ONLINE APPENDIX (not for print version)
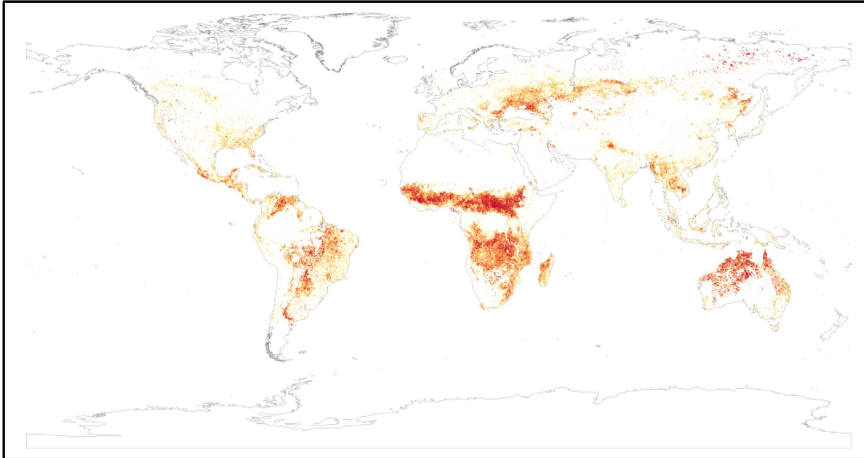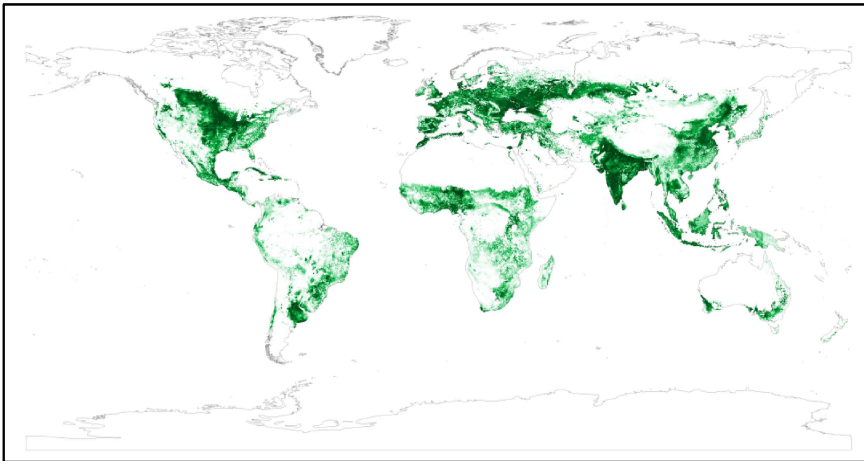
Rangel and Vogl's "Agricultural Fires and Health at Birth", The Review of Economics and Statistics

Figure A1: Global Distributions of Fire, Cropland, and Sugarcane
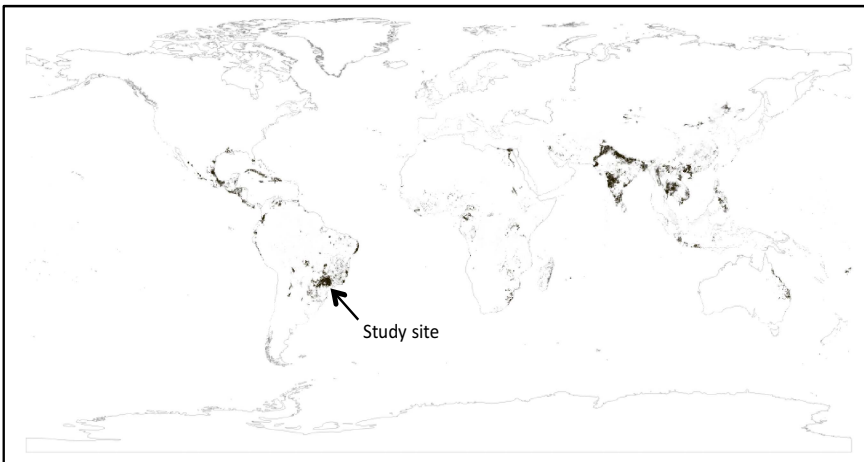
A. Fire

B. Cropland

C. Sugarcane

Note: 5 arcminute cells, approx. 100km^2 at Equator. Darker areas indicate more fire, cropland, or sugarcane. Panel A is based on remote sensing fires data from the TERRA satellite for Nov. 2000 – Oct. 2001. Panel B is from Ramankutty et al. (2008), who estimate cropland cover circa 2000 by combining satellite remote sensing and agricultural inventory data. Panel C is from You et al. (2017), who estimate sugarcane harvest area circa 2005 using similar methods.

We base our analysis on Ramankutty, Navin, A.T. Evan, C. Monfreda, and J.A. Foley. (2008). "Farming the Planet: Geographic Distribution of Global Agricultural Lands in the Year 2000." Global Biogeochemical Cycles 22(1); and You, L., U. Wood-Sichra, S. Fritz, Z. Guo, L. See, and J. Koo. (2017). Spatial Production Allocation Model (SPAM) 2005 v3.2.

