8 Appendix

Additional Data Details

The raw NSS data include over 317,000 rural households. We drop around 1,700 households in India's far off islands (Lakshwadeep, Andoman and Nicobar), as well as any households in districts with very few observations (12 or fewer) or in districts that only show up in a single round. We also drop around 100 households with no survey date, 300 who do not list consumption of any food items, 180 missing core demographic information, and 800 with unusually high numbers of meals eaten away from home or of meals served to non-household members. We use district codes that are geographically consistent over time. These codes take into account any changes in districts (e.g., a district split into two, or two districts combined into one), allowing one to create a panel of districts.

The NSS data also include the number of meals served to non-household members and the number of outside meals consumed. Following Carpena (2019), we assume that on average, meals served to others and acquired outside the house have similar diet composition to in-house consumption, and we adjust nutrient consumption accordingly. We use the adjustment factor $\frac{(N_h+N_a)}{(N_h+N_o)}$, where N_h is the number of meals household members have eaten at home in the last 30 days, and N_a and N_o are the same for meals away from home and meals given to non-household members.[8]

We determine each household member's caloric and iron needs by their age, gender, and occupation, and then add up the total requirements for the household. We assign the adults in each household to a particular "effort category," which affects caloric needs, based on the head of household's occupation (individual occupations are not included in these data).

We define our main rainfall control as the "rainfall shock." Following Shah and Millett Steinberg (2017), this takes on a value of 1 if rainfall in a given district-season-year exceeds the 80th percentile of its historical distribution (defined as 1979 to 2012) of rainfall for that district-season, and a value of -1 if rainfall is below the 20th percentile of the historical distribution (0 otherwise). We create three other measures of precipitation to use as controls across different model specifications. The first involves creating separate wet and dry shocks, which each take on a value of 1 if the rainfall is above the 80th or below the 20th percentile, respectively. The second measures the deviation above or below the long-run mean, capturing each separately. The third is total precipitation.

[8]Following Carpena (2019), we drop any households with adjustment factors above 2 or below 0.5. This results in dropping 817 households, or 0.26 percent of the sample.

Appendix Tables

Table A1: Additional Rainfall Controls and Non-Growing Season Weather

	Mean	SD
Dry growing season (dummy)	0.16	0.37
Wet growing season (dummy)	0.27	0.44
Growing season dry deviation (m)	0.07	0.12
Growing season wet deviation (m)	0.13	0.18
Non-growing season days $\geq$ 110°F	1.15	2.94
Non-growing season days 100-110°F	23.40	20.05
Non-growing season days 90-100°F	37.25	19.71
Non-growing season days 80-90°F	19.57	18.08
Non-growing season days 70-80°F	5.91	12.02
Non-growing season days <70°F	4.72	16.96
Non-growing season rainfall (m)	0.22	0.30
Non-growing season rainfall shock	0.02	0.62
Dry non-growing season (dummy)	0.18	0.39
Wet non-growing season (dummy)	0.21	0.40
Non-growing season dry deviation (m)	0.02	0.05
Non-growing season wet deviation (m)	0.04	0.09

This table shows means and standard deviations of alternative precipitation controls and non-growing season (March to May) weather variables from 2002 to 2011. Weather variables are from ERA5 and are separated by growing season (June to December) and non-growing season (March to May). The dry season dummy represents a season with less than the 20th historical (from 1979-2012) percentile of rainfall for a particular district. The wet season dummy indicates rainfall above the 80th percentile. The rainfall shock takes a value of -1 for a dry season, 1 for a wet season, and 0 otherwise. The dry deviation represents the amount of rainfall (in m) below the historical median (and is 0 in a wet season). The wet deviation is analogous for above median rainfall.

Table A2: Employment Summary Statistics

	Percentage of Working-Age People
Work in Agriculture	32.29
Work in Agriculture, Home Enterprise	22.52
Work in Agriculture, Out of Home	9.76
Work in non-Agriculture	21.81
Work in non-Agriculture, Home Enterprise	9.77
Work in non-Agriculture, Out of Home	12.04
Unemployed	1.89

This table shows the average percentage of working-age (14-65) individuals in different employment categories. The data, from the NSS, include 1,150,280 individuals and cover the period 2004 to 2012.

Table A3: Mortality Rate Summary Statistics

Age Group	Deaths per 1,000 People
<18	4.6
18-39	2.3
≥ 40	17.0
≥ 60	35.9

This table shows the average number of yearly deaths per 1000 people for different age groups across India for the period 2012 to 2019. We calculate them using data from the National Family Health Survey, rounds 4 and 5.

Table A4: This Year Growing vs. non-Growing Seasons: Yields

	(1) 100 x Log of yield (top 6 crops)	(2) 100 x Log of yield (top 5 monsoon crops)
GS Day ≥110°F	-1.261***	-2.646***
	(0.403)	(0.706)
GS Day 100-110°F	-1.296***	-2.544***
	(0.278)	(0.443)
GS Day 90-100°F	-0.975***	-1.537***
	(0.229)	(0.310)
GS Day 80-90°F	-0.588***	-1.163***
	(0.223)	(0.302)
GS Day 70-80°F	-0.158	-0.731**
	(0.207)	(0.305)
GS Rainfall shock	2.415***	1.238
	(0.810)	(1.141)
Non GS Day ≥110°F	-1.300	-0.972**
	(0.803)	(0.465)
Non GS Day 100-110°F	-1.316	-0.285
	(0.804)	(0.405)
Non GS Day 90-100°F	-1.426*	-0.526
	(0.814)	(0.398)
Non GS Day 80-90°F	-1.314	-0.378
	(0.813)	(0.381)
Non GS Day 70-80°F	-1.124	-0.041
	(0.865)	(0.404)
Non GS Rainfall Shock	-3.744***	-4.481***
	(0.839)	(1.120)
Observations	3,365	3,365
Mean Outcome	507.88	496.74
District FE	X	X
Year FE	X	X
Demographic controls	X	X
State time trends	X	X
Rainfall shocks	X	X
Last Year's Weather	X	X
This Year's Weather	X	X

This table shows the change in (100x) the log of yield for the top 6 crops in India (column 1 - rice, wheat, sugarcane, groundnut, sorghum, and maize), and the top 5 monsoon crops (column 2 - excludes wheat) for an additional day at a given temperature during this year's growing and non growing seasons relative to a day below 70°F. Both models include 10°F temperature bins from 70-80°F to above 110°F for this year's growing season (June - December) and non-growing season (March - May). They omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. Each model includes district and year fixed effects, and rainfall shocks. Standard errors (shown in parentheses) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. *p<0.1 **p<0.05 ***p<0.01

Table A5: Core Specification: Last Year's Non-Growing Season Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	100x Log of Daily per Capita Calories	Percent of Households Below 100% Calories Adequacy	Percent of Households Below 80% Calories Adequacy	Percent of Households Below 60% Calories Adequacy	Percent of Households Below 80% Protein Adequacy	Percent of Households Below 80% Iron Adequacy	Percent of Households Below 80% Zinc Adequacy	Percent of Households Below 80% Thiamine Adequacy	Percent of Households Below 80% Niacin Adequacy	Percent of Households Below 80% Riboflavin Adequacy
Day $\geq$110°F	0.012	0.000	-0.270**	-0.061	0.051	0.111	0.011	-0.131	-0.087	0.202*
	(0.091)	(0.160)	(0.116)	(0.047)	(0.087)	(0.121)	(0.116)	(0.112)	(0.133)	(0.110)
Day 100-110°F	0.036	0.002	-0.199**	-0.056	-0.045	0.017	-0.054	-0.210**	-0.174	0.093
	(0.071)	(0.127)	(0.091)	(0.037)	(0.067)	(0.098)	(0.094)	(0.094)	(0.112)	(0.088)
Day 90-100°F	0.033	-0.009	-0.195**	-0.073**	-0.039	-0.031	-0.058	-0.232***	-0.183*	0.005
	(0.065)	(0.120)	(0.084)	(0.034)	(0.061)	(0.090)	(0.086)	(0.085)	(0.106)	(0.079)
Day 80-90°F	-0.015	0.067	-0.146*	-0.047	-0.031	0.004	-0.033	-0.189**	-0.144	0.057
	(0.061)	(0.115)	(0.082)	(0.032)	(0.059)	(0.085)	(0.082)	(0.080)	(0.103)	(0.075)
Day 70-80°F	0.028	0.082	-0.083	-0.007	0.022	-0.034	-0.028	-0.065	-0.014	0.029
	(0.069)	(0.126)	(0.085)	(0.037)	(0.064)	(0.084)	(0.101)	(0.096)	(0.114)	(0.084)
Rainfall Shock	-0.184	0.440	0.457	-0.020	0.209	0.167	0.465	0.406	0.626*	0.363
	(0.236)	(0.376)	(0.328)	(0.141)	(0.268)	(0.294)	(0.333)	(0.296)	(0.349)	(0.280)
Observations	314,413	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414
Mean Outcome	765.37	51.00	20.41	3.94	11.62	54.69	21.52	35.11	22.05	51.97
District FE	X	X	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X	X	X
Month FE	X	X	X	X	X	X	X	X	X	X
Demographic controls	X	X	X	X	X	X	X	X	X	X
State time trends	X	X	X	X	X	X	X	X	X	X
Rainfall shocks	X	X	X	X	X	X	X	X	X	X
Last year's weather	X	X	X	X	X	X	X	X	X	X
This year's weather	X	X	X	X	X	X	X	X	X	X

