??, replacing weekly dummy variables with daily dummy variables. Day of week color indicates whether day falls on a weekend (Saturday/Sunday) or weekday. Local smoother regression line for visual trend reference.

Appendix B Monetization Exercise

In an attempt to understand the economic significance of our results, we calculate the costs (or savings) associated with the change in crime levels stemming from the cash distribution. From our persistence estimates (Table A.6), we observe 77 fewer property crimes, but 126 more cases of substance abuse incidents in the four weeks following the PFD distribution. To monetize these changes, we draw from the literature the estimated costs associated with these crimes. We develop two estimates of the cost per-crime incident: a low cost estimate based on only the direct and tangible cost of crime and a more inclusive high cost estimate based on the tangible and intangible cost of crime as well as the direct and indirect crime that may be induced via substance abuse. Tangible costs include victim cost (medical costs, lost earnings, property loss), criminal justice system costs (government spending), and crime career costs (opportunity cost of the criminal). Intangible costs are the pain and suffering cost of the victim.

For the simpler low-cost case, we use the tangible cost-per-incident estimates for property crime from ? and the direct and tangible cost-per-incident estimates for substance crimes from ?. Table B.1 presents the cost-per-incident table from ? for reference. ?'s estimate for the cost of drug violations is \$21 dollars in 1992 dollars, or \$35.92 in 2016 dollars. To aggregate these more finely-measured incidents to our aggregate measure, we weight and average them by their relative frequency over the total sample period. Estimates for the low-cost case are presented in Table B.2. Substance crimes in the low-case cost about \$36/incident and property crimes cost \$4,305.

For the more inclusively defined high-cost case, estimating the savings from the reduction in property crimes is conceptually straightforward given the values from the literature; we simply apply the tangible and intangible cost values given by ? converted to 2016 dollars and weight them by the prevalence of each incident. For substance abuse incidents, we also attempt to estimate their indirect costs. Substance-related crimes have direct costs (e.g., police resources to manage disorderly individuals, as in ?), but also indirect costs via an

Table B.1: Tangible and intangible costs for different crimes (2008 dollars)

Type of offense	Tangible Cost	Intangible Cost	Total Cost
Murder	\$1,285,146	\$8,442,000	\$8,982,907
Rape/Sexual Assault	\$41,252	\$199,642	\$240,776
Aggravated Assault	\$19,472	\$95,023	\$107,020
Robbery	\$21,373	\$22,575	\$42,310
Arson	\$16,429	\$5,133	\$21,103
Motor Vehicle Theft	\$10,534	\$262	\$10,772
Stolen property	\$7,974	N/A	\$7,974
Household burglary	\$6,169	\$321	\$6,462
Embezzlement	\$5,480	N/A	\$5,480
Forgery and counterfeiting	\$5,265	N/A	\$5,265
Fraud	\$5,032	N/A	\$5,032
Vandalism	\$4,860	N/A	\$4,860
Larceny/theft	\$3,523	\$10	\$3,532

increased likelihood of committing other crimes while under-the-influence (e.g., the alcohol-violence link shown by ?). While our main estimates do not provide evidence that PFD-induced increases in substance-abuse incidents led to more violent crimes, the changes in such incidents could be too small in number to estimate statistically in our data. However, the social cost of crimes such as murder, sexual assault, and aggregated assault are very costly in social terms. Therefore, even changes that may be too small to measure statistically may be economically important. To estimate the indirect cost of substance abuse crimes, we calculate the probability of committing other crimes conditional on being under the influence by applying Bayes rule:

$$Prob(Crime_i|Substance) = \frac{Prob(Substance|Crime_i) * Prob(Crime_i)}{Prob(Substance)} \quad (B.1)$$

Estimates for the probability of being under the influence of substances given that crime type i has been committed, $Prob(Substance|Crime_i)$, are obtained from ?. The probability of crime i , $Prob(Crime_i)$, and Substance, $Prob(Substance)$, are calculated using the daily number of these activities from our database of police-call records. Using the cost-per-incident for each crime type, c_i , from ? (Table B.1) and the derived probabilities above, we estimate the per-incident indirect cost from substance abuse as:

$$C^{Substance} = \sum_i Prob(Crime_i|Substance) * c_i, \quad (B.2)$$

where c_i is the tangible and intangible cost of crime i . Table B.2 reports the estimates from this calculation for the high-cost case. For property crime, tangible and intangible costs (weighted by the incident composition in Anchorage) are \$5,423. For substance abuse the direct and indirect tangible and intangible costs are 30,767 per incident.

