

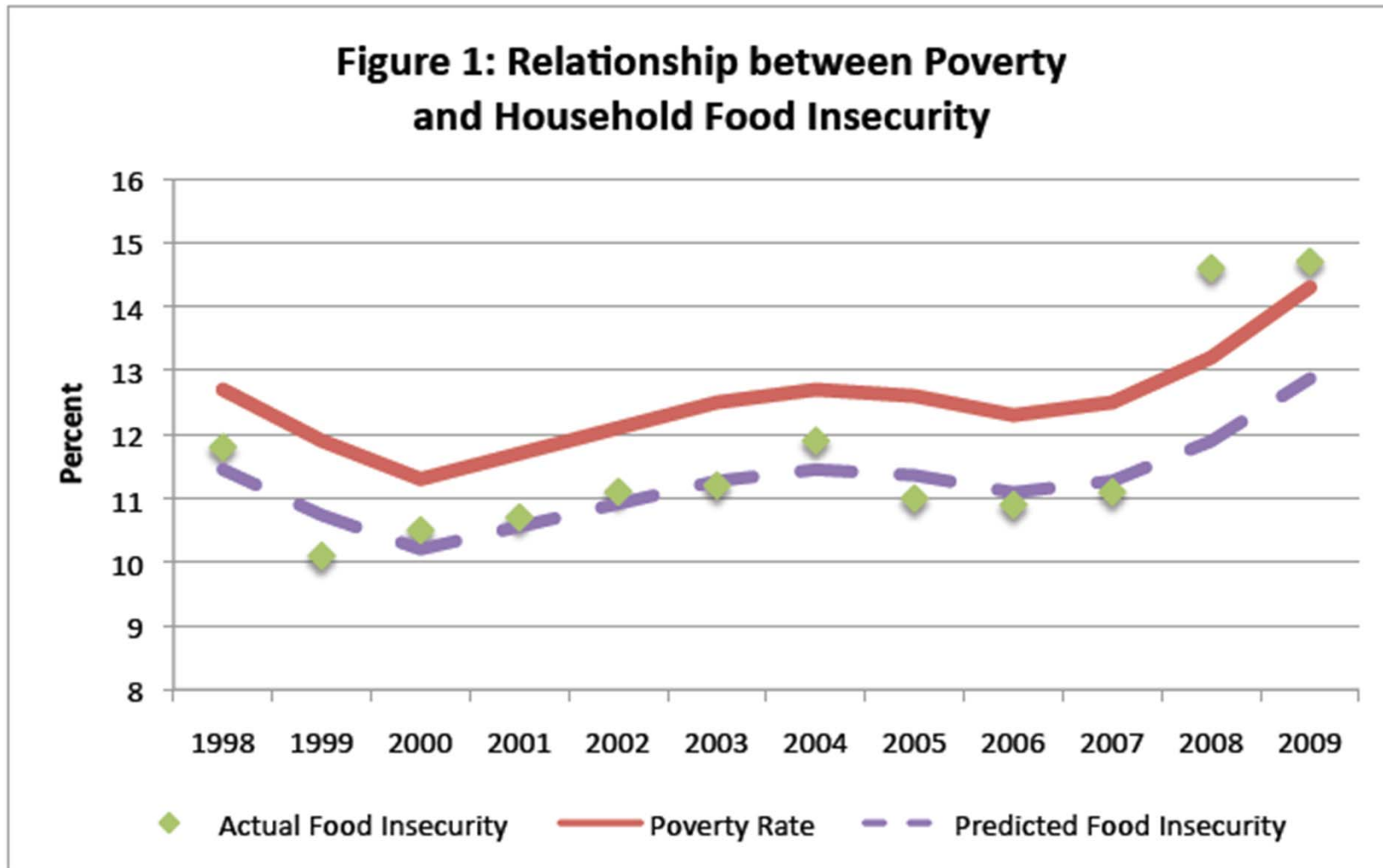
Understanding Food Security Over the Great Recession

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What is Food Insecurity (FI)?

- Battery of 10 (childless) or 18 (w/children) questions asked of CPS households
- Food Insecure if affirmative for 3+ questions
 - Need to be more than just worried about food
- Likely related to something more commonly understood, such as hunger, but not the same
 - FI may not answer yes to questions about hunger
 - Measures ability to achieve nutritional aspirations

Motivation for Focus on GR



Noticeable Jump in FI during GR

- FI hovers around 11% for first decade of 2000s
- FI jumps to almost 15% in 2008, remains there
- Historically, FI was below the poverty rate, but well-predicted over time by the poverty rate
- In 2008, FI jumped above the poverty rate
- We explore what changed with the FI over GR

Does the GR Stand Out Statistically?

- We took the CPS FI supplement data and regressed FI dummy on US poverty rate
 - Give the aggregate series the “first crack” at explaining the variation in FI over time
- Then regressed residuals on GR dummy
 - The dummy is significantly different from zero
- Some aggregates can remove GR effect
 - US unemployment rate; US SNAP receipt rate

Outline for Today

- Exploration of Simple Statistical Explanations
 - First, make sure that GR stands out statistically
 - Check that after removing poverty rate, GR is significant
 - Next, dismiss any concerns that GR automatically increased FI by increasing the numbers of HH not screened out (and hence assumed food secure)
 - Check for a discontinuity in FI at the screening level of 185% of poverty
 - Concern that increase in FI measure only due to increases in least problematic issues, due to increasing worries given state of the economy
 - Investigate the role of the GR for each of the 18 components