This table shows the change in our main outcome variables for an additional day at a given temperature during last year's non-growing season relative to a day below 70°F (Equation 1). It is the same specification as Table 2, which shows last year's growing season weather. The outcomes in column 1 are multiplied by 100 so the coefficients can be interpreted as percentage changes. The models all include 10°F temperature bins from 70-80°F to above 110°F for this and last year's growing season (June-December) and non-growing season (March-May). We omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. Each model includes district, year, and month fixed effects, demographic controls, rainfall shocks, and state time trends. Standard errors (shown in parentheses) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. *p<0.1 **p<0.05 ***p<0.01

Table A6: Core Specification: This Year's Growing Season Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	100x Log of Daily per Capita Calories	Percent of Households Below 100% Calories Adequacy	Percent of Households Below 80% Calories Adequacy	Percent of Households Below 60% Calories Adequacy	Percent of Households Below 80% Protein Adequacy	Percent of Households Below 80% Iron Adequacy	Percent of Households Below 80% Zinc Adequacy	Percent of Households Below 80% Thiamine Adequacy	Percent of Households Below 80% Niacin Adequacy	Percent of Households Below 80% Riboflavin Adequacy
Day ≥110°F	-0.040	0.192	0.139	-0.023	-0.064	0.090	0.003	-0.113	-0.022	-0.115
	(0.092)	(0.151)	(0.119)	(0.047)	(0.080)	(0.119)	(0.110)	(0.093)	(0.118)	(0.098)
Day 100-110°F	-0.044	0.036	0.046	0.021	-0.024	-0.038	-0.005	-0.206***	-0.072	-0.021
	(0.064)	(0.108)	(0.081)	(0.033)	(0.060)	(0.070)	(0.087)	(0.073)	(0.089)	(0.069)
Day 90-100°F	-0.080	0.096	0.091	0.005	-0.002	0.003	0.035	-0.099	-0.003	0.011
	(0.053)	(0.093)	(0.065)	(0.025)	(0.047)	(0.059)	(0.075)	(0.063)	(0.074)	(0.056)
Day 80-90°F	-0.071	0.085	0.075	0.002	0.001	-0.009	0.039	-0.092	0.015	-0.005
	(0.051)	(0.090)	(0.062)	(0.024)	(0.045)	(0.058)	(0.073)	(0.062)	(0.071)	(0.053)
Day 70-80°F	-0.100**	0.139*	0.096	0.018	0.004	0.012	0.020	-0.088	0.029	0.030
	(0.048)	(0.082)	(0.058)	(0.023)	(0.041)	(0.057)	(0.065)	(0.058)	(0.064)	(0.052)
Rainfall Shock	0.465**	-0.484	-0.038	-0.078	-0.251	-0.477*	-0.138	-0.377	-0.323	-0.158
	(0.204)	(0.348)	(0.292)	(0.123)	(0.235)	(0.263)	(0.297)	(0.259)	(0.302)	(0.263)
Observations	314,413	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414
Mean Outcome	765.37	51.00	20.41	3.94	11.62	54.69	21.52	35.11	22.05	51.97
District FE	X	X	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X	X	X
Month FE	X	X	X	X	X	X	X	X	X	X
Demographic controls	X	X	X	X	X	X	X	X	X	X
State time trends	X	X	X	X	X	X	X	X	X	X
Rainfall shocks	X	X	X	X	X	X	X	X	X	X
Last year's weather	X	X	X	X	X	X	X	X	X	X
This year's weather	X	X	X	X	X	X	X	X	X	X

This table shows the change in our main outcome variables for an additional day at a given temperature during this year's growing season relative to a day below 70°F (Equation 1). It is the same specification as Table 2, which shows last year's growing season weather. The outcomes in column 1 are multiplied by 100 so the coefficients can be interpreted as percentage changes. The models all include 10°F temperature bins from 70-80°F to above 110°F for this and last year's growing season (June-December) and non-growing season (March-May). We omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. Each model includes district, year, and month fixed effects, demographic controls, rainfall shocks, and state time trends. Standard errors (shown in parentheses) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. *p<0.1 **p<0.05 ***p<0.01

Table A7: District-Month and Year-Month Fixed Effects: Last Year's Growing Season Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	100x Log of Daily per Capita Calories	Percent of Households Below 100% Calories Adequacy	Percent of Households Below 80% Calories Adequacy	Percent of Households Below 60% Calories Adequacy	Percent of Households Below 80% Protein Adequacy	Percent of Households Below 80% Iron Adequacy	Percent of Households Below 80% Zinc Adequacy	Percent of Households Below 80% Thiamine Adequacy	Percent of Households Below 80% Niacin Adequacy	Percent of Households Below 80% Riboflavin Adequacy
Day ≥110°F	-0.062	0.242	0.447***	0.125**	0.082	0.321**	0.302**	0.295**	0.435***	-0.038
	(0.115)	(0.202)	(0.140)	(0.052)	(0.091)	(0.142)	(0.129)	(0.115)	(0.131)	(0.134)
Day 100-110°F	-0.048	0.110	0.259***	0.093***	0.056	0.123*	0.156*	0.167**	0.248***	0.040
	(0.056)	(0.097)	(0.079)	(0.029)	(0.051)	(0.070)	(0.080)	(0.068)	(0.082)	(0.064)
Day 90-100°F	-0.056	0.111	0.231***	0.078***	0.055	0.147**	0.128*	0.187***	0.227***	0.105*
	(0.052)	(0.089)	(0.072)	(0.025)	(0.044)	(0.066)	(0.072)	(0.064)	(0.073)	(0.057)
Day 80-90°F	-0.047	0.112	0.221***	0.065***	0.038	0.120*	0.123*	0.174***	0.206***	0.092*
	(0.051)	(0.085)	(0.071)	(0.025)	(0.044)	(0.064)	(0.070)	(0.062)	(0.072)	(0.056)
Day 70-80°F	-0.015	0.063	0.115*	0.037	-0.028	0.044	0.016	0.071	0.091	0.028
	(0.048)	(0.079)	(0.066)	(0.023)	(0.039)	(0.059)	(0.062)	(0.058)	(0.063)	(0.052)
Rainfall Shock	-0.060	-0.146	-0.036	0.172	0.468*	0.014	0.385	-0.413	0.154	-0.319
	(0.246)	(0.418)	(0.332)	(0.138)	(0.259)	(0.331)	(0.345)	(0.293)	(0.320)	(0.286)
Observations	314,404	314,405	314,405	314,405	314,405	314,405	314,405	314,405	314,405	314,405
Mean Outcome	765.37	51.00	20.41	3.94	11.62	54.69	21.52	35.11	22.05	51.97
District-Month FE	X	X	X	X	X	X	X	X	X	X
Year-Month FE	X	X	X	X	X	X	X	X	X	X
Demographic controls	X	X	X	X	X	X	X	X	X	X
State time trends	X	X	X	X	X	X	X	X	X	X
Rainfall shocks	X	X	X	X	X	X	X	X	X	X
Last year's weather	X	X	X	X	X	X	X	X	X	X
This year's weather	X	X	X	X	X	X	X	X	X	X

This table shows the change in our main outcome variables for an additional day at a given temperature during last year's growing season relative to a day below 70°F. The outcomes in column 1 are multiplied by 100 so the coefficients can be interpreted as percentage changes. The models all include 10°F temperature bins from 70-80°F to above 110°F for this and last year's growing season (June-December) and non-growing season (March-May). We omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. Each model includes district-month and year-month fixed effects (as opposed to our main estimates in Table 2, which includes district, month, and year fixed effects), demographic controls, rainfall shocks, and state time trends. Standard errors (shown in parentheses) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. *p<0.1 **p<0.05 ***p<0.01

Table A8: District-Specific Year Trends: Last Year's Growing Season Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	100x Log of Daily per Capita Calories	Percent of Households Below 100% Calories Adequacy	Percent of Households Below 80% Calories Adequacy	Percent of Households Below 60% Calories Adequacy	Percent of Households Below 80% Protein Adequacy	Percent of Households Below 80% Iron Adequacy	Percent of Households Below 80% Zinc Adequacy	Percent of Households Below 80% Thiamine Adequacy	Percent of Households Below 80% Niacin Adequacy	Percent of Households Below 80% Riboflavin Adequacy
Day ≥110°F	-0.000	0.268	0.382***	0.110**	0.026	0.205	0.315**	0.385***	0.498***	0.015
	(0.114)	(0.195)	(0.137)	(0.054)	(0.089)	(0.141)	(0.123)	(0.110)	(0.125)	(0.128)
Day 100-110°F	-0.032	0.087	0.215***	0.075***	0.058	0.105*	0.187***	0.269***	0.266***	0.055
	(0.050)	(0.089)	(0.072)	(0.026)	(0.046)	(0.063)	(0.069)	(0.063)	(0.073)	(0.061)
Day 90-100°F	-0.031	0.066	0.187***	0.063***	0.059	0.123**	0.158**	0.279***	0.222***	0.116**
	(0.046)	(0.082)	(0.065)	(0.023)	(0.040)	(0.059)	(0.065)	(0.061)	(0.068)	(0.054)
Day 80-90°F	-0.033	0.094	0.186***	0.051**	0.044	0.104*	0.158**	0.261***	0.215***	0.107**
	(0.044)	(0.077)	(0.063)	(0.023)	(0.039)	(0.056)	(0.063)	(0.059)	(0.065)	(0.053)
Day 70-80°F	-0.021	0.060	0.117**	0.046**	0.001	0.026	0.073	0.156***	0.141**	0.033
	(0.044)	(0.073)	(0.059)	(0.021)	(0.036)	(0.055)	(0.058)	(0.055)	(0.059)	(0.049)
Rainfall Shock	-0.026	-0.341	-0.340	0.070	0.384	-0.082	0.396	-0.205	-0.070	-0.262
	(0.231)	(0.391)	(0.314)	(0.130)	(0.241)	(0.314)	(0.303)	(0.291)	(0.295)	(0.278)
Observations	314,413	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414
Mean Outcome	765.37	51.00	20.41	3.94	11.62	54.69	21.52	35.11	22.05	51.97
District FE	X	X	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X	X	X
Month FE	X	X	X	X	X	X	X	X	X	X
Demographic controls	X	X	X	X	X	X	X	X	X	X
District time trends	X	X	X	X	X	X	X	X	X	X
Rainfall shocks	X	X	X	X	X	X	X	X	X	X
Last year's weather	X	X	X	X	X	X	X	X	X	X
This year's weather	X	X	X	X	X	X	X	X	X	X