A. Sugarcane production intensity
1990-1999
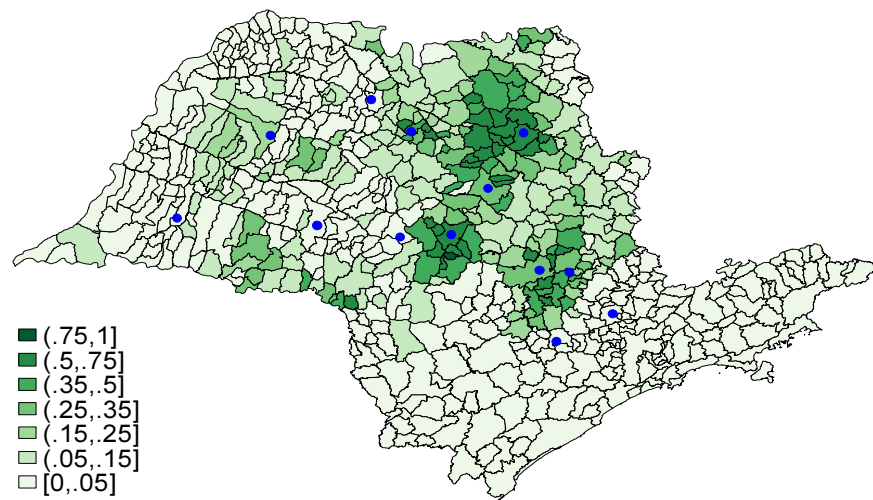
B. Sugarcane production intensity
2009-2014

(.75,1]
(.5,.75]
(.35,.5]
(.25,.35]
(.15,.25]
(.05,.15]
[0,.05]
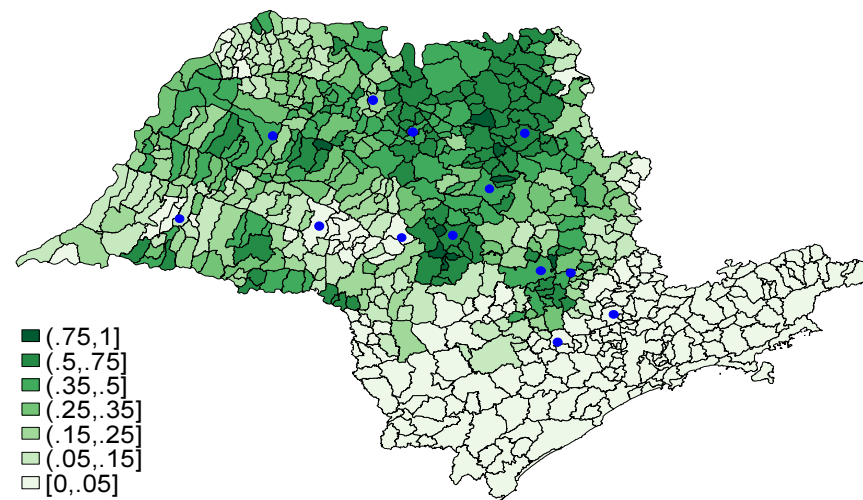
Figure A2: Sao Paulo - Spatial Distribution of Sugarcane Plantation Intensity per Municipality (as share of total land area within the municipality) and location of weather/air-quality stations
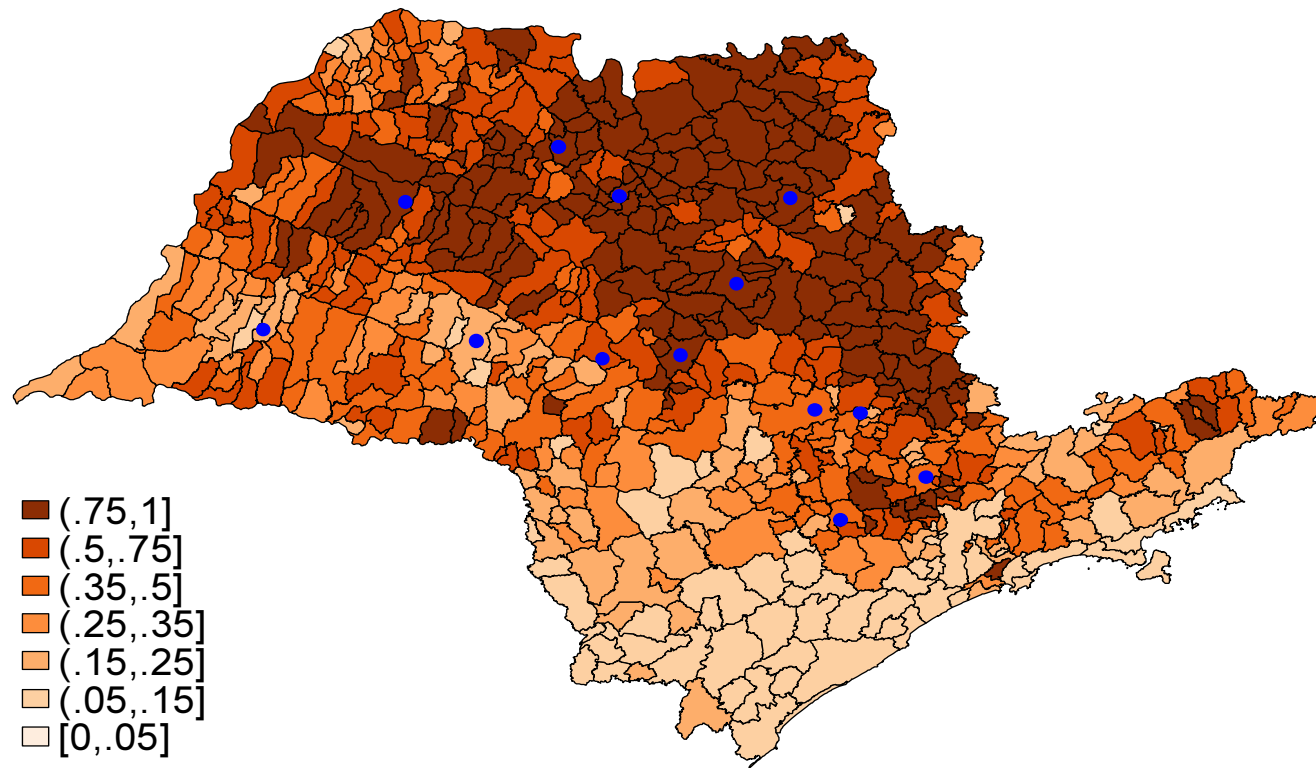
Figure A3: Relative spatial distribution of satellite-based average yearly fire counts within the state of Sao Paulo between 2009 and 2014 (brackets represent percentile of the count of fires' cumulative distribution)