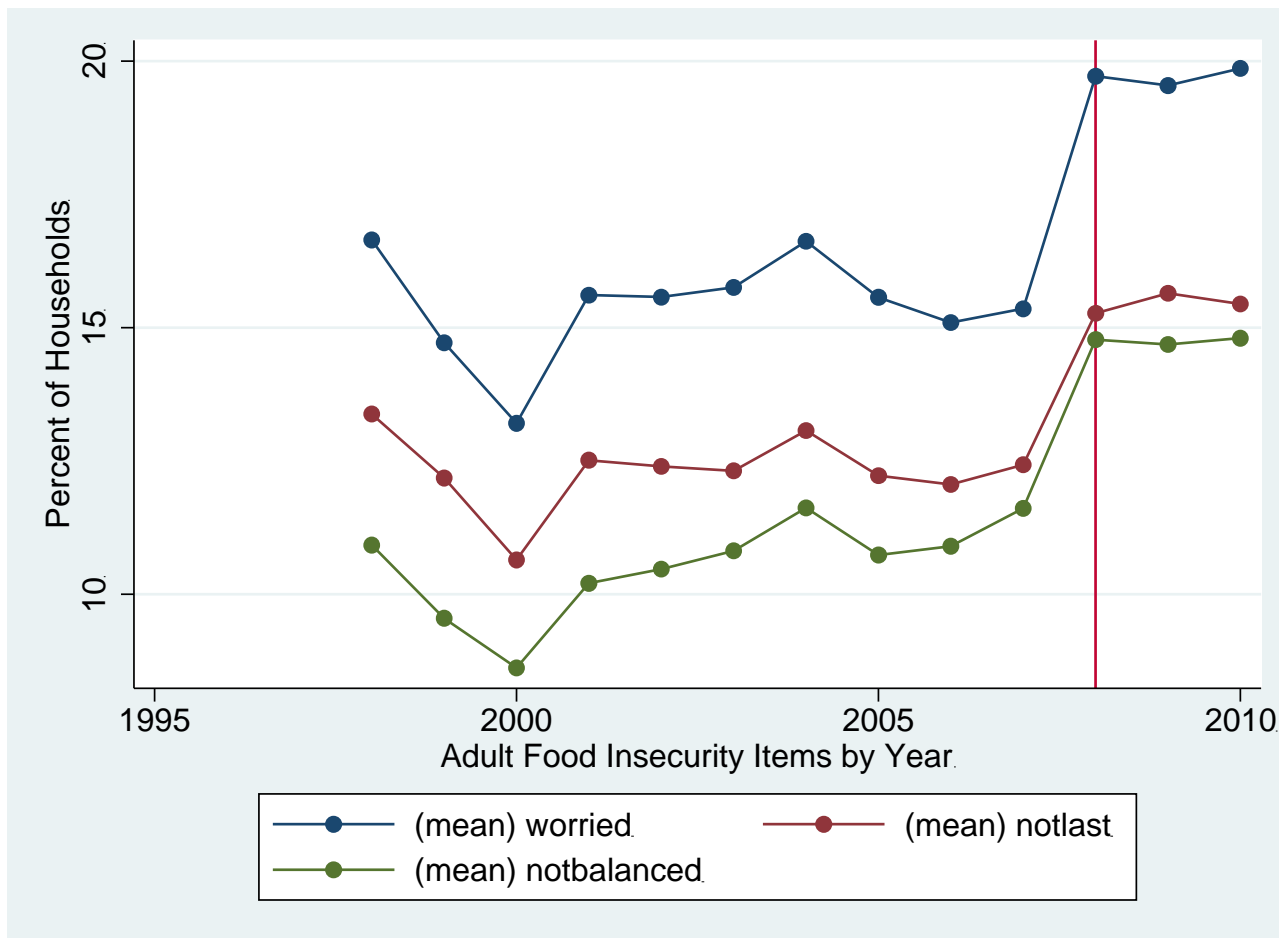
Outline for Today (continued)

- GR changes do not seem purely statistical
- Investigate potential behavioral changes
- Explore changes in the FI over the GR
 - Describe changes in demographics
 - Describe changes in program participation
 - Describe changes in nutrition
 - Describe changes in time use
- Explore whether changes in characteristics over the GR can explain the changes in FI over the GR
 - Simple Oaxaca Decomposition

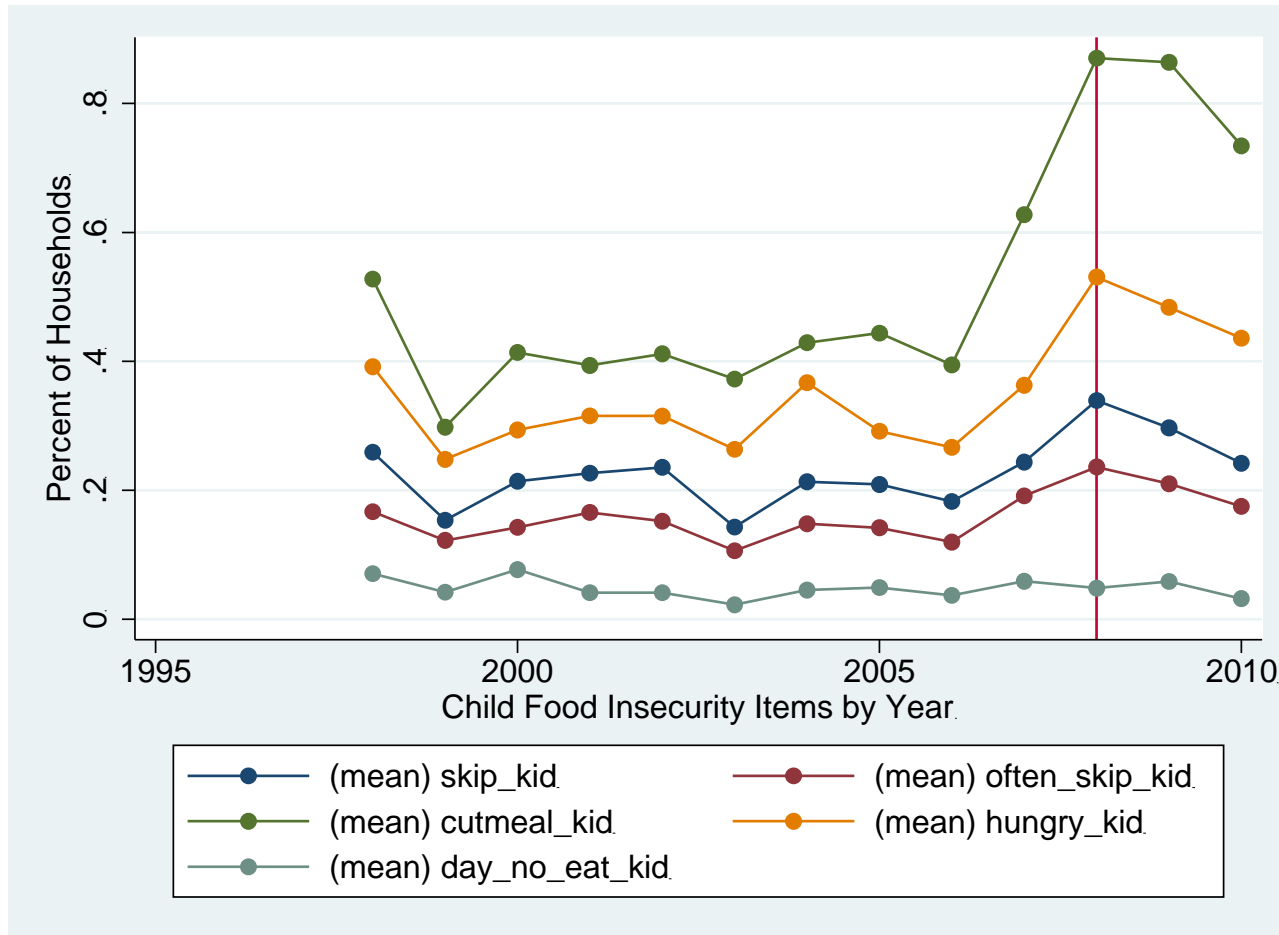
Is This GR Effect A Statistical Artifact?