This table shows the change in our main outcome variables for an additional day at a given temperature during last year's growing season relative to a day below 70°F. The outcomes in column 1 are multiplied by 100 so the coefficients can be interpreted as percentage changes. The models all include 10°F temperature bins from 70-80°F to above 110°F for this and last year's growing season (June-December) and non-growing season (March-May). We omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. Each model includes district, year, and month fixed effects, demographic controls, and rainfall shocks. In contrast to our main estimates (Table 2), these models include district-specific year trends, as opposed to state-specific year trends. Standard errors (shown in parentheses) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. *p<0.1 **p<0.05 ***p<0.01

Table A9: State-Specific Quadratic Trends: Last Year's Growing Season Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	100x Log of Daily per Capita Calories	Percent of Households Below 100% Calories Adequacy	Percent of Households Below 80% Calories Adequacy	Percent of Households Below 60% Calories Adequacy	Percent of Households Below 80% Protein Adequacy	Percent of Households Below 80% Iron Adequacy	Percent of Households Below 80% Zinc Adequacy	Percent of Households Below 80% Thiamine Adequacy	Percent of Households Below 80% Niacin Adequacy	Percent of Households Below 80% Riboflavin Adequacy
Day $\geq$110°F	0.070	0.165	0.370**	0.123**	0.009	0.288*	0.238*	0.325***	0.437***	-0.130
	(0.115)	(0.198)	(0.145)	(0.056)	(0.093)	(0.151)	(0.139)	(0.119)	(0.139)	(0.131)
Day 100-110°F	-0.013	0.128	0.222***	0.079***	0.044	0.160**	0.172**	0.188***	0.241***	0.002
	(0.055)	(0.094)	(0.078)	(0.028)	(0.047)	(0.068)	(0.081)	(0.064)	(0.078)	(0.062)
Day 90-100°F	-0.049	0.160*	0.225***	0.073***	0.071	0.214***	0.179**	0.229***	0.258***	0.096*
	(0.052)	(0.088)	(0.074)	(0.026)	(0.044)	(0.066)	(0.077)	(0.063)	(0.074)	(0.058)
Day 80-90°F	-0.051	0.178**	0.225***	0.063**	0.056	0.192***	0.181**	0.223***	0.249***	0.096*
	(0.051)	(0.084)	(0.073)	(0.026)	(0.043)	(0.064)	(0.075)	(0.062)	(0.073)	(0.055)
Day 70-80°F	-0.018	0.123	0.128*	0.035	-0.005	0.109*	0.080	0.131**	0.152**	0.033
	(0.049)	(0.078)	(0.068)	(0.025)	(0.040)	(0.060)	(0.070)	(0.059)	(0.069)	(0.051)
Rainfall Shock	-0.113	-0.134	0.161	0.247**	0.433*	-0.002	0.411	-0.431	0.135	-0.158
	(0.241)	(0.410)	(0.325)	(0.126)	(0.255)	(0.326)	(0.344)	(0.289)	(0.325)	(0.276)
Observations	314,413	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414
Mean Outcome	765.37	51.00	20.41	3.94	11.62	54.69	21.52	35.11	22.05	51.97
District FE	X	X	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X	X	X
Month FE	X	X	X	X	X	X	X	X	X	X
Demographic controls	X	X	X	X	X	X	X	X	X	X
State quadratic trends	X	X	X	X	X	X	X	X	X	X
Rainfall shocks	X	X	X	X	X	X	X	X	X	X
Last year's weather	X	X	X	X	X	X	X	X	X	X
This year's weather	X	X	X	X	X	X	X	X	X	X

This table shows the change in our main outcome variables for an additional day at a given temperature during last year's growing season relative to a day below 70°F. The outcomes in column 1 are multiplied by 100 so the coefficients can be interpreted as percentage changes. The models all include 10°F temperature bins from 70-80°F to above 110°F for this and last year's growing season (June-December) and non-growing season (March-May). We omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. Each model includes district, year, and month fixed effects, demographic controls, and rainfall shocks. In contrast to our main estimates (Table 2), these models include state-specific quadratic trends, as opposed to state-specific linear trends. Standard errors (shown in parentheses) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. *p<0.1 **p<0.05 ***p<0.01

Table A10: First Differences: Last Year's Growing Season Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	100x Log of Daily per Capita Calories	Percent of Households Below 100% Calories Adequacy	Percent of Households Below 80% Calories Adequacy	Percent of Households Below 60% Calories Adequacy	Percent of Households Below 80% Protein Adequacy	Percent of Households Below 80% Iron Adequacy	Percent of Households Below 80% Zinc Adequacy	Percent of Households Below 80% Thiamine Adequacy	Percent of Households Below 80% Niacin Adequacy	Percent of Households Below 80% Riboflavin Adequacy
Day $\geq$110°F	0.096	0.008	0.350**	0.203***	0.065	0.181	0.267*	0.396***	0.490***	-0.010
	(0.139)	(0.195)	(0.164)	(0.054)	(0.093)	(0.154)	(0.143)	(0.128)	(0.144)	(0.169)
Day 100-110°F	0.016	0.041	0.166**	0.078**	0.092**	0.097	0.192**	0.249***	0.266***	-0.030
	(0.044)	(0.082)	(0.072)	(0.031)	(0.039)	(0.058)	(0.084)	(0.066)	(0.090)	(0.086)
Day 90-100°F	0.024	-0.000	0.126**	0.063**	0.117***	0.136*	0.188**	0.290***	0.242***	0.066
	(0.042)	(0.072)	(0.062)	(0.030)	(0.038)	(0.067)	(0.083)	(0.061)	(0.085)	(0.077)
Day 80-90°F	0.009	0.039	0.148**	0.060**	0.098**	0.138**	0.190**	0.261***	0.234**	0.042
	(0.041)	(0.072)	(0.058)	(0.026)	(0.038)	(0.063)	(0.083)	(0.063)	(0.088)	(0.071)
Day 70-80°F	0.033	-0.015	0.089*	0.055**	0.056	0.051	0.114	0.149**	0.147	-0.014
	(0.045)	(0.074)	(0.052)	(0.025)	(0.036)	(0.055)	(0.085)	(0.059)	(0.091)	(0.062)
Rainfall Shock	0.104	-0.567	-0.297	0.147	0.377	-0.108	0.240	-0.343	0.047	-0.287
	(0.293)	(0.495)	(0.296)	(0.105)	(0.263)	(0.333)	(0.391)	(0.386)	(0.370)	(0.424)
Observations	5,126	5,126	5,126	5,126	5,126	5,126	5,126	5,126	5,126	5,126
Mean Outcome	765.37	51.00	20.41	3.94	11.62	54.69	21.52	35.11	22.05	51.97
State FE	X	X	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X	X	X
Rainfall shocks	X	X	X	X	X	X	X	X	X	X
Last year's weather	X	X	X	X	X	X	X	X	X	X
This year's weather	X	X	X	X	X	X	X	X	X	X

This table shows the change in our main outcome variables for an additional day at a given temperature during last year's growing season relative to a day below 70°F. The models are estimated using a first differences regression as follows. First, we collapse all outcomes to the district-year level. Second, for each outcome and weather variable, we subtract the prior year from the current year to generate year over year changes. Third, we regress the change in the outcome variable relative to the prior year on the change in the weather variables relative to the prior year (as a result, the year 2003, and any other district-years without observations in the prior year, are dropped). The outcomes in column 1 are multiplied by 100 so the coefficients can be interpreted as percentage changes. The models all include 10°F temperature bins from 70-80°F to above 110°F for this and last year's growing season (June-December) and non-growing season (March-May). We omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. Each model includes state and year fixed effects and rainfall shocks, and is weighted by the number of observations in each district across all years. Standard errors (shown in parentheses) are clustered at the state level to account for any inter-state correlation of the error terms. *p<0.1 **p<0.05 ***p<0.01