Figure A4: Seasonality in the Number of Births
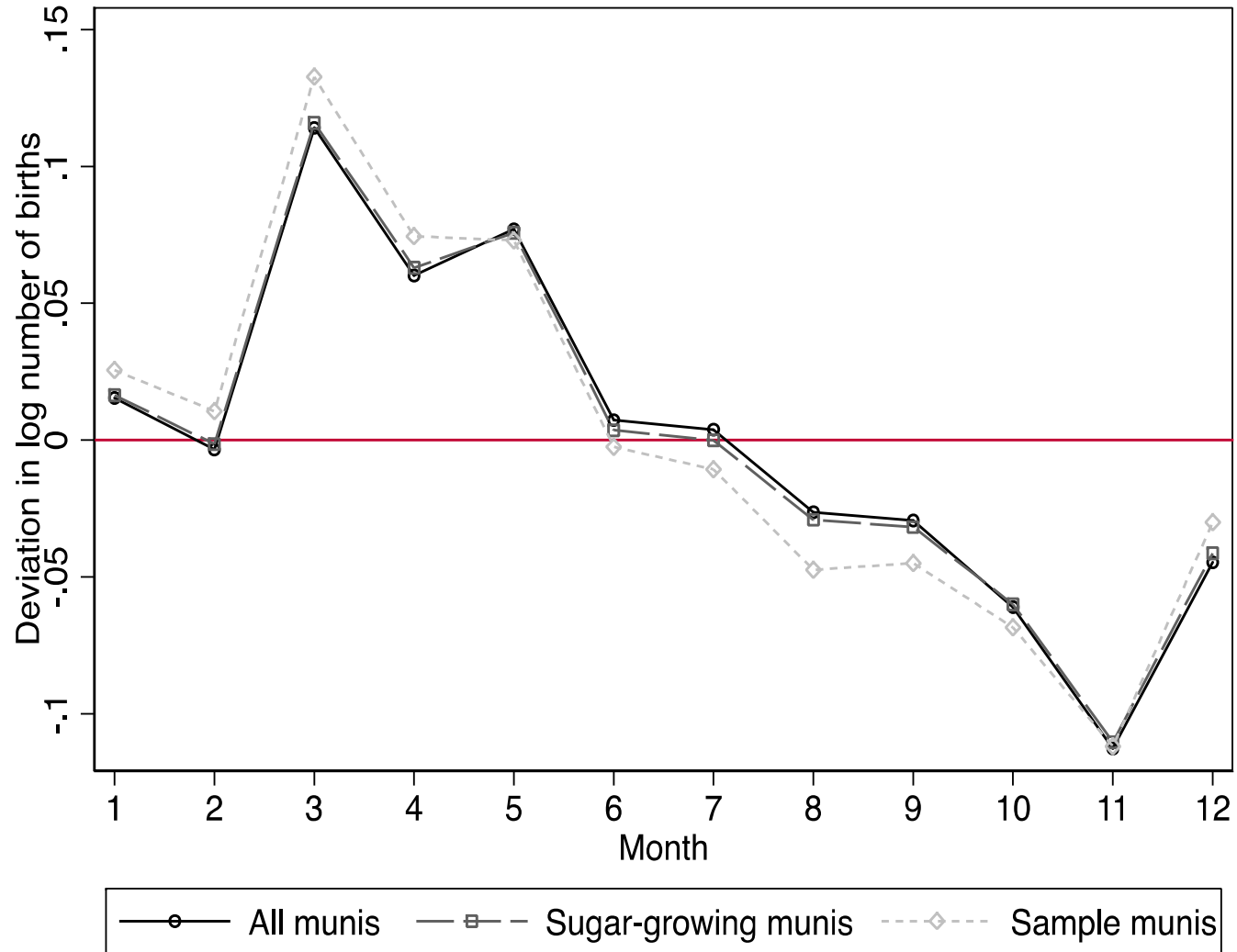
Note: Figure plots the deviation in log monthly births from its mean across all months. Data are 2004-2014.