- Given ability of US unemployment rate to remove GR effect (but not within-HH labor force status) concerned mainly increases in minor components of the FI index
- Increase in affirmative answers are larger for the more common problems (worried about running out of food, imbalanced meals, etc.) but also see some increases in serious problems (ate less, kids ate less, etc.)

Increases in Less Serious Problems



Increases in More Serious Problems



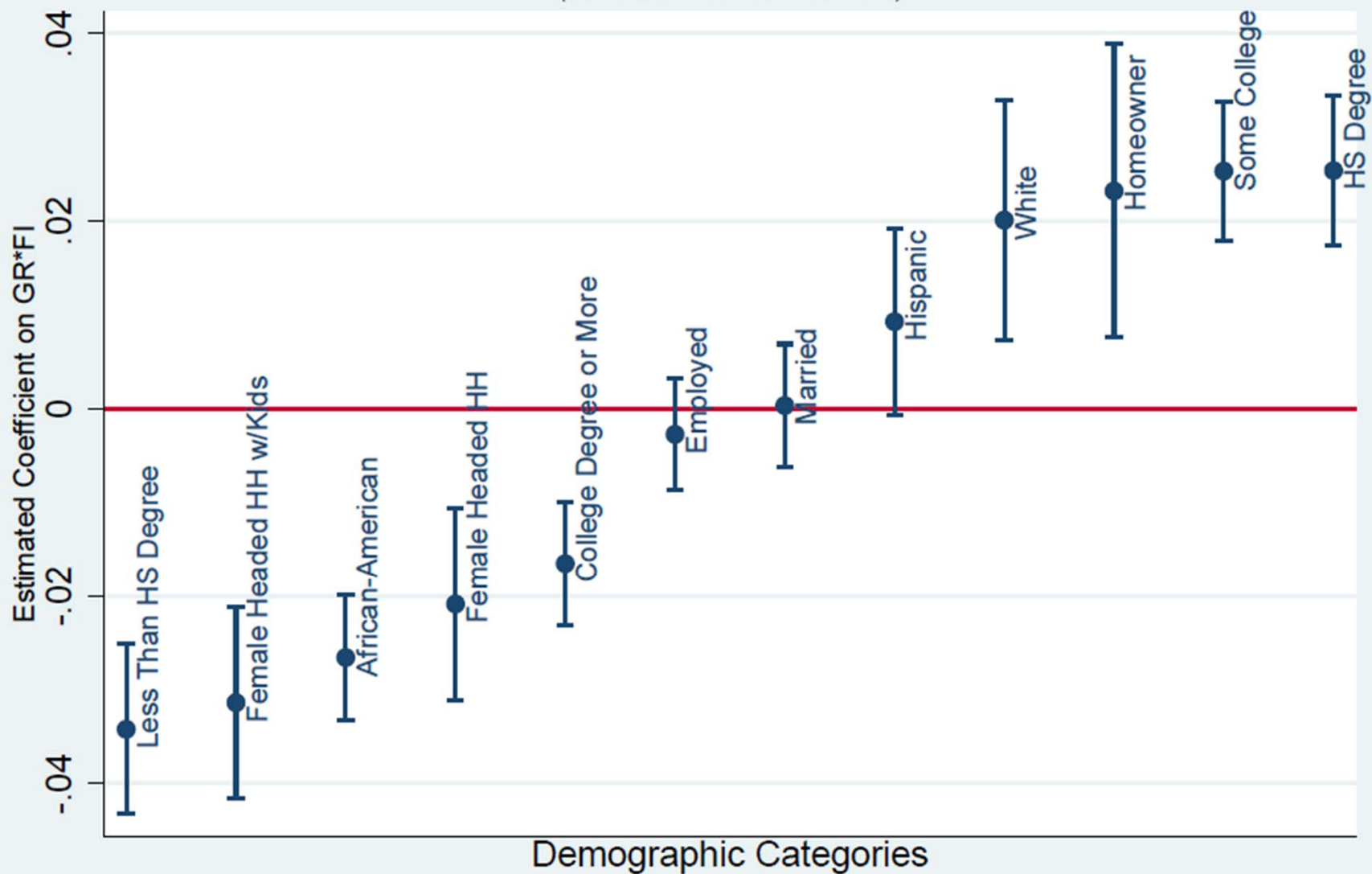
Exploring Changes Over the GR

- Starting in 2001, the FI supplement is always part of the December CPS
- Households in their first month in sample in December, or just rejoining after 8 months off will still be in sample the following March
- For these two rotation groups, we match the March and December data at the HH level
 - Matched data has FI status, income and program participation, for the same calendar year