Table A11: Remove This Year's Weather: Last Year's Growing Season Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	100x Log of Daily per Capita Calories	Percent of Households Below 100% Calories Adequacy	Percent of Households Below 80% Calories Adequacy	Percent of Households Below 60% Calories Adequacy	Percent of Households Below 80% Protein Adequacy	Percent of Households Below 80% Iron Adequacy	Percent of Households Below 80% Zinc Adequacy	Percent of Households Below 80% Thiamine Adequacy	Percent of Households Below 80% Niacin Adequacy	Percent of Households Below 80% Riboflavin Adequacy
Day $\geq$110°F	-0.009	0.131	0.268**	0.102**	0.020	0.155	0.221**	0.191*	0.302***	-0.038
	(0.087)	(0.153)	(0.111)	(0.044)	(0.073)	(0.110)	(0.108)	(0.097)	(0.109)	(0.102)
Day 100-110°F	-0.034	0.121	0.207***	0.078***	0.048	0.070	0.164**	0.155***	0.204***	0.011
	(0.045)	(0.079)	(0.067)	(0.024)	(0.041)	(0.057)	(0.066)	(0.057)	(0.065)	(0.053)
Day 90-100°F	-0.046	0.109	0.177***	0.069***	0.046	0.090*	0.133**	0.148***	0.172***	0.073
	(0.042)	(0.073)	(0.062)	(0.022)	(0.036)	(0.054)	(0.061)	(0.055)	(0.061)	(0.048)
Day 80-90°F	-0.044	0.123*	0.175***	0.056**	0.032	0.069	0.139**	0.149***	0.160***	0.071
	(0.041)	(0.069)	(0.059)	(0.022)	(0.036)	(0.053)	(0.060)	(0.054)	(0.060)	(0.046)
Day 70-80°F	-0.015	0.078	0.094*	0.034	-0.020	0.003	0.051	0.079	0.087	0.011
	(0.041)	(0.067)	(0.056)	(0.021)	(0.033)	(0.051)	(0.056)	(0.052)	(0.057)	(0.045)
Rainfall Shock	-0.157	-0.027	-0.122	0.153	0.450**	-0.016	0.433	-0.403	0.058	-0.271
	(0.211)	(0.359)	(0.286)	(0.117)	(0.225)	(0.292)	(0.297)	(0.265)	(0.284)	(0.252)
Observations	314,413	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414
Mean Outcome	765.37	51.00	20.41	3.94	11.62	54.69	21.52	35.11	22.05	51.97
District FE	X	X	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X	X	X
Month FE	X	X	X	X	X	X	X	X	X	X
Demographic controls	X	X	X	X	X	X	X	X	X	X
State time trends	X	X	X	X	X	X	X	X	X	X
Rainfall shocks	X	X	X	X	X	X	X	X	X	X
Last year's weather	X	X	X	X	X	X	X	X	X	X
This year's weather										

This table shows the change in our main outcome variables for an additional day at a given temperature during last year's growing season relative to a day below 70°F. The outcomes in column 1 are multiplied by 100 so the coefficients can be interpreted as percentage changes. The models all include 10°F temperature bins from 70-80°F to above 110°F for last year's growing season (June - December) and non-growing season (March-May). We omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. In contrast to our main estimates (Table 2), these models do not include this year's weather. Each model includes district, year, and month fixed effects, demographic controls, rainfall shocks, and state time trends. Standard errors (shown in parentheses) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. *p<0.1 **p<0.05 ***p<0.01

Table A12: Dry and Wet Shocks: Last Year's Growing Season Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	100x Log of Daily per Capita Calories	Percent of Households Below 100% Calories Adequacy	Percent of Households Below 80% Calories Adequacy	Percent of Households Below 60% Calories Adequacy	Percent of Households Below 80% Protein Adequacy	Percent of Households Below 80% Iron Adequacy	Percent of Households Below 80% Zinc Adequacy	Percent of Households Below 80% Thiamine Adequacy	Percent of Households Below 80% Niacin Adequacy	Percent of Households Below 80% Riboflavin Adequacy
Day ≥110°F	0.015	0.193	0.351***	0.107**	0.012	0.248*	0.233*	0.302***	0.394***	-0.086
	(0.108)	(0.187)	(0.134)	(0.051)	(0.088)	(0.138)	(0.125)	(0.114)	(0.127)	(0.120)
Day 100-110°F	-0.035	0.099	0.246***	0.092***	0.054	0.121*	0.170**	0.187***	0.241***	0.038
	(0.053)	(0.093)	(0.077)	(0.027)	(0.047)	(0.068)	(0.077)	(0.064)	(0.077)	(0.060)
Day 90-100°F	-0.058	0.115	0.237***	0.083***	0.069*	0.160**	0.163**	0.227***	0.241***	0.112**
	(0.049)	(0.086)	(0.070)	(0.024)	(0.041)	(0.065)	(0.069)	(0.061)	(0.070)	(0.053)
Day 80-90°F	-0.060	0.137*	0.236***	0.070***	0.058	0.143**	0.171**	0.227***	0.235***	0.109**
	(0.049)	(0.082)	(0.069)	(0.024)	(0.041)	(0.063)	(0.069)	(0.060)	(0.069)	(0.052)
Day 70-80°F	-0.032	0.095	0.144**	0.045**	-0.002	0.072	0.074	0.141**	0.142**	0.043
	(0.046)	(0.075)	(0.064)	(0.023)	(0.037)	(0.060)	(0.061)	(0.057)	(0.061)	(0.048)
Dry Shock	0.741**	-1.066*	-0.799*	-0.350**	-1.400***	-0.780*	-1.755***	-0.776*	-1.211***	-0.541
	(0.333)	(0.574)	(0.431)	(0.169)	(0.340)	(0.452)	(0.450)	(0.406)	(0.447)	(0.387)
Wet Shock	0.456	-1.053**	-0.850*	-0.032	-0.391	-0.720*	-0.688	-1.423***	-0.957**	-0.954**
	(0.315)	(0.529)	(0.438)	(0.185)	(0.338)	(0.412)	(0.423)	(0.399)	(0.417)	
Observations	314,413	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414
Mean Outcome	765.37	51.00	20.41	3.94	11.62	54.69	21.52	35.11	22.05	51.97
District FE	X	X	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X	X	X
Month FE	X	X	X	X	X	X	X	X	X	X
Demographic controls	X	X	X	X	X	X	X	X	X	X
State time trends	X	X	X	X	X	X	X	X	X	X
Dry shocks	X	X	X	X	X	X	X	X	X	X
Wet shocks	X	X	X	X	X	X	X	X	X	X
Last year's weather	X	X	X	X	X	X	X	X	X	X
This year's weather	X	X	X	X	X	X	X	X	X	X

This table shows the change in our main outcome variables for an additional day at a given temperature during last year's growing season relative to a day below 70°F. The outcomes in column 1 are multiplied by 100 so the coefficients can be interpreted as percentage changes. The models all include 10°F temperature bins from 70-80°F to above 110°F for this and last year's growing season (June-December) and non-growing season (March-May). We omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. Each model includes district, year and month fixed effects, demographic controls, and state time trends. In contrast to our main specification (Table 2), these models include separate dry and wet shocks rather than a single rainfall shock. Standard errors (shown in parentheses) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. *p<0.1 **p<0.05 ***p<0.01

Table A13: Dry and Wet Deviations: Last Year's Growing Season Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	100x Log of Daily per Capita Calories	Percent of Households Below 100% Calories Adequacy	Percent of Households Below 80% Calories Adequacy	Percent of Households Below 60% Calories Adequacy	Percent of Households Below 80% Protein Adequacy	Percent of Households Below 80% Iron Adequacy	Percent of Households Below 80% Zinc Adequacy	Percent of Households Below 80% Thiamine Adequacy	Percent of Households Below 80% Niacin Adequacy	Percent of Households Below 80% Riboflavin Adequacy
Day ≥110°F	0.027	0.184	0.331**	0.108**	-0.000	0.274**	0.219*	0.363***	0.394***	-0.085
	(0.107)	(0.184)	(0.130)	(0.051)	(0.083)	(0.137)	(0.118)	(0.111)	(0.120)	(0.119)
Day 100-110°F	-0.041	0.130	0.256***	0.094***	0.057	0.142**	0.186**	0.248***	0.275***	0.055
	(0.052)	(0.089)	(0.075)	(0.027)	(0.047)	(0.065)	(0.074)	(0.064)	(0.074)	(0.057)
Day 90-100°F	-0.064	0.143*	0.244***	0.084***	0.071*	0.182***	0.179***	0.283***	0.276***	0.129**
	(0.048)	(0.083)	(0.069)	(0.024)	(0.041)	(0.063)	(0.067)	(0.063)	(0.068)	(0.052)
Day 80-90°F	-0.066	0.157**	0.242***	0.073***	0.059	0.159**	0.182***	0.267***	0.260***	0.122**
	(0.048)	(0.080)	(0.068)	(0.024)	(0.041)	(0.062)	(0.067)	(0.061)	(0.068)	(0.051)
Day 70-80°F	-0.039	0.114	0.154**	0.046**	0.003	0.083	0.089	0.168***	0.169***	0.056
	(0.046)	(0.075)	(0.063)	(0.023)	(0.037)	(0.059)	(0.061)	(0.058)	(0.061)	(0.048)
Dry Deviation	3.459***	-6.352***	-2.408*	-1.085*	-3.631***	-4.374***	-6.267***	-6.024***	-5.578***	-2.407*
	(1.024)	(1.906)	(1.343)	(0.595)	(1.173)	(1.296)	(1.532)	(1.511)	(1.486)	(1.419)
Wet Deviation	1.744**	-3.111**	-2.310**	-0.246	-0.651	-2.180**	-1.732	-2.929***	-2.390**	-2.175**
	(0.820)	(1.407)	(1.167)	(0.472)	(0.920)	(1.008)	(1.152)	(1.113)	(1.170)	(1.062)
Observations	314,413	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414
Mean Outcome	765.37	51.00	20.41	3.94	11.62	54.69	21.52	35.11	22.05	51.97
District FE	X	X	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X	X	X
Month FE	X	X	X	X	X	X	X	X	X	X
Demographic controls	X	X	X	X	X	X	X	X	X	X
State time trends	X	X	X	X	X	X	X	X	X	X
Dry deviations	X	X	X	X	X	X	X	X	X	X
Wet deviations	X	X	X	X	X	X	X	X	X	X
Last year's weather	X	X	X	X	X	X	X	X	X	X
This year's weather	X	X	X	X	X	X	X	X	X	X