Table B.2: Monetized Tangible Costs of PFD-related Crime Changes

	Substance		Property
	Per Incident		
	Direct	Indirect	Direct
Tangible Cost	35.92 ¹	6,671.25	4,305.06
Intangible Cost		24,095.91	1,117.61
Total Cost	35.92	30,767.16 ²	5,422.67 ³
Lower (\$)	35.92		4,305.06
Upper (\$)	30,767.16		5,422.67
	Total over 4 weeks		
Change (No.)	125.60		-77.41
Lower (\$)	4,511.55		-333,254.69
Upper (\$)	3,864,355.30		-419,768.88

¹Tangible direct costs for substance abuse from ?.

²Tangible direct and indirect cost for substance abuse calculated by Eq. B.1 based on cost values from ?.

³Cost per property crime are weighted average of ?'s based on composition of Anchorage crime rates.

Appendix C Enforcement

This section considers the potential for police to adjust their behavior around PFD disbursement, therefore influencing the number or composition of incidents we observe around the distribution of the payment. This adjustment on the part of police may be caused by increased or relocated staffing effort either due to anticipation of the potential crime effects

caused by the payment or behavioral changes on the part of the officers because of their own payment receipt. In personal communications, APD has indicated that it makes no concerted adjustments in anticipation of crime effects of the PFD. When increases in staffing on the part of the Department are desired, it is often facilitated with resources provided by grant funding from the State of Alaska Highway Safety Office. APD has used these grants to temporarily increase staffing and dedicate patrols for impaired drivers around specific holidays or occasions such as St. Patrick's Day (?), Memorial Day weekend, (?), and July 4th (?) with known spikes in operating-under-the-influence violations. Staffing changes for the purpose of increased enforcement of operating-under-the-influence violations is salient and documented in these public press releases. No public releases document staffing changes around PFD dispersement.

In addition to this qualitative evidence, we also provide some empirical evidence that police do not re-allocate effort around PFD dispersement. First, we describe how the APD allocates its staffing time into major categories of activities. We then show how these categories respond to known staffing increases at certain points in the day. Finally, we show that overall effort levels and composition, as defined by APD, does not change significantly on the first full day after PFD distribution.

From ?, Anchorage Police Department groups activity in three main types: calls for service (CFS), Self-initiated activities (SIA), and administrative tasks (Admin). Citizens request service (CFS) by calling police through dialing 911, dialing a non-emergency number, hailing police in the field, or appearing in-person at a station. The most common types of CFS activities in Anchorage are related to disturbances, alarms, collisions, assaults, and suicide attempts/threats. Self-initiated activities (SIAs) are based on the officer's discretion in response to suspicious activity or an observed violation. By far the most common type of SIA is a standard traffic stop. Follow-up activities, warrant service, subject stops, and security checks round out other major SIA. Finally, administrative tasks include assisting other agencies city agencies like the Fire Department or EMS, union mandated meal breaks,

and court related activities.

Because CFS incidents are generated by the community and are prioritized over the other two types of activity, they are not observed at higher frequency when police enforcement increases. On the other hand, police self-initiated activities and administrative tasks are a function of both the underlying activity levels of crime in the community and enforcement effort.

As discussed, APD occasionally receives grant funding to increase police enforcement on particularly holidays. APD also increases enforcement more regularly throughout the day. Enforcement effort approximately doubles during the periods of 11pm-1am, 7am-9am, and 3pm-5pm when officers' 10-hour shift periods overlap (?). APD targets these overlap times in response to anticipated demand for officer time. We should therefore expect that within these periods of higher enforcement, both calls for service and self initiated activity should increase. We estimate a Poisson model of the hourly incident count of each of the three activity groups described above (Admin, CFS, SIA) on a dummy variable indicating if the hour of day falls in one of the double-staffed periods. Table C.1 shows that indeed, CFS incidents are 8% higher during the high-enforcement periods and SIA incidents are 42% higher.

Confirming that the patterns of these activity groups with respect to known changes in enforcement are consistent with our expectations, we return to our analysis at the daily level and how incidents in these APD activity groups are associated with the PFD distribution day and other significant days throughout the year. As Table C.1 shows, we find no evidence for a significant enforcement effect on the first full day after PFD distribution. Neither the daily count of these incidents nor the ratio between them is statistically different from other days of the year, providing some empirical support of the statements by APD regarding enforcement around the PFD. Other major holidays, however, are effected in terms of the number of CFS and SIA incidents are recorded.

This exercise cannot perfectly capture policing effort levels and allocation. For instance,

APD may re-allocate enforcement activities within the SIA category around PFD distribution (e.g. stopping fewer vehicles but more subjects on foot) leading to an important effort reallocation but a negligible net change. However, our primary analysis relies mostly on CFS-type calls, which are not necessarily observed at higher levels because more officers are present.