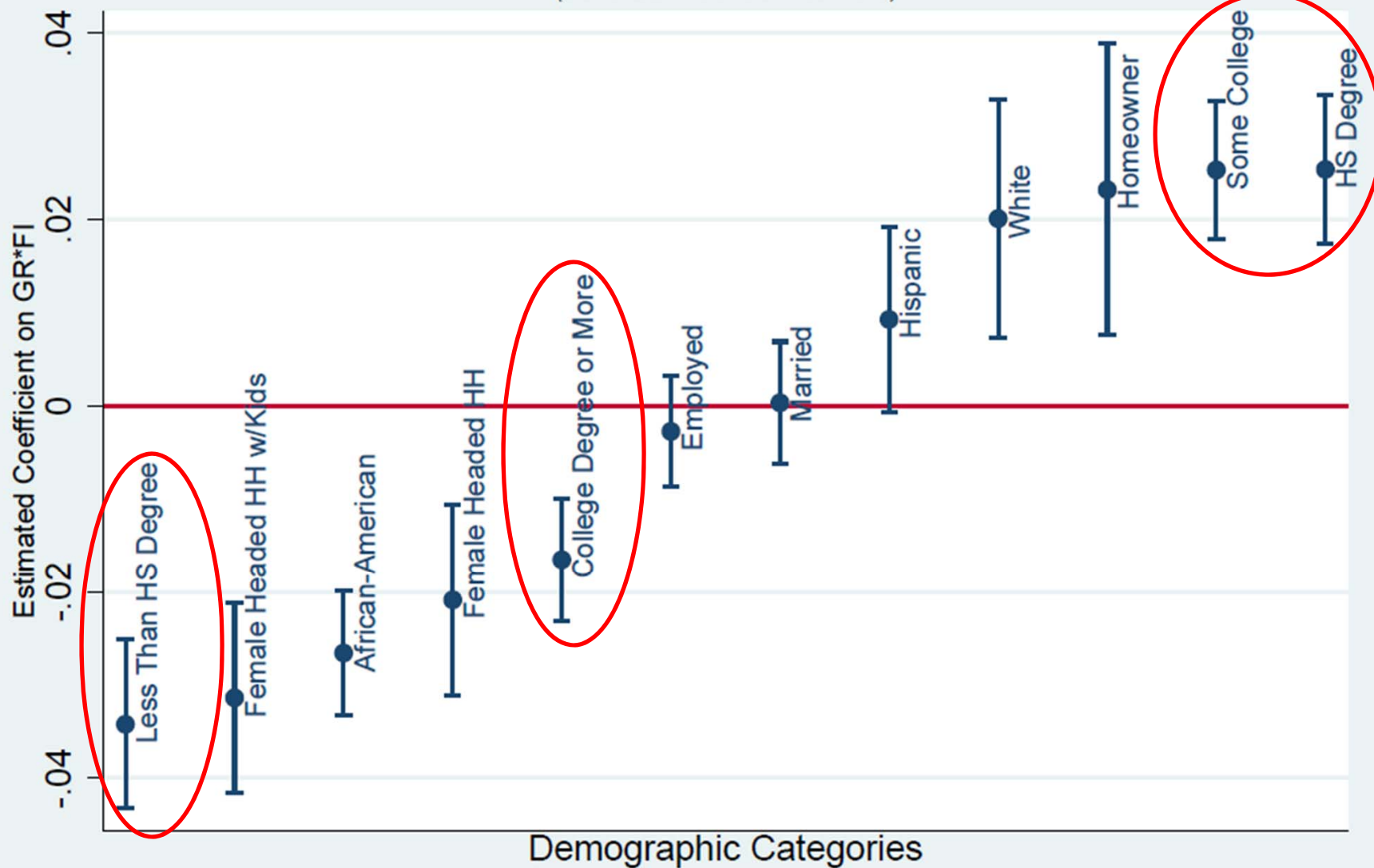
Exploring Changes Over the GR (cont.)

- Using the matched data, we estimate a series of descriptive models of the form
- $Y = \beta_0 + \beta_1 FI + \beta_2 GR + \beta_3 FI * GR + \varepsilon$
 - Where FI is a dummy for Food Insecure
 - Where GR is a dummy for years 2008 and beyond
 - Where Y includes demographic variables and income support program participation dummies
- In what follows, we present the β_3 estimates

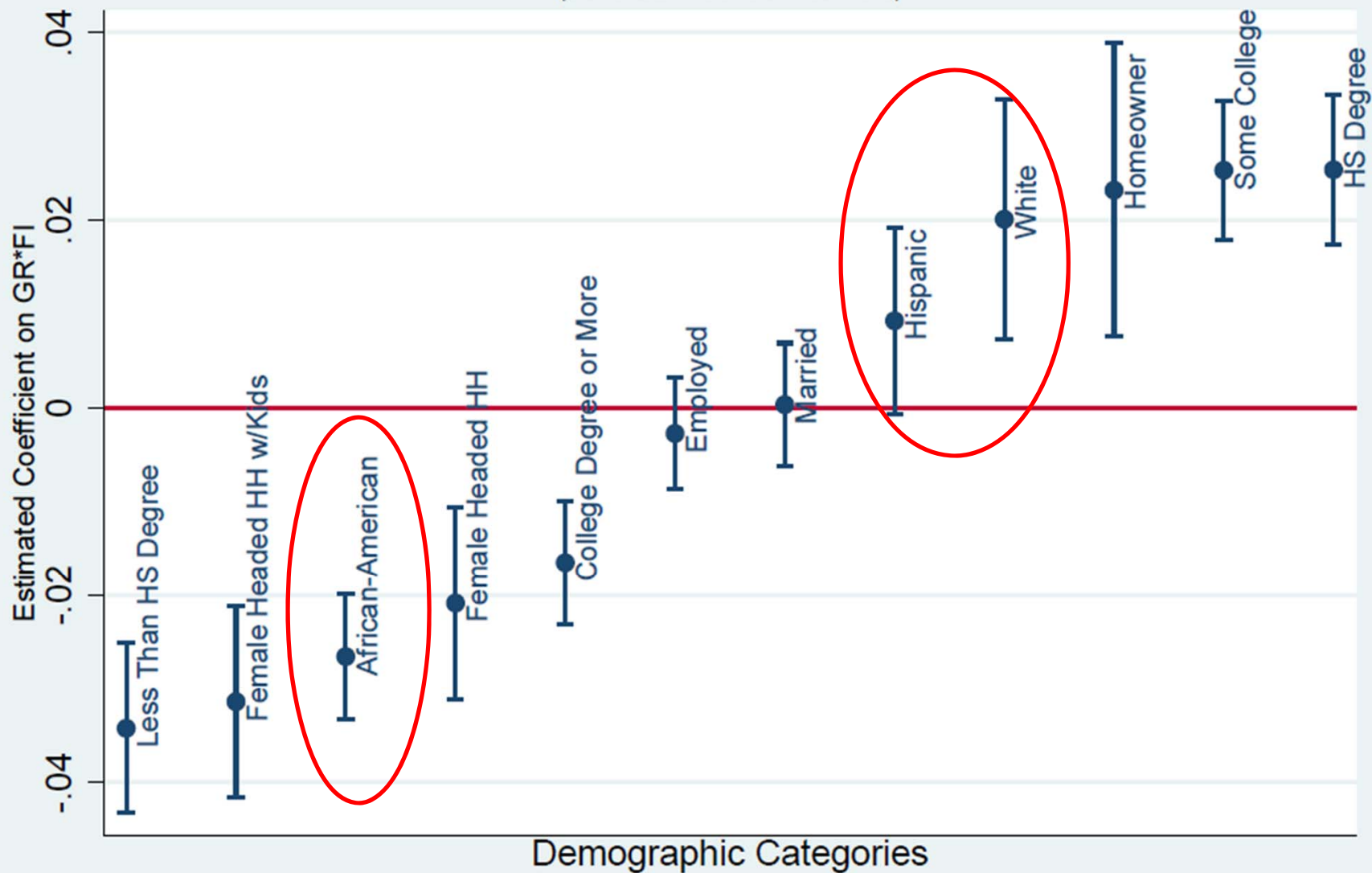
Demographic Changes of the Food Insecure During the Great Recession (95% Confidence Intervals)