This table shows the change in our main outcome variables for an additional day at a given temperature during last year's growing season relative to a day below 70°F. The outcomes in column 1 are multiplied by 100 so the coefficients can be interpreted as percentage changes. The models all include 10°F temperature bins from 70-80°F to above 110°F for this and last year's growing season (June-December) and non-growing season (March-May). We omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. Each model includes district, year and month fixed effects, demographic controls, and state time trends. In contrast to our main specification (Table 2), these models include separate dry and wet deviations rather than a single rainfall shock. Standard errors (shown in parentheses) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. *p<0.1 **p<0.05 ***p<0.01

Table A14: Total Rainfall: Last Year's Growing Season Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	100x Log of Daily per Capita Calories	Percent of Households Below 100% Calories Adequacy	Percent of Households Below 80% Calories Adequacy	Percent of Households Below 60% Calories Adequacy	Percent of Households Below 80% Protein Adequacy	Percent of Households Below 80% Iron Adequacy	Percent of Households Below 80% Zinc Adequacy	Percent of Households Below 80% Thiamine Adequacy	Percent of Households Below 80% Niacin Adequacy	Percent of Households Below 80% Riboflavin Adequacy
Day ≥110°F	0.020	0.196	0.345***	0.107**	0.004	0.277**	0.232*	0.369***	0.410***	-0.082
	(0.107)	(0.184)	(0.130)	(0.050)	(0.083)	(0.138)	(0.118)	(0.111)	(0.121)	(0.118)
Day 100-110°F	-0.043	0.135	0.253***	0.091***	0.060	0.147**	0.194***	0.255***	0.281***	0.053
	(0.052)	(0.088)	(0.075)	(0.027)	(0.047)	(0.064)	(0.074)	(0.063)	(0.074)	(0.058)
Day 90-100°F	-0.058	0.133	0.235***	0.079***	0.067	0.176***	0.174***	0.274***	0.269***	0.119**
	(0.048)	(0.083)	(0.069)	(0.024)	(0.041)	(0.062)	(0.067)	(0.062)	(0.068)	(0.052)
Day 80-90°F	-0.058	0.144*	0.233***	0.067***	0.054	0.150**	0.174**	0.252***	0.250***	0.112**
	(0.048)	(0.080)	(0.068)	(0.024)	(0.041)	(0.061)	(0.068)	(0.061)	(0.068)	(0.051)
Day 70-80°F	-0.029	0.097	0.143**	0.042*	-0.004	0.073	0.076	0.153***	0.156**	0.045
	(0.046)	(0.075)	(0.063)	(0.023)	(0.037)	(0.059)	(0.061)	(0.058)	(0.062)	(0.048)
Total Rainfall	-0.191	0.397	-0.533	0.279	0.934	0.241	1.204	0.383	0.542	-0.433
	(0.562)	(0.938)	(0.784)	(0.331)	(0.637)	(0.723)	(0.827)	(0.761)	(0.821)	(0.753)
Observations	314,413	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414	314,414
Mean Outcome	765.37	51.00	20.41	3.94	11.62	54.69	21.52	35.11	22.05	51.97
District FE	X	X	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X	X	X
Month FE	X	X	X	X	X	X	X	X	X	X
Demographic controls	X	X	X	X	X	X	X	X	X	X
State time trends	X	X	X	X	X	X	X	X	X	X
Total rainfall	X	X	X	X	X	X	X	X	X	X
Last year's weather	X	X	X	X	X	X	X	X	X	X
This year's weather	X	X	X	X	X	X	X	X	X	X

This table shows the change in our main outcome variables for an additional day at a given temperature during last year's growing season relative to a day below 70°F. The outcomes in column 1 are multiplied by 100 so the coefficients can be interpreted as percentage changes. The models all include 10°F temperature bins from 70-80°F to above 110°F for this and last year's growing season (June-December) and non-growing season (March-May). We omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. Each model includes district, year and month fixed effects, demographic controls, and state time trends. In contrast to our main specification (Table 2), these models include total rainfall rather than a rainfall shock. Standard errors (shown in parentheses) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. *p<0.1 **p<0.05 ***p<0.01

Appendix Figures

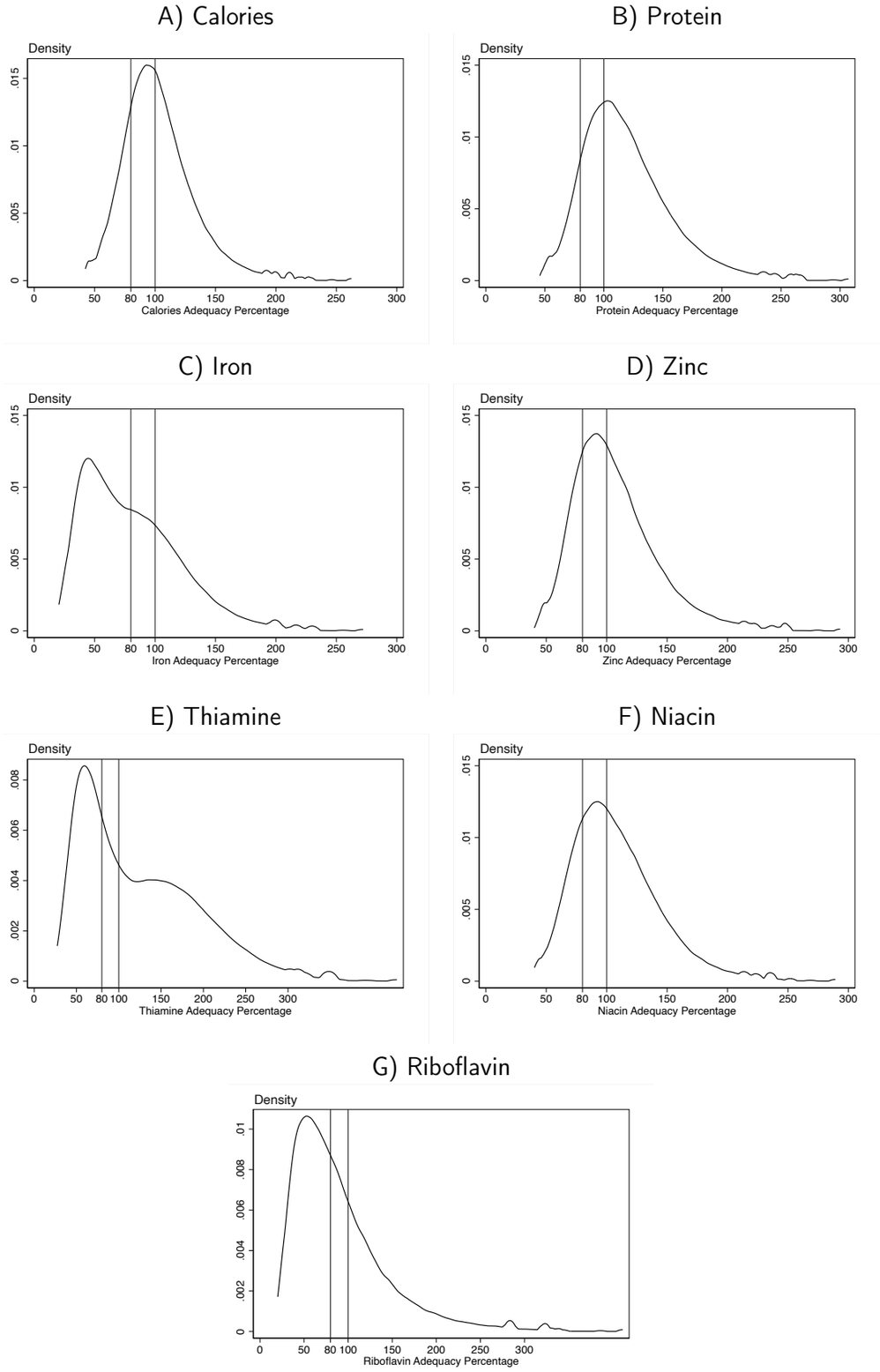

Figure A1: Adequacy Density

This figure shows the distribution of the adequacy percentage for calories and the nutrients we study. The adequacy percentage is equal to total household consumption (based on food consumption) divided by total household need (based on household composition).