Figure A5: Seasonality in the Characteristics of Infants and Mothers
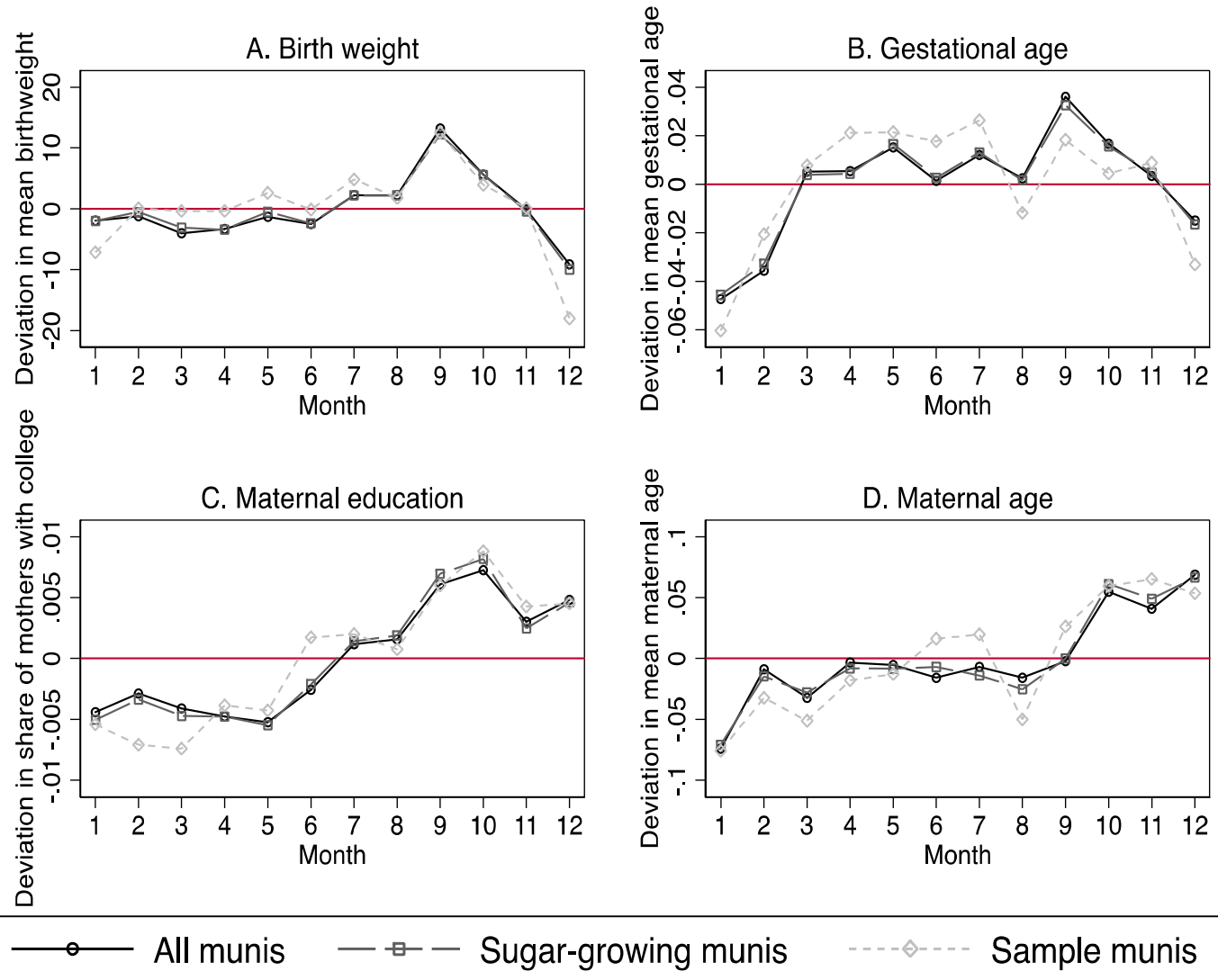
Note: Each panel plots deviations of monthly means from their overall mean for the specified characteristic. Data are 2004-2014.

Table A1: Sugarcane Production and Fires

Dependent variable: municipality-level yearly probability-adjusted count of fires per 100km²

	[1]	[2]	[3]	[4]	[5]
1{Harvesting sugarcane in year}		-0.26	0.12	-0.07	0.14
		(0.18)	(0.17)	(0.17)	(0.17)
Share of area harvested (ref. <.05)					
.05 to 0.15		0.08	0.09	0.82	0.06
		(0.19)	(0.05)	(0.18)	(0.16)
.15 to 0.25		0.16	0.22	1.56	0.26
		(0.24)	(0.06)	(0.30)	(0.26)
.25 to 0.35		1.08	0.51	2.93	0.94
		(0.29)	(0.08)	(0.53)	(0.39)
.35 to 0.50		1.06	0.74	2.41	1.18
		(0.38)	(0.11)	(0.66)	(0.56)
.50 to 0.75		1.45	1.13	3.39	-0.30
		(0.55)	(0.18)	(1.07)	(0.78)
.75 to 1		2.11	1.16	6.31	-
		(1.15)	(0.41)	(1.08)	
ln municipal GDP *per capita*	1.33	0.86	0.79	0.76	1.05
	(0.36)	(0.39)	(0.38)	(0.38)	(0.38)
Sugarcane harvest data source	-	*IBGE*	*CANASAT/INPE*	*CANASAT/INPE*	*CANASAT/INPE*
Sugarcane harvest measure	-	*Total reported area*	*Satellite-measured total area*	*Satellite-measured burned-harvest area*	*Satellite-measured green-harvest area*
Observations	5,805	4,515	4,515	4,515	4,515
Municipalities	645	645	645	645	645
Years covered	2004-2012	2006-2012	2006-2012	2006-2012	2006-2012

Note: Standard-errors clustred at the municipality level. See notes in Table 1.

Table A2: Labor Markets and Fires

Dependent variable: municipality-level monthly probability-adjusted count of fires per 100km²

	All jobs [1]	All jobs [2]	All jobs [3]	All jobs [4]	All jobs [5]	Agriculture/Ranching jobs [6]	Industry jobs [7]	Services/Retail jobs [8]	Sugarcane plantation jobs [9]	Sugarcane milling jobs [10]
Job creation (per resident in 2010)	1.03 (0.23)					0.86 (0.29)	1.22 (0.31)	3.90 (2.48)	0.73 (0.28)	1.35 (0.36)
Job destruction (per resident in 2010)	-1.70 (0.45)					-1.21 (0.58)	-2.31 (0.56)	-4.87 (3.01)	-1.59 (0.81)	-2.52 (0.60)
Wage bill increase with hires (in R$ 1,000 per resident in 2010)		1.29 (0.38)								
Wage bill reduction with destruction (in R$ 1,000 per resident in 2010)		-1.50 (0.61)								
Job creation, male workers (per resident in 2010)			1.08 (0.24)		0.86 (0.28)					
Job destruction, male workers (per resident in 2010)			-2.23 (0.56)		-2.77 (0.73)					
Job creation, female workers (per resident in 2010)				3.07 (1.25)	0.80 (1.30)					
Job destruction, female workers (per resident in 2010)				-2.15 (1.42)	3.11 (1.71)					
Observations	45,795	45,795	45,795	45,795	45,795	45,795	45,795	45,795	45,795	45,795
Municipalities	645	645	645	645	645	645	645	645	645	645
Years covered	2009-2014	2009-2014	2009-2014	2009-2014	2009-2014	2009-2014	2009-2014	2009-2014	2009-2014	2009-2014

Note: Standard-errors clustred at the municipality level. See notes in Table 1.