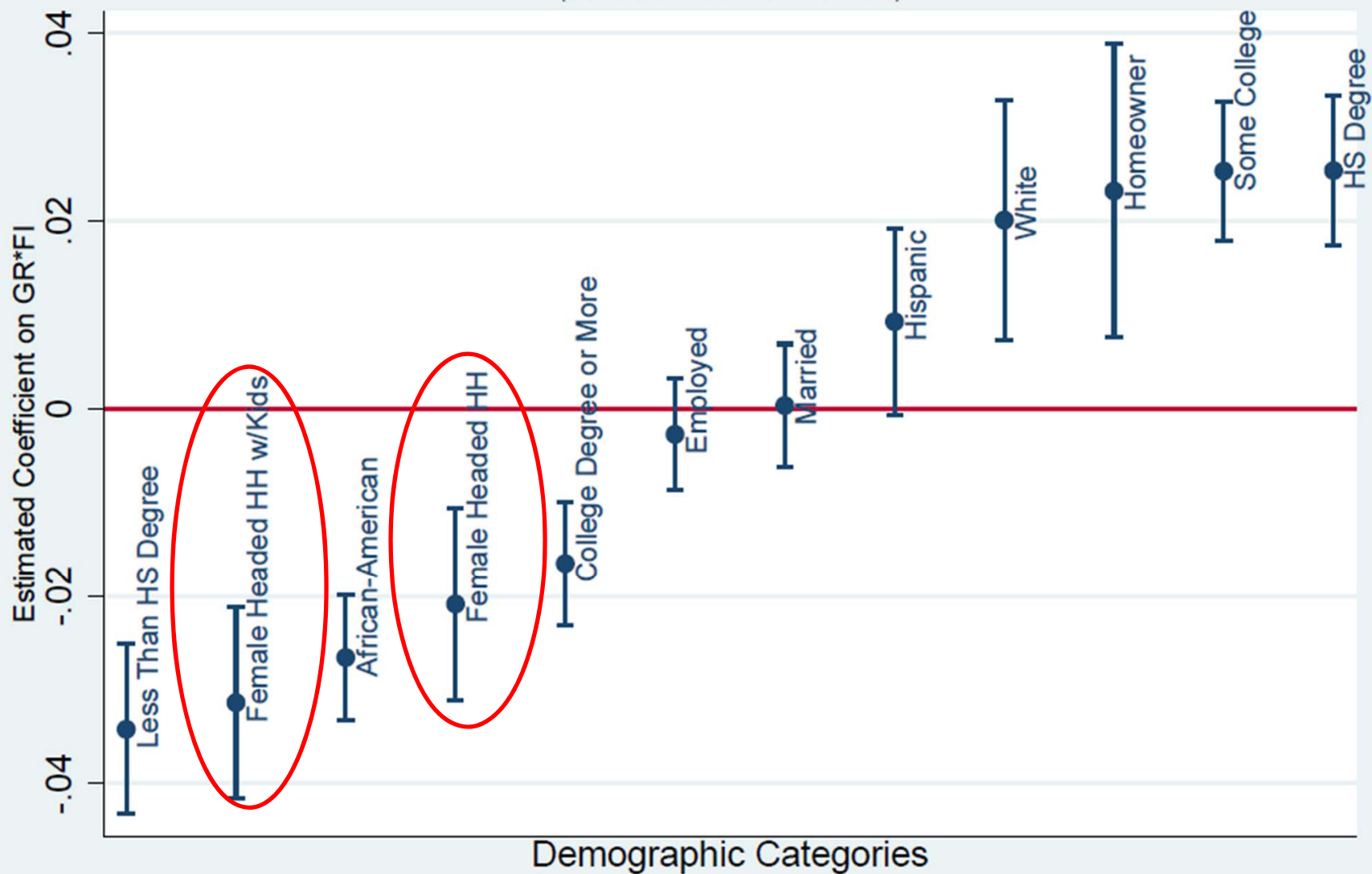
Demographic Changes of the Food Insecure During the Great Recession (95% Confidence Intervals)