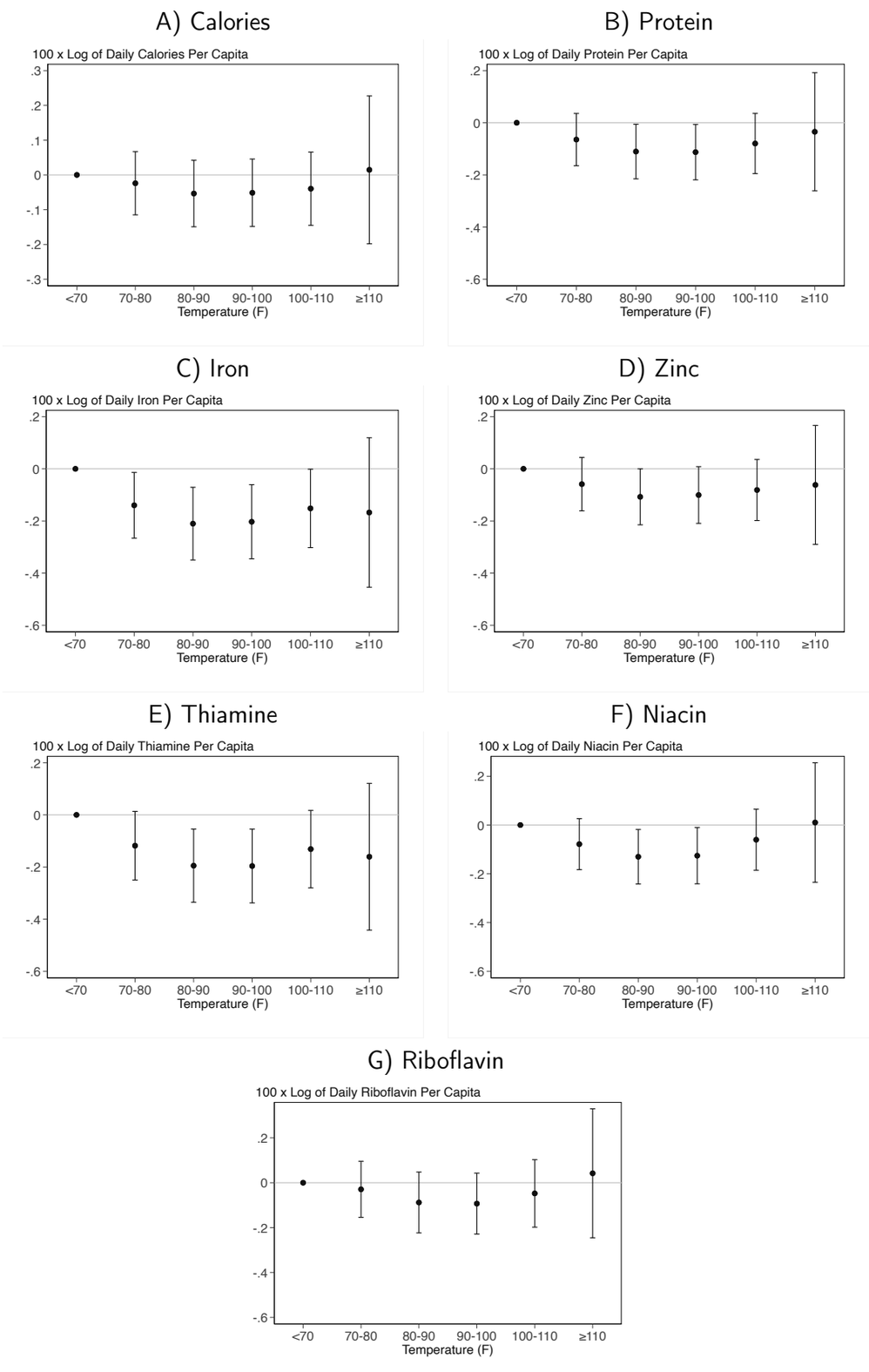

Figure A2: Last Year's Growing Season Weather and Log of Daily Consumption per Capita

Panel A shows the change in 100 times the log of per capita daily consumption of calories (winsorized at the 1 and 99 percent levels) for each additional day at a given temperature during last year's growing season relative to a day below 70°F. The coefficients can be interpreted as percentage changes. Panels B-G show the same relationship for different nutrients. We match household-year-month nutritional outcomes with weather data at the district-year-season level. All models include 10°F temperature bins from 70-80°F to above 110°F for this year and last year's growing season (June - December) and non-growing season (March - May). They omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. The models include district, month, and year fixed effects, state time trends, rainfall shocks, demographic (religion, social group, and head of household education) and household controls. Standard errors (error bars represent the 95% confidence interval) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. The models include 314,413, 314,412, 314,312, 314,312, 314,018, 314,302, and 314,307 observations.

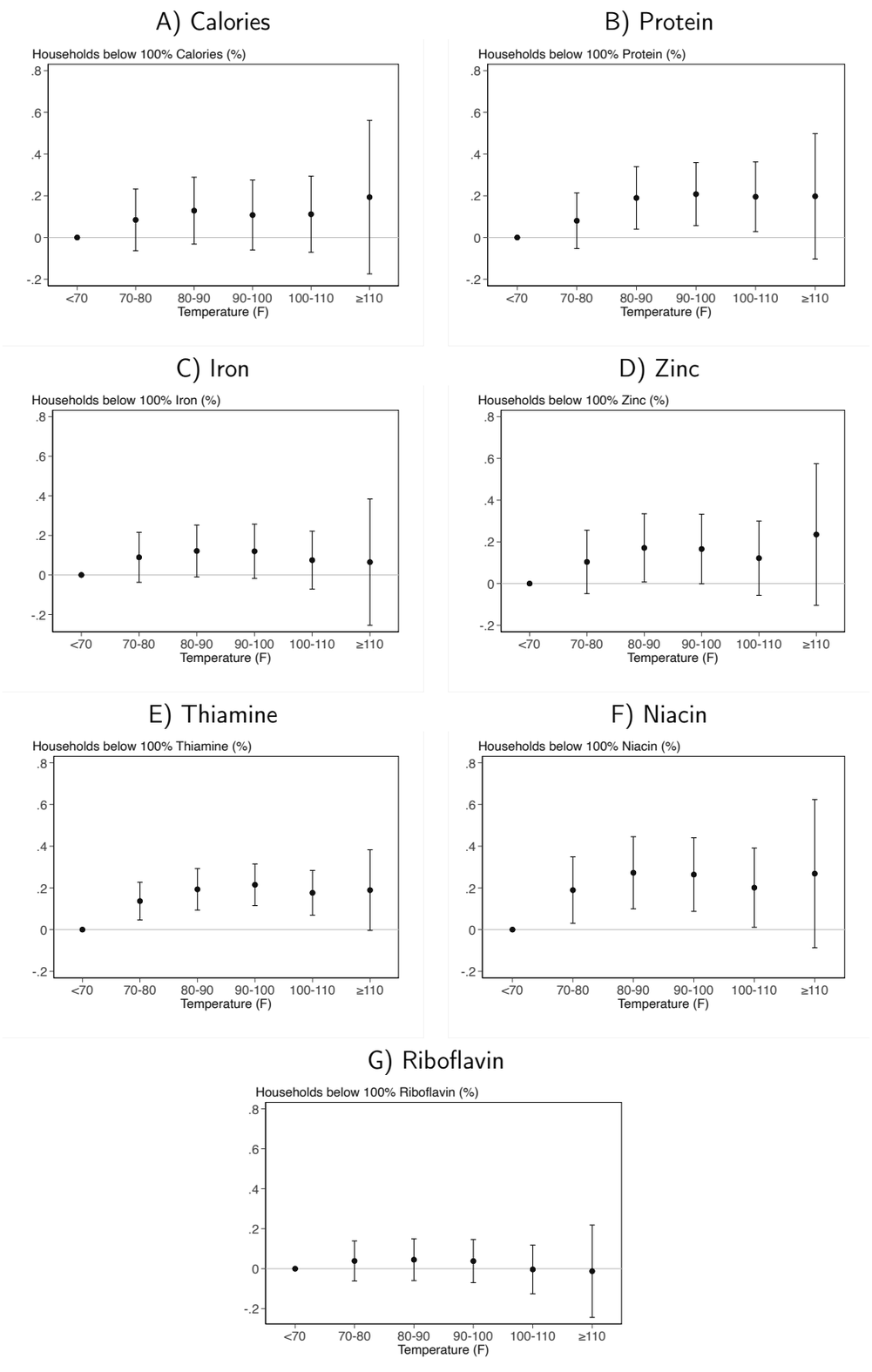

Figure A3: Last Year's Growing Season Weather and 100% Nutritional Adequacy

Panel A shows the change in the percentage of households consuming below 100 percent of the recommended level of calories, based on household composition, for each additional day at a given temperature during last year's growing season relative to a day below 70°F. Panels B-G show the same relationship for different nutrients. We match household-year-month nutritional outcomes with weather data at the district-year-season level. All models include 10°F temperature bins from 70-80°F to above 110°F for this year and last year's growing season (June - December) and non-growing season (March - May). They omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. The models include district, month, and year fixed effects, state time trends, rainfall shocks, demographic (religion, social group, and head of household education) and household size controls. Standard errors (error bars represent the 95% confidence interval) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. The models all include 314,414 observations.