Table A3: Weather and Air-Quality Stations - Descriptives

	Pollutants			Weather	
	Particulate Matter	Ozone	Nitrogen Oxides	Relative Humidity	Temperature
	PM_{10}	O_3	NO_X	RH	TEMP
	[1]	[2]	[3]	[4]	[5]
Panel A: Share of rolling weeks with missing data from January-1-2009*					
Station 1	0.025	0.034	0.055	0	0
Station 2	0.173	0.018	1.000	0	0
Station 3	0.032	0.042	0.068	0.007	0.007
Station 4	0.230	0.023	0.207	0	0
Station 5	0.021	0.005	0.033	0	0
Station 6	0.009	0.000	0.014	0.063	0.010
Station 7	0.030	0.058	0.187	0	0
Station 8	0.038	0.038	0.072	0.027	0
Station 9	0.021	0.024	0.154	0	0.072
Station 10	0.068	0.067	0.108	0	0
Station 11	0.035	0.019	0.076	0	0
Station 12	0.037	0.016	0.045	0	0
Station 13	0.043	0.039	0.071	0	0
Panel B: Average/Standard-deviation for non-missing values (includes imputation for weather conditions)					
Station 1	33.42/12.4	39.49/12.1	20.40/11.7	72.80/10.3	21.82/2.9
Station 2	36.12/14.1	34.00/12.8	-	67.78/9.9	22.72/2.7
Station 3	32.08/15.8	41.83/12.4	14.86/6.9	65.47/12.4	23.12/2.5
Station 4	33.82/17.6	43.67/12.4	6.37/3.5	70.03/11.4	24.40/2.6
Station 5	30.46/15.6	37.11/11.4	15.81/8.9	66.91/9.6	23.41/3.0
Station 6	28.80/11.5	36.64/13.3	24.30/9.5	74.24/8.3	21.05/3.0
Station 7	29.56/14.8	41.77/12.2	12.58/4.8	73.33/10.6	22.81/2.8
Station 8	22.02/10.6	48.08/13.0	10.25/3.1	66.27/11.9	22.86/2.7
Station 9	36.34/16.2	41.34/13.5	18.99/8.6	75.47/9.8	22.30/2.9
Station 10	20.93/11.1	44.28/13.5	11.35/4.7	66.52/11.6	24.04/2.8
Station 11	31.53/16.0	32.82/12.7	13.66/4.9	62.70/10.3	24.86/2.7
Station 12	36.80/20.5	35.41/12.5	19.02/11.1	63.19/11.8	24.53/2.4
Station 13	37.57/18.9	36.3/12.1	13.95/6.9	63.74/11.5	22.94/2.5
Units	$\mu g/m^3$	$\mu g/m^3$	*ppb (parts per billion)*	*Percentage*	*Celsius*

Notes: * except for Station 13, for which readings only started on April-15-2009. A reading was considered missing if more than 3 days had no readings within that week. Weather conditions' values were imputed using station-specific week-of-year averages (seasonal averages). Pollution readings were not imputed in any of our exercises. 2,191 moving weeks are observed in each station (except for Station 13, which has 2,080 observations and Station 11, which has 1,807 observations).

Table A4: Weekly average of hourly wind Direction (in %) - Descriptives

| | winds originating from octant… | | | | | | | | Calm or Missing | % of days without prevaling wind |
	NNE [1]	ENE [2]	ESE [3]	SSE [4]	SSW [5]	WSW [6]	WNW [7]	NNW [8]	[9]	[10]
Station 1	10.5	12.9	26.8	10.3	6.9	8.5	8.3	7.6	8.3	55.6
Station 2	14.0	11.6	17.1	21.0	5.6	5.1	6.0	11.9	7.7	46.6
Station 3	16.6	23.7	17.2	10.9	8.0	3.4	5.0	11.9	3.2	38.8
Station 4	8.3	15.8	20.1	28.2	7.5	7.5	4.6	6.1	1.9	35.2
Station 5	7.9	14.8	34.3	15.1	4.5	4.7	6.9	9.6	2.3	42.3
Station 6	3.5	4.2	28.8	36.3	2.5	3.9	8.0	10.1	2.6	50.7
Station 7	10.0	6.7	5.6	50.4	8.9	3.6	3.5	8.0	3.2	45.2
Station 8	4.7	9.8	36.5	24.2	5.5	4.3	9.1	4.5	1.6	33.6
Station 9	8.7	18.5	22.6	13.1	12.4	7.7	8.1	3.7	5.3	49.6
Station 10	7.8	20.4	36.3	6.7	3.3	8.7	5.9	3.8	7.3	28.8
Station 11	5.3	11.9	21.5	13.7	9.2	3.4	5.8	8.1	21.1	39.9
Station 12	10.5	25.0	15.4	14.0	11.8	10.7	5.9	4.3	2.4	42.8
Station 13	11.5	9.3	16.4	20.0	5.6	3.4	4.3	8.1	21.4	31.8
All	*9.2*	*14.2*	*23.0*	*20.3*	*7.1*	*5.8*	*6.3*	*7.5*	*6.7*	*41.6*

Notes: An octant is considered to be "prevailing" when wind blows in that direction for at least 8 hours in a day (and no more than 4 hours from the directly oposing direction). In this case the octant is definied by a grid search moving around the circle in 10-degrees incremenets. More details in the text.