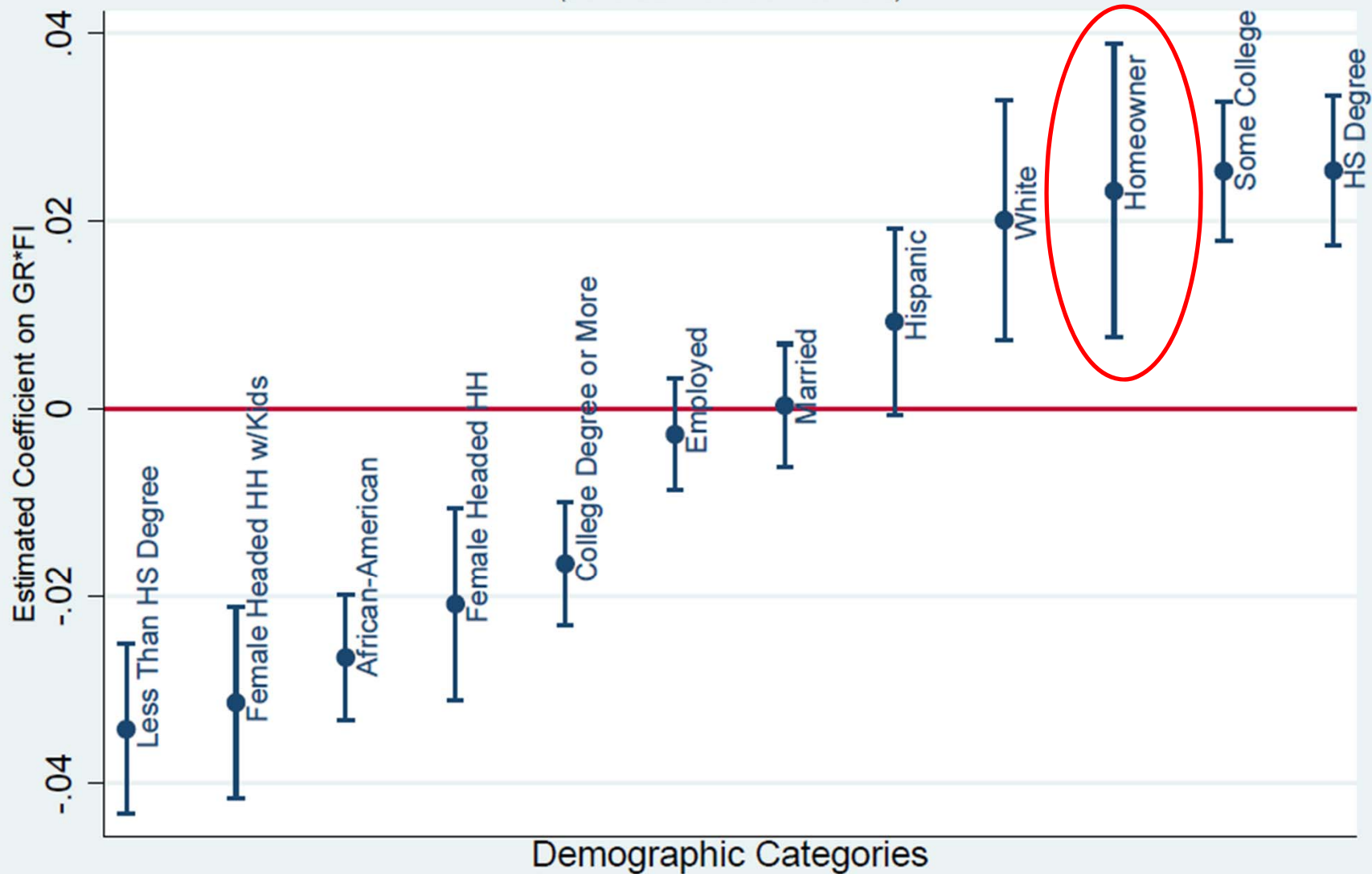
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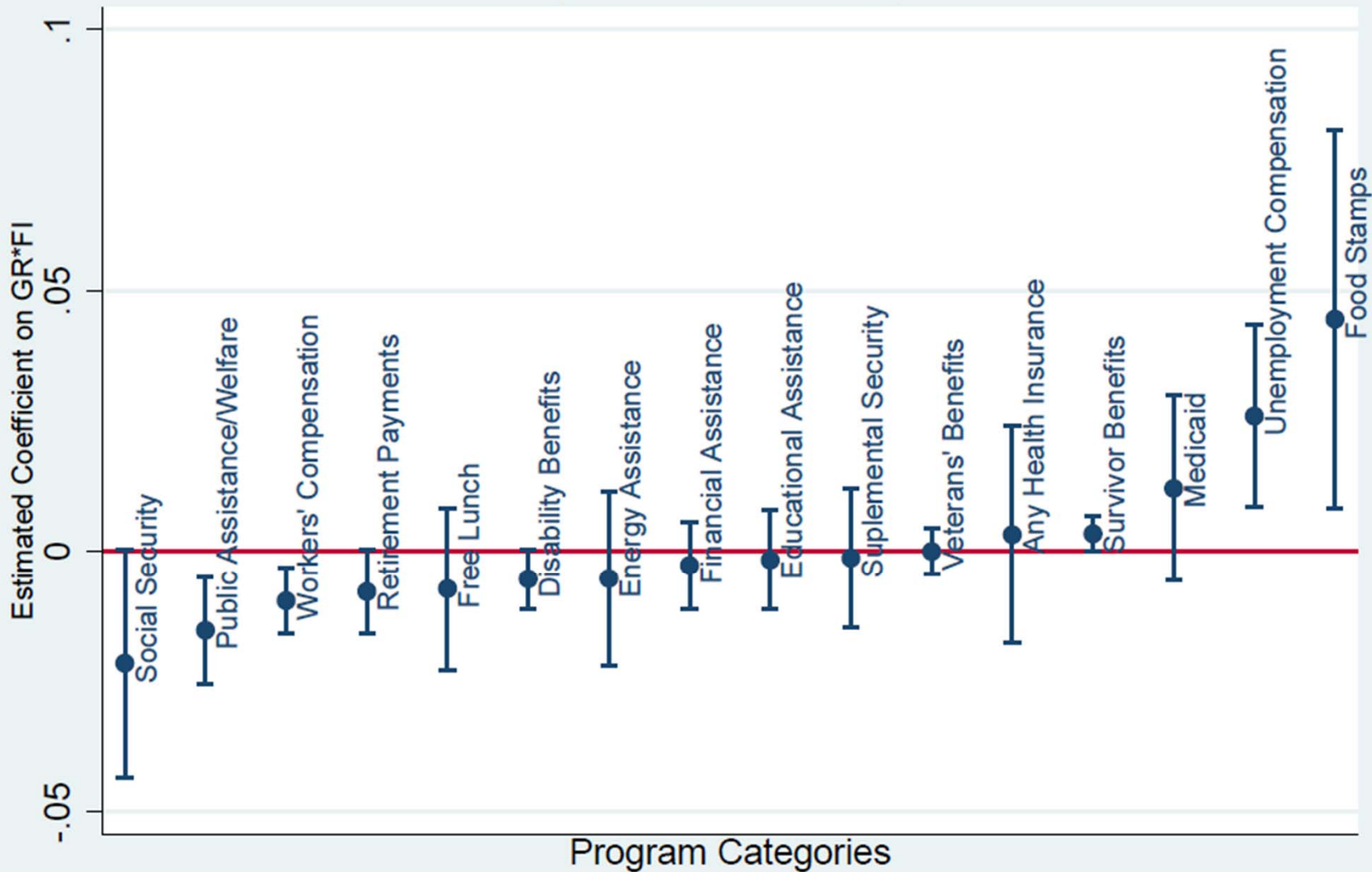
Demographic Changes of the Food Insecure During the Great Recession (95% Confidence Intervals)