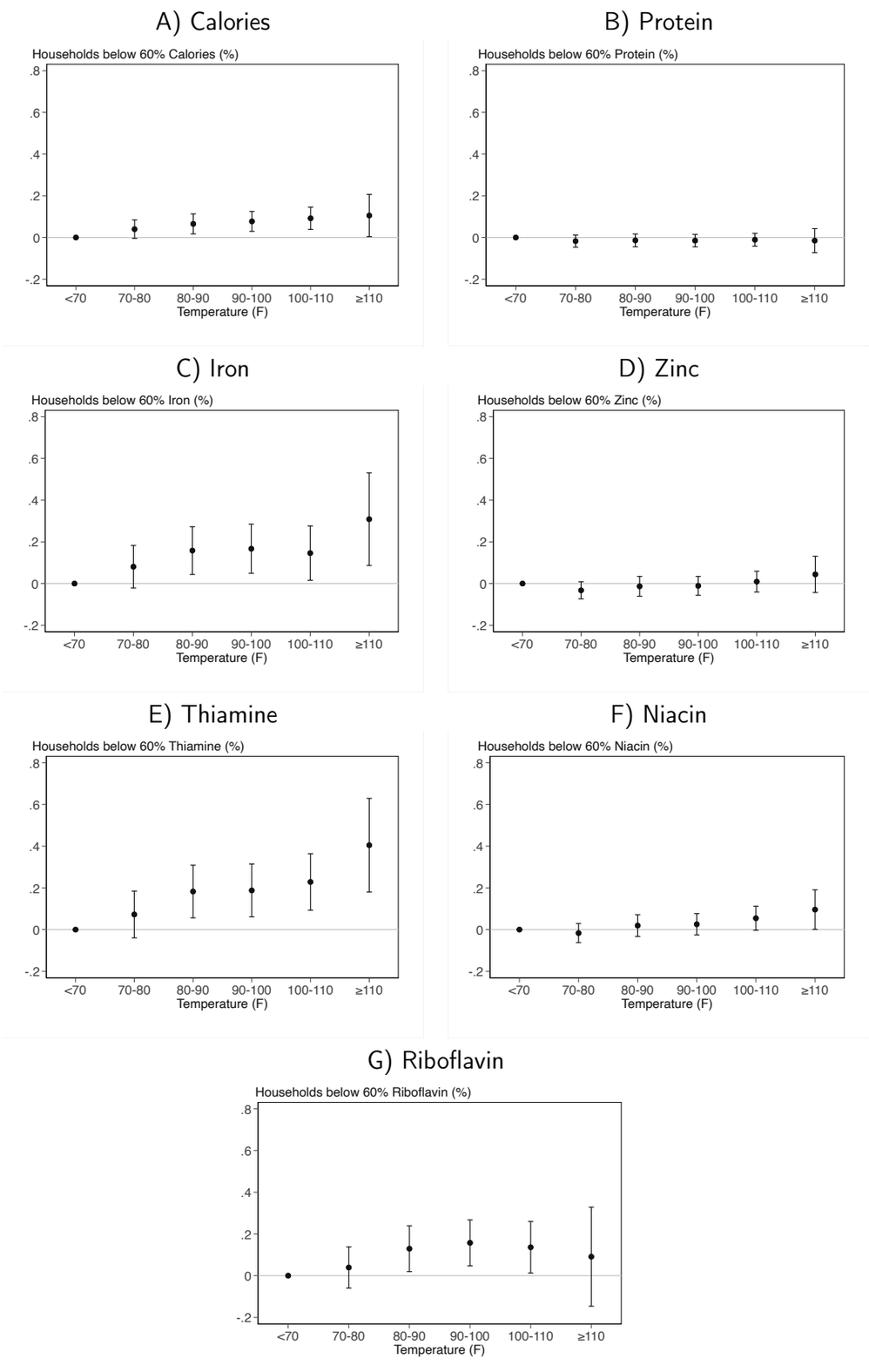

Figure A4: Last Year's Growing Season Weather and 60% Nutritional Adequacy

Panel A shows the change in the percentage of households consuming below 60 percent of the recommended level of calories, based on household composition, for each additional day at a given temperature during last year's growing season relative to a day below 70°F. Panels B-G show the same relationship for different nutrients. We match household-year-month nutritional outcomes with weather data at the district-year-season level. All models include 10°F temperature bins from 70-80°F to above 110°F for this year and last year's growing season (June - December) and non-growing season (March - May). They omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. The models include district, month, and year fixed effects, state time trends, rainfall shocks, demographic (religion, social group, and head of household education) and household size controls. Standard errors (error bars represent the 95% confidence interval) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. The models all include 314,414 observations.

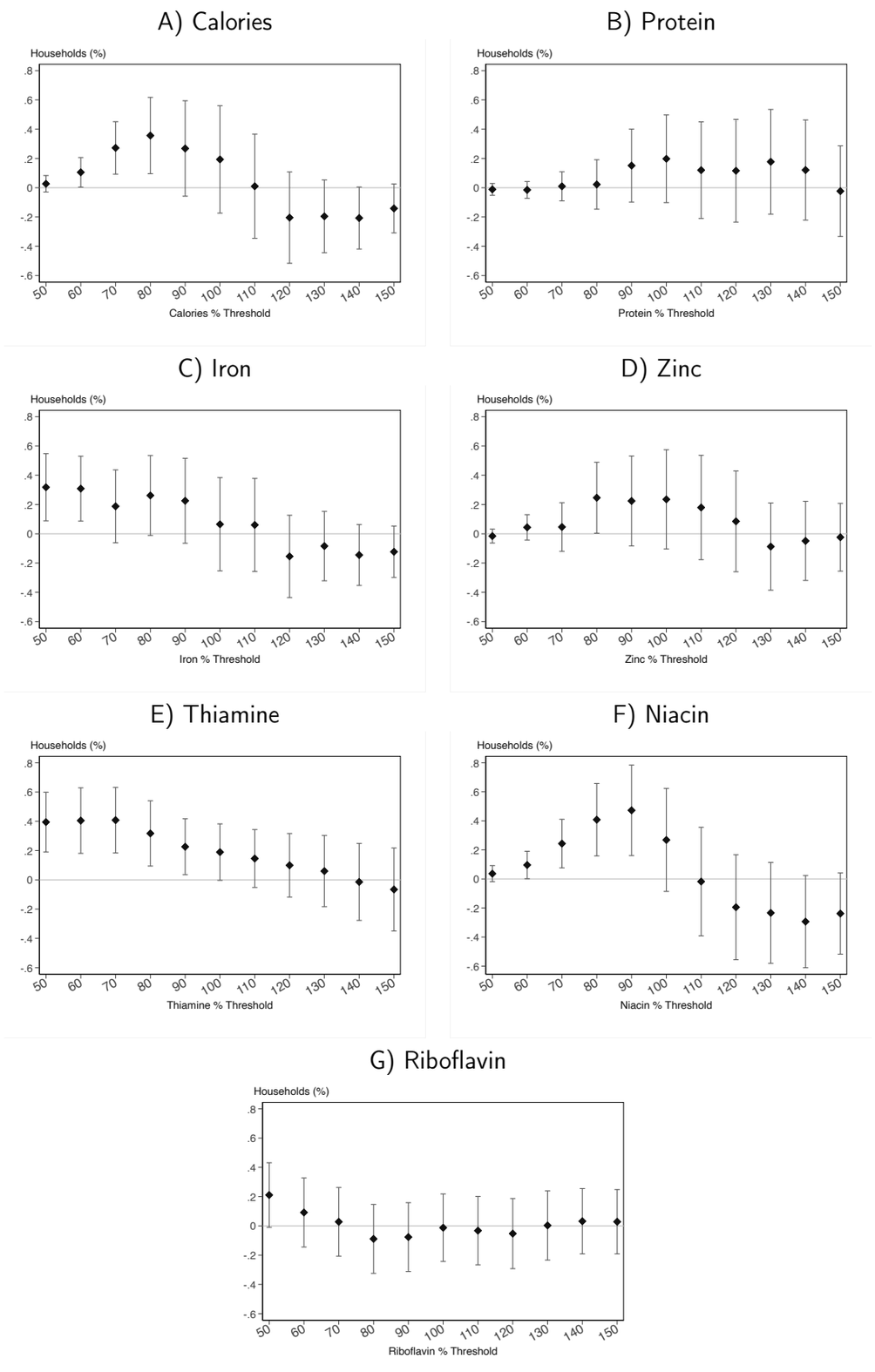

Figure A5: Below Different Adequacy Thresholds, Day $\geq 110°$F

Panel A shows the change in the percentage of households below different calorie consumption thresholds, between 50 percent and 150 percent, for each additional day above 110°F during the previous growing season relative to a day below 70°F. Panels B-G show the same relationship for different nutrients and minerals. We match household-year-month nutritional outcomes with weather data at the district-year-season level. All models include 10°F temperature bins from 70-80°F to above 110°F for this year and last year's growing season (June - December) and non-growing season (March - May). They omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. The models include district, month, and year fixed effects, state time trends, rainfall shocks, demographic (religion, social group, and head of household education) and household controls. Standard errors (error bars represent the 95% confidence interval) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. All models include 314,414 observations.