Table A5: Weekly Average Fire Location (in %) and fire counts - Descriptives

	fires occurring in octant…									Counts within 5-50km (mean/SD), per satellite per week		
	NNE [1]	ENE [2]	ESE [3]	SSE [4]	SSW [5]	WSW [6]	WNW [7]	NNW [8]	No fires recorded [9]	Fires [10]	Probability weighted Fires [11]	Probability weighted Fires within prevailing-wind octant [12]
Station 1	15.1	10.7	5.9	3.3	3.4	4.2	6.5	13.5	37.5	1.72 / 3.71	1.23 / 3.22	0.04 / 0.25
Station 2	16.4	9.9	10.6	6.3	9.9	8.9	12.5	8.5	17.0	3.36 / 4.60	1.77 / 3.24	0.12 / 0.37
Station 3	8.9	12.1	8.5	9.9	11.1	16.2	17.8	7.7	7.9	4.32 / 5.29	2.75 / 5.14	0.24 / 0.85
Station 4	9.4	7.9	10.5	14.8	7.8	9.3	12.7	6.2	21.4	3.05 / 5.00	2.21 / 4.82	0.25 / 0.87
Station 5	10.3	18.5	12.8	9.8	7.6	6.3	3.7	11.1	20.0	2.03 / 2.49	1.17 / 2.43	0.11 / 0.35
Station 6	4.4	5.0	3.6	16.4	8.3	9.5	11.5	9.8	31.5	2.69 / 6.19	1.73 / 5.10	0.04 / 0.21
Station 7	17.0	10.3	6.6	6.1	11.3	7.8	9.7	19.9	11.3	3.50 / 4.29	2.14 / 3.79	0.14 / 0.41
Station 8	16.4	4.5	5.6	4.6	5.8	7.2	8.7	13.0	34.1	1.02 / 1.50	0.77 / 1.34	0.05 / 0.21
Station 9	10.3	15.5	14.8	11.3	7.0	5.4	8.1	4.7	22.9	2.53 / 3.48	1.28 / 2.41	0.08 / 0.27
Station 10	9.1	11.2	13.0	10.3	11.2	7.2	2.6	4.4	31.1	1.22 / 1.84	0.79 / 1.71	0.09 / 0.31
Station 11	10.2	7.8	9.4	12.1	7.8	10.9	17.9	14.5	9.5	4.88 / 7.04	3.21 / 6.80	0.12 / 0.48
Station 12	18.2	13.7	8.4	9.0	7.8	8.4	9.2	9.4	15.7	3.65 / 4.32	2.56 / 4.27	0.22 / 0.64
Station 13	12.4	14.9	11.2	14.0	11.5	12.3	6.7	7.2	9.7	4.49 / 4.87	3.01 / 4.78	0.24 / 0.58
All	*12.2*	*10.9*	*9.3*	*9.8*	*8.5*	*8.7*	*9.7*	*9.9*	*20.9*	*2.93 / 4.59*	*1.86 / 4.09*	*0.13 / 0.50*

Notes: Fire counts are restricted to the period of active measurement of each station. 2,191 moving weeks are observed in each station (except for Station 13, which has 2,080 observations and Station 11, which has 1,807 observations).

Table A6- Descriptives for municipalities where weather/air-quality stations are installed

	Monitored municipalities [1]	Sugar-growing municipalities [2]	All SP municipalities [3]
PANEL A: Representativeness			
Municipalities	13	556	645
Total population in 2000 (in thousands)	3,464	27,018	37,032
Total population in 2010 (in thousands)	3,947	29,945	41,262
Births between 2002 and 2008 (in thousands)	403.9	3,408	4,855
GDP in 2008 (constant 2000 R$ thousands)	44,256	374,637	519,181
Land area (100 sq. km)	85.8	2,108	2,402
Sugarcane planted area in 2008 (sq. km)	22.6	443.5	443.5
Probability of Fire-pixels within munic. borders between 2009 and 2014	1,976	42,009	43,384
PANEL B: Comparability of average municipality characteristics			
Income inequality in 2000 (Gini index)	0.553	0.521	0.525
Human Development Index in 2000	0.838	0.779	0.780
Urbanization in 2010 (share of population in urbanized center)	0.976	0.839	0.843

Note: IPEADATA is the source for GDP data. Ministry of Health (DATASUS/SISNAC) data on births. INPE-adjusted count-of-fires are constructed summing across 3 satellites.

Table A7: Descriptive statistics, Vital and Hospital Records - main analyses sample

	mean [1]	individual-level sd [2]	cell-level sd [3]	individual obs [4]	munic-day cells [5]
Birth ouctomes					
Birth weight (in grams)	3,159.3	525.7	161.8	287,506	26,190
Low birth weight per 1,000	80.8	272.4	83.7	287,506	26,190
Very low birth weight per 1,000	12.4	110.7	34.2	287,506	26,190
Gestational age (in weeks)	38.6	1.7	0.5	287,506	26,190
Premature per 1,000	97.1	296.1	93.6	287,506	26,190
Very premature per 1,000	12.4	110.7	34.4	287,506	26,190
Mortality and neonatal morbidity					
Stillbirth per 1,000	7.7	87.6	26.9	289,748	26,198
Mortality witin 1 day of birth per 1,000	2.6	.	18.0	.	26,190
Mortality within 1 week of birth per 1,000	5.7	.	26.8	.	26,190
All hospitalizations in first full day of life per 1,000	49.2	.	74.1	.	26,190
Fetal-growth-related hospitalizations in first full day of life per 1,000	1.5	.	11.1	.	26,190
All hospitalizations between 3rd and 7th day of life per 1,000	11.6	.	37.2	.	26,190
APGAR 1	8.5	1.34	0.5	287,505	26,189
APGAR 5	9.5	0.8	0.3	287,505	26,189
Infant and maternal demographics					
Male	51.2	50.0	15.3	287,506	26,190
White	76.0	42.7	16.9	287,506	26,190
Brown/Mullato	18.0	38.4	14.2	287,506	26,190
Mom younger than 25 at birth	36.1	48.0	15.0	287,506	26,190
Mom between 25 and 35 at birth	53.6	49.9	15.3	287,506	26,190
Mom had previous miscarriage	11.3	31.7	11.0	287,506	26,190
Mom had previous live birth	50.9	50.0	15.5	287,506	26,190
Mom formally married at birth	48.0	50.0	15.8	287,506	26,190
Mom informally married/cohabiting at birth	10.8	31.0	15.9	287,506	26,190
Mom had college eduation at birth	24.9	43.2	14.0	287,506	26,190

Note: Cells include all births occuring in the same municipality on the same day. All cell-level statistics are weighted by the number of births. Stillbirths are per 1,000 births dead or alive; all other rates are per 1,000 live births. Mortality and hospitalization data do not have individual-level values because we do not individually link them to births (they are, however, matched to the municipality of residence and the date of birth of deceased/patient).