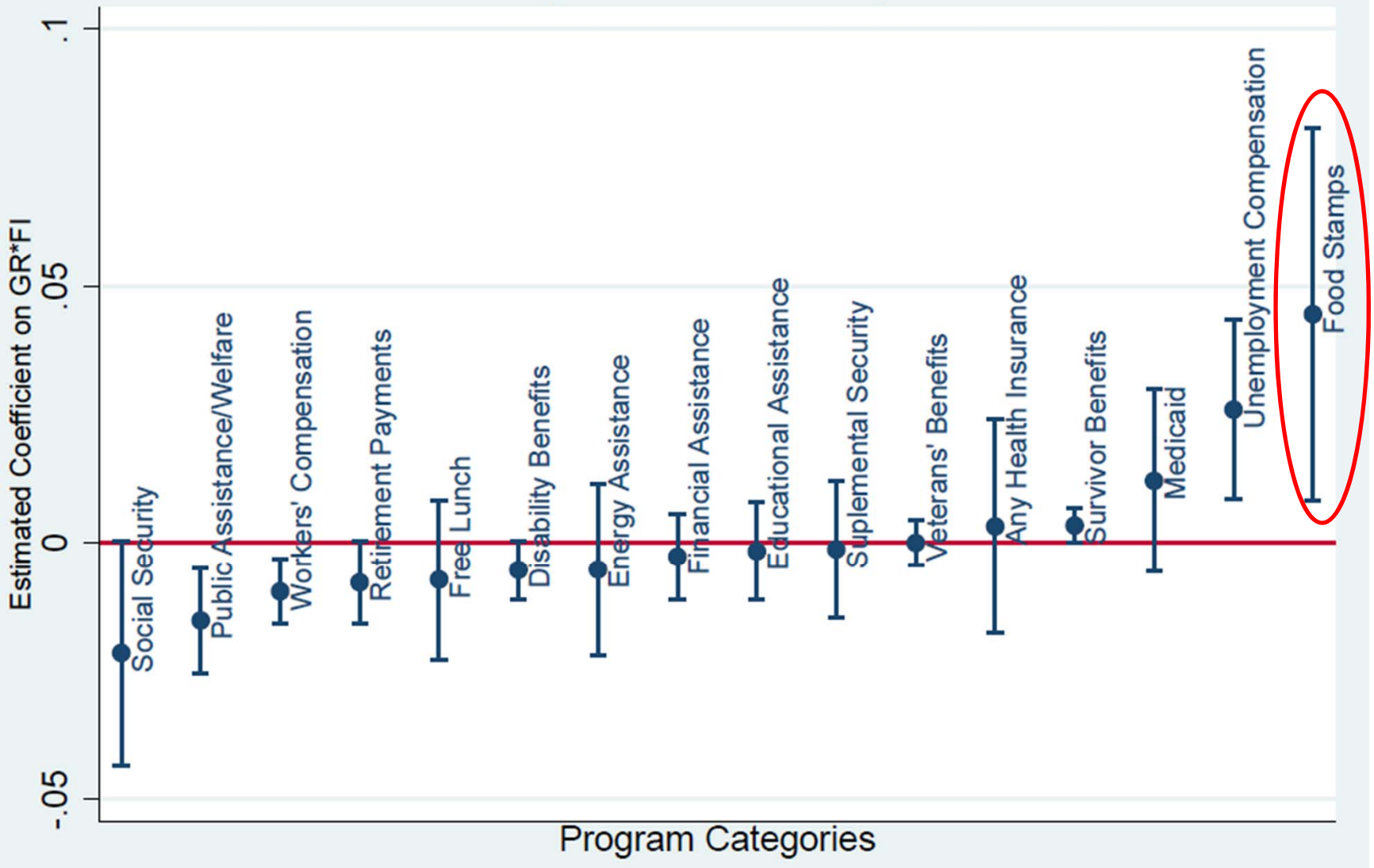
Demographic Changes of the Food Insecure During the Great Recession (95% Confidence Intervals)



Participation Changes for the Food Insecure During the Great Recession (95% Confidence Intervals)



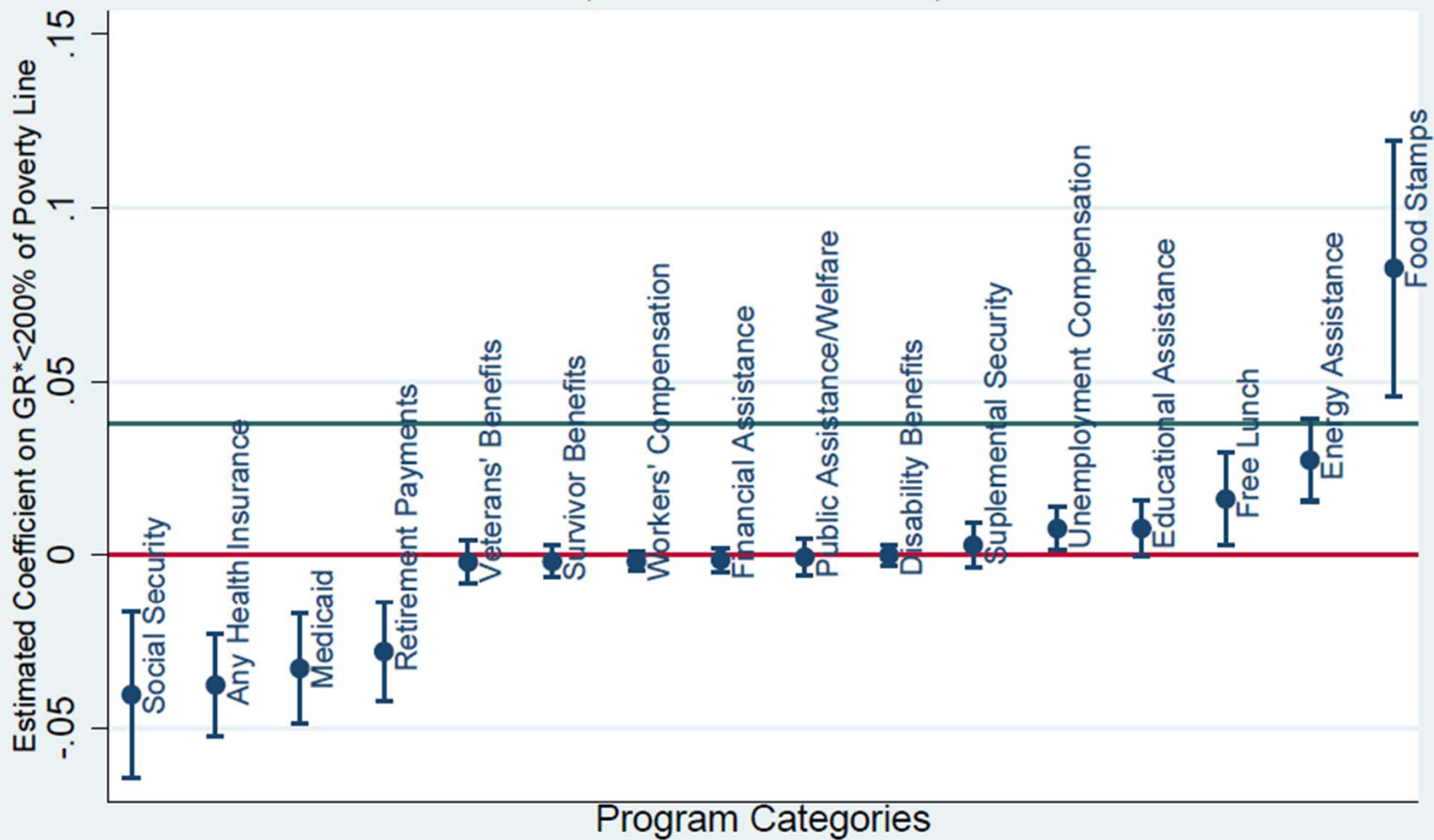
Participation Changes for the Food Insecure During the Great Recession (95% Confidence Intervals)