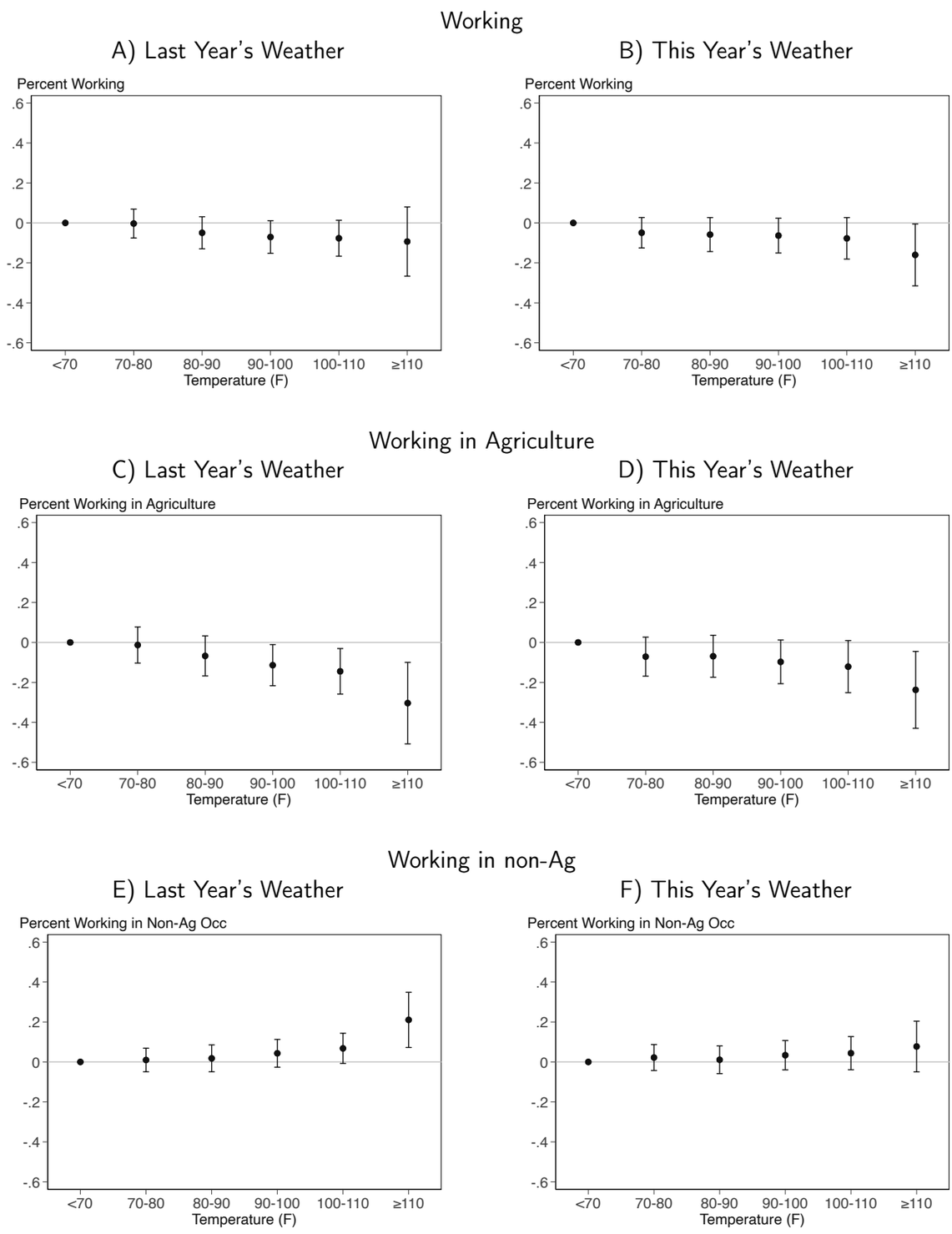

Figure A6: Growing Season Weather and Working-Age (14-65) Work Status

Panel A shows the change in the percent of working-age individuals (14-65) working in any sector for each additional day at a given temperature during last year's growing season relative to a day below 70°F. Panel B shows the same relationship for this year's growing season weather. Panels C and D are the same as Panels A and B, respectively, but for working-age individuals working in agriculture. Panels E and F are the same as Panels A and B, respectively, but for working-age individuals working in non-agricultural sectors. All models include 10°F temperature bins from 70-80°F to above 110°F for this year and last year's growing season (June - December) and non-growing season (March - May). They omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. The models include district, month, and year fixed effects, state time trends, rainfall shocks, individual demographic controls (religion, social group, age, sex and education level). Standard errors (error bars represent the 95% confidence interval) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include individual-level outcomes from 2004-2012. The models all include 1,134,910 observations.

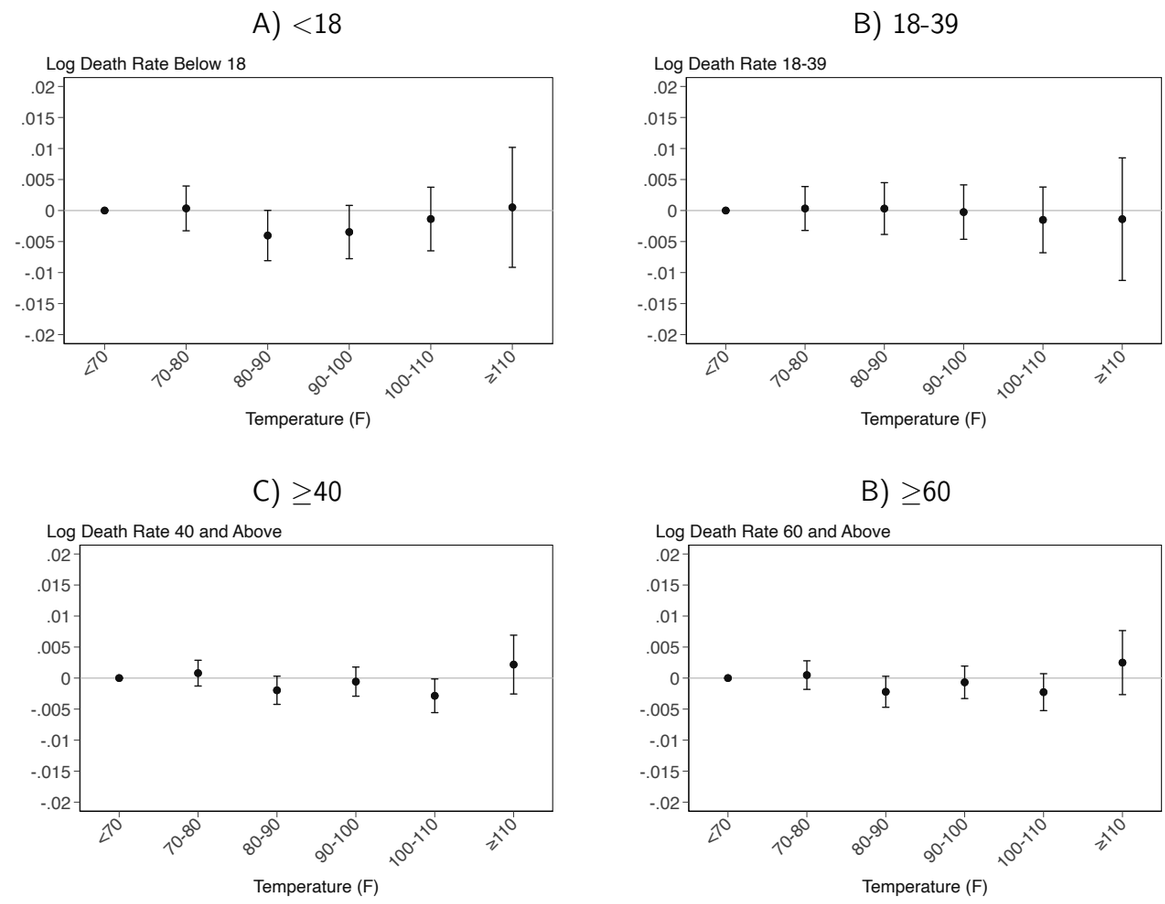

Figure A7: Last Year's Full Year Weather and Mortality

Panel A shows the change in the log mortality rate (deaths per 1000 people) for children (below 18) for each additional day at a given temperature last year relative to a day below 70°F. Panels B, C, and D show the same relationship as panel A, but for the 18-39, 40 and above, and 60 and above mortality rates, respectively. Each outcome is winsorized at the 1 and 99 percent levels. We pair district-year-level mortality rates from 2012 to 2019 with district-year level weather. All models include 10°F temperature bins from 70-80°F to above 110°F for this year and last year. They omit the <70°F bins so the coefficients can be interpreted relative to this temperature range. The models include year and district fixed effects and a state-year trend. Standard errors (error bars represent the 95% confidence interval) are clustered at the district level to account for any inter-district correlation of the error terms. Panel A includes 3,407 observations, panel B includes 3,187, panel C includes 3,695, and panel D includes 3,689.

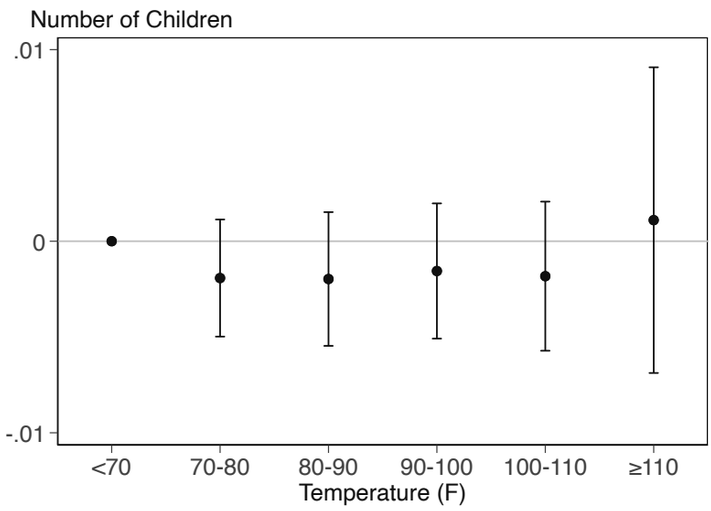

Figure A8: Last Year's Growing Season Weather and Number of Children

Panel A shows the change in 100 times the number of children (winsorized at the 1 and 99 percent levels) for each additional day at a given temperature during last year's growing season relative to a day below 70°F. We match household-year-month data with weather data at the district-year-season level. The model includes 10°F temperature bins from 70-80°F to above 110°F for this year and last year's growing season (June - December) and non-growing season (March - May). It omits the <70°F bins so the coefficients can be interpreted relative to this temperature range. The model includes district, month, and year fixed effects, rainfall shocks, and demographic controls (religion, social group, and head of household education). Standard errors (error bars represent the 95% confidence interval) are clustered at the district level to account for any inter-district correlation of the error terms. All regressions include household-level outcomes from 2003-2012. The model includes 314,414 observations.