Table A8: Fires and Air Pollution - Robustness Checks and Extensions
Probability-adjusted counts of fires within 50km of stations (z-scores)

	Main model	Main model all-pollutants sample	Non-zero indicators for upwind fires	Stricter definition of prevailing wind octant	Alternative angles upwind		Alternative radii				Alternative fixed-effects for time and seasonality		Log transform x 100
					30-degrees	90-degrees	40km	30km	20km	10km			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
Panel A: Average PM10 in week ending in t													
Upwind vs Non-upwind	7.83	8.06	6.76	8.78	4.90	2.88	7.05	7.87	15.18	8.67	6.09	4.90	16.16
	(2.43)	(2.54)	(2.45)	(3.14)	(3.10)	(1.40)	(3.00)	(3.71)	(5.09)	(12.26)	(2.05)	(1.66)	(4.96)
Observations	26,342	22,232	26,342	26,342	26,342	26,342	26,342	26,342	26,342	26,342	26,342	26,342	26,342
PANEL B: Average NOx in week ending in t													
Upwind vs Non-upwind	-0.61	-0.296	-0.705	-1.461	-1.842	-1.493	-1.365	-1.080	-0.667	-1.301	-0.345	-0.759	3.134
	(0.75)	(0.789)	(0.842)	(1.072)	(0.828)	(0.561)	(0.932)	(1.380)	(2.566)	(6.791)	(0.681)	(0.624)	(4.064)
Observations	23,448	22,232	23,448	23,448	23,448	23,448	23,448	23,448	23,448	23,448 #	23,448	23,448	23,448
PANEL C: Average O3 in week ending in t													
Upwind vs Non-upwind	2.43	2.159	1.949	3.325	2.362	-0.232	2.662	2.872	1.726	10.510	1.464	1.945	3.583
	(1.16)	(1.149)	(1.132)	(0.992)	(1.165)	(0.606)	(1.137)	(1.454)	(2.400)	(5.297)	(0.922)	(0.906)	(2.070)
Observations	27,159	22,232	27,159	27,159	27,159	27,159	27,159	27,159	27,159	27,159	27,159	27,159	27,159
Controls													
Date FE's	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Station FE's	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	YES
Weather	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Station*Year FE's	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO
Station*Week-of-year FE's	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO

Note: Robust standard errors in parentheses are clustered at the station level. The stricter definition of wind prevalence requires that the wind blows for 12 or more hours from the same octant (and 4 or less from oposing octant). As in the main exercise, the octant is definied by a grid search moving around the circle in 10-degrees incremements. See additional notes in Table 2.

Table A9: Covariates and fire activity

Risk-adjusted counts of fires within 50km of stations per satellite (z-score) during the last 13 weeks of pregnancy

	Estimate	(se)
Infant demographics		
Male	-2.459	(3.839)
White	-2.246	(7.708)
Brown/Mullato	6.819	(7.550)
Maternal demographics (at time of birth)		
Younger than 25	-3.363	(3.285)
Aged between 25 and 35	-0.037	(3.784)
Had previous miscarriage	-3.977	(6.309)
Had previous live birth	5.381	(7.779)
Formally married	-5.526	(3.279)
Informally married/Cohabiting	0.196	(15.880)
College eduation	0.131	(3.963)

Notes: Point estimates are based on linear probability models that using exact same specification of Table 3. Estimates are multiplied by 100 to facilitate reading as percentage points.

Table A10: Differential Effects of Upwind Fires in the Final Gestational Period on Birth Weight and Gestational

Probability-adjusted counts of fires within 50km of stations (z-scores)

	Extrapolation of wind and weather conditions across space			
	20 munics raidus 10	31 munics radius 15	42 munics radius 17.5	65 munics radius 20
	[1]	[2]	[3]	[4]
Birth weight (grams)	-83.12	-62.42	-44.72	-37.44
	(30.98)	(34.83)	(27.28)	(26.96)
LBW (per 1,000)	31.50	20.55	14.93	9.55
	(12.98)	(13.11)	(11.80)	(12.62)
VLBW (per 1,000)	16.52	15.38	13.96	8.87
	(8.62)	(8.19)	(7.28)	(6.96)
Gestational age (weeks)	-0.320	-0.304	-0.257	-0.230
	(0.106)	(0.110)	(0.105)	(0.113)
Premature (per 1,000)	19.76	19.00	15.43	23.33
	(23.13)	(22.35)	(23.86)	(21.22)
Very premature (per 1,000)	16.60	18.20	14.13	11.10
	(5.70)	(4.82)	(3.99)	(3.64)
Controls				
Date FE's	YES	YES	YES	YES
Station FE's	YES	YES	YES	YES
Weather	YES	YES	YES	YES
Maternal-child demographics	YES	YES	YES	YES
Station*Year FE's	NO	NO	NO	NO
Station*Week-of-year FE's	NO	NO	NO	NO
Observations	*36,761*	*48,947*	*59,372*	*85,899*

Note: Robust standard errors in parentheses are clustered at the station level. p-values reported in brackets under standard-errors are wild-bootstrap based (249 replications). On these exercises to speed-up the bootsraping process we followed Cameron et al. (2015) suggestion and employed Frisch-Lovell theorem results and estimate the model in using "residualized" version of the data. See notes in Table 5.