Table C.1: Effect of Known Increase in Enforcement Effort

	<i>Change in hourly incidents:</i>		
	Admin	CFS	SIA
	(1)	(2)	(3)
Shift overlap period	0.025*** (0.007)	0.082*** (0.002)	0.424*** (0.002)
Mean Hourly Count	0.83	10.46	9.29
Day of Week	Yes	Yes	Yes
Daily Weather	Yes	Yes	Yes
Day of month 5th order poly. trend	Yes	Yes	Yes
Month x Year FEs	Yes	Yes	Yes
Observations	148,484	148,484	148,484

Note: Poisson count model. Coefficients represent percent change in hourly count. Newey-West Robust Errors. *p<0.1; **p<0.05; ***p<0.01

Admin calls are defined as: meal breaks, medical assistance, outside agency assistance, court related, and fire department assistance. CFS calls are: disturbance, alarm, welfare check/911 hangup, suspicious persons/ vehicles/circumstances, collision, drunk problem, assault, vehicle in distressed/stalled, general locate, suicide, and disturbance with weapon. SIA calls are: traffic stop, follow up, warrant service, subject stop, and security check.

Table C.2: Enforcement

	Admin	CFS	SIA	CFS/SIA	CFS/Admin	SIA/Admin
	(1)	(2)	(3)	(4)	(5)	(6)
First Full PFD Day	0.241 (1.183)	6.518 (6.019)	-17.892 (11.776)	0.172 (0.121)	0.442 (0.755)	-0.226 (1.173)
Mil. Pay Day/Day After	-0.306 (0.242)	2.125 (1.352)	2.304 (2.174)	-0.005 (0.019)	0.445** (0.194)	0.398* (0.214)
New Years Day/Eve	1.717* (0.948)	40.803*** (4.781)	-18.661 (11.560)	0.455*** (0.107)	0.940 (0.879)	-1.772** (0.722)
Super Bowl	-0.695 (1.083)	-5.057 (4.511)	-4.411 (7.759)	-0.013 (0.085)	0.984 (1.551)	0.298 (1.306)
Iditarod	-0.989 (0.917)	5.893 (6.274)	-18.326** (8.953)	0.177** (0.084)	0.675 (1.055)	-0.904 (0.732)
St Patricks Day	0.356 (1.370)	7.050 (11.277)	15.857 (11.805)	0.715 (0.593)	3.825 (4.417)	0.943 (1.285)
Cinco de Mayo	-0.916 (1.399)	3.442 (7.370)	-16.167 (11.230)	0.094* (0.055)	0.595 (0.927)	-0.479 (1.054)
July 4th	-0.224 (1.185)	23.145*** (7.688)	0.563 (12.369)	0.059 (0.087)	0.684 (0.796)	-0.517 (0.900)
Labor Day Weekend	0.516 (0.750)	3.372 (4.588)	17.320 (11.245)	-0.138 (0.084)	-0.637 (0.709)	0.189 (0.788)
Columbus Day Weekend	0.625 (0.713)	0.430 (4.069)	19.191** (7.528)	-0.187*** (0.053)	-0.255 (0.772)	1.103 (1.024)
Halloween and Weekend	0.643 (0.626)	11.132* (5.875)	-19.975*** (5.516)	0.194*** (0.075)	0.202 (0.658)	-1.626*** (0.557)
Thanksgiving	-0.410 (0.944)	-24.785*** (5.234)	-78.743*** (9.463)	0.358*** (0.071)	-1.897** (0.878)	-4.530*** (0.717)
Christmas	-1.747* (1.007)	-46.977*** (5.746)	-57.782*** (10.793)	0.423*** (0.155)	-1.462 (1.014)	-2.886*** (0.757)
Federal Holiday	-1.028** (0.449)	-0.826 (2.982)	-26.811*** (4.791)	0.224*** (0.041)	0.901** (0.413)	-0.919** (0.422)
Constant	15.014*** (0.520)	259.658*** (6.041)	140.885*** (6.741)	1.876*** (0.090)	18.521*** (0.455)	10.890*** (1.117)
Weather	Yes	Yes	Yes	Yes	Yes	Yes
Day of Week Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Day-of-Month 5th Order Poly. Trend	Yes	Yes	Yes	Yes	Yes	Yes
Month x Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,208	6,209	6,210	6,209	6,208	6,208
Adjusted R ²	0.457	0.453	0.670	0.503	0.310	0.377

Note: Coefficients represent change in average daily count. Newey-West Robust Errors. *p<0.1; **p<0.05; ***p<0.01

Admin calls are defined as: meal breaks, medical assistance, outside agency assistance, court related, and fire department assistance. CFS calls are: disturbance, alarm, welfare check/911 hangup, suspicious persons/ vehicles/circumstances, collision, drunk problem, assault, vehicle in distressed/stalled, general locate, suicide, and disturbance with weapon. SIA calls are: traffic stop, follow up, warrant service, subject stop, and security check.