Table A11: Stratifications for Differential Effects of Upwind Fires in the Final Gestational Period on Birth Weight and Gestational Age
Probability-adjusted counts of fires within 50km of stations (z-scores)

	Base Model + covariates [1]	Boys [2]	Girls [3]	Mom < 25 [4]	Mom 25 to 35 [6]	Mom > 35 [7]	HS or less [8]	College [9]
Birth weight (grams)	-95.63	-106.20	-97.89	-137.00	-74.84	-115.00	-97.00	-77.16
	(28.80)	(36.88)	(53.14)	(58.02)	(31.97)	(55.99)	(46.55)	(53.02)
LBW (per 1,000)	34.14	34.10	38.53	19.58	47.65	5.03	32.86	31.99
	(13.84)	(23.83)	(31.84)	(25.84)	(13.57)	(40.47)	(21.64)	(36.81)
VLBW (per 1,000)	21.96	18.68	26.27	36.90	8.86	42.13	24.88	8.86
	(7.50)	(6.30)	(12.51)	(13.22)	(8.67)	(19.58)	(10.70)	(9.51)
Gestational age (weeks)	-0.349	-0.448	-0.278	-0.324	-0.374	-0.445	-0.341	-0.346
	(0.099)	(0.125)	(0.199)	(0.261)	(0.115)	(0.418)	(0.151)	(0.128)
Premature (per 1,000)	16.64	24.21	17.82	-19.17	41.34	48.68	11.86	26.14
	(23.43)	(32.61)	(36.30)	(51.75)	(20.48)	(92.63)	(34.87)	(36.41)
Very premature (per 1,000)	23.29	28.98	16.29	35.33	14.14	29.76	25.36	17.40
	(4.70)	(5.97)	(11.07)	(13.66)	(9.13)	(19.70)	(7.28)	(14.68)
Controls								
Date FE's	YES	YES	YES	YES	YES	YES	YES	YES
Station FE's	YES	YES	YES	YES	YES	YES	YES	YES
Weather	YES	YES	YES	YES	YES	YES	YES	YES
Maternal-child demographics	YES	YES	YES	YES	YES	YES	YES	YES
Observations	*26,190*	*25,312*	*25,170*	*24,423*	*25,342*	*15,868*	*26,043*	*21,544*

Note: Robust standard errors in parentheses are clustered at the station level. See notes in Table 3.

Table A12: Effects of Fires on Birth Weight Controlling for Gestational Age at Birth
Probability-adjusted counts of fires within 50km of stations (z-scores)

	ALL fires	ALL fires	UPWIND fires	Non-UPWIND fires	Upwind vs. Non-upwind		
					Difference	Difference	Difference
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
						Low birth weight per thousand	Very low birth weight per thousand
			Birth weight (in grams)				
Fires between week r and r-12	5.24	4.26	-48.70	7.86	-56.55	18.24	6.03
	(2.45)	(3.51)	(21.29)	(3.65)	(22.79)	(14.10)	(5.45)
Fires between week r-13 and r-25	1.65	4.71	21.63	5.02	16.60	14.08	-2.44
	(2.53)	(2.84)	(24.28)	(3.08)	(25.59)	(15.43)	(5.24)
Fires between week r-26 and r-38	-0.18	-7.32	-27.34	-5.59	-21.76	-22.61	0.92
	(3.57)	(6.11)	(23.97)	(6.47)	(24.49)	(13.82)	(5.00)
Mean/SD dependent variable			*3159.3 / 161.8*			*80.7 / 83.7*	*12.4 / 34.2*
Controls							
Date FE's	YES	YES	YES	YES	YES	YES	YES
Municipality FE's	YES	YES	YES	YES	YES	YES	YES
Gestational age	YES	YES	YES	YES	YES	YES	YES
Weather	NO	YES	YES	YES	YES	YES	YES

Note: Robust standard errors in parentheses are clustered at the station level. See notes in Table 3.

Table A13: Hospitalizations for adult women and hospitalizations and mortality for children under one year of age (inverse hyperbolic sine)

Risk-adjusted counts of fires within 50km of stations factoring-in prevailing wind direction (z-scores)

	Municipality of occurrence [1]	Municipality of residence [2]
PANEL A: Hospitalization rate of women 15 to 45		
Diff. UPWIND - NON-UPWIND	8.524	6.567
in week ending in t	(3.284)	(3.633)
PANEL B: Infant hospitalization rate		
Diff. UPWIND - NON-UPWIND	9.331	4.482
in week ending in t	(6.427)	(7.842)
PANEL C: Infant mortality rate		
Diff. UPWIND - NON-UPWIND	-2.259	-1.001
in week ending in t	(2.444)	(1.287)
Number of observations	*27,608*	*27,608*
Controls		
Date FE's	YES	YES
Location FE's	YES	YES
Weather	YES	YES
INPE-corrected fire counts	YES	YES

Note: Robust standard errors in parentheses are clustered at the station level. Dependent variables are rolling week counts.

Table A14: Mechanization, Fire, Economy, and Health

| | Fires per 100km2 | Log GDP per capita | Log jobs created | Log sugar jobs created | Birth weight | |
| | | | | | Without covariates | With covariates |
	[1]	[2]	[3]	[4]	[5]	[6]
Harvested area	0.212	0.0032	0.0024	0.0392	-0.04	-0.13
	[0.056]	[0.0015]	[0.0041]	[0.0128]	[0.40]	[0.42]
Green harvested a	-0.134	-0.0021	-0.007	-0.0185	-0.52	-0.43
	[0.038]	[0.0014]	[0.0032]	[0.0111]	[0.37]	[0.38]
Observations	2,255	2,255	2,255	1,380	1,628,532	1,582,245
Mean of dep. var.	3.5	2.9	4.6	0.9	3140	3143
SD of dep. var.	4.2	0.5	0.9	2.3	5446	5446

Note: OLS regressions on an unbalanced panel of 645 municipalities with both green harvest data (from CANASAT) and job creation data (from SEADE). Brackets contain standard errors clustered at the municipality level.