Further Investigations

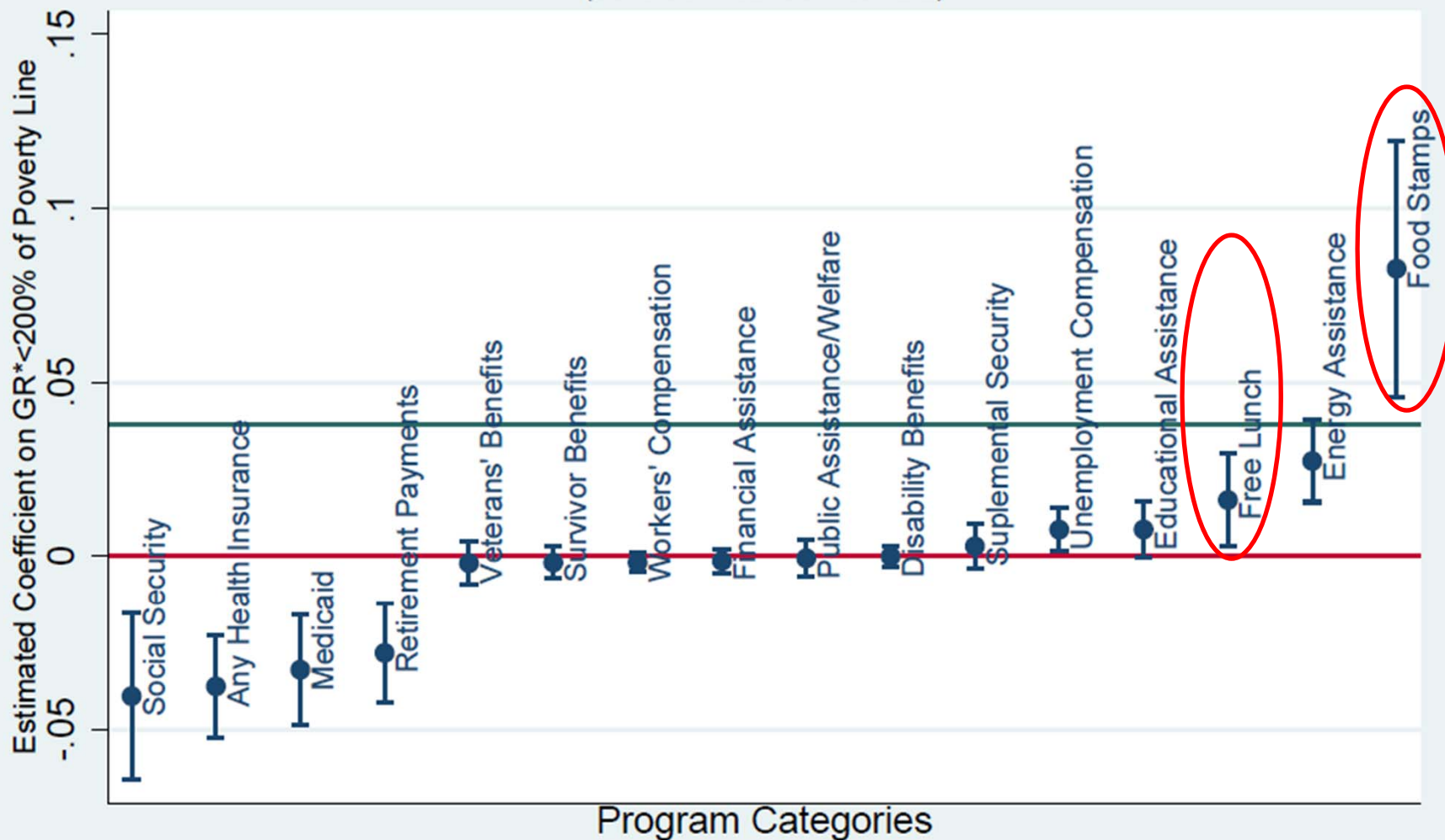
- Demographically, over the Great Recession the Food Insecure appear to have become more likely to be white, more educated, and to own their own home
 - Note only the FI supplement data was used for the demographic regressions. Matched data results are quite similar but less precise, and show no impact on income being below poverty line
- At the same time, there was very little change in program participation, other than increases in food stamp (SNAP) and UI participation
- Question of whether program participation outcomes are just a reflection of low incomes

Impact of Being <200% of Poverty Line on Participation During the Great Recession (95% Confidence Intervals)



Green line represents point estimate of impact of being <200% of Poverty line on probability of being food insecure

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Food Insecurity and Income

- The overall pattern of changes in program participation for those at <200% of the poverty line are fairly similar to that of the FI
 - Poor less likely to get SS, retirement income or health insurance
 - Poor more likely to get Food Stamps, free lunch, energy assistance
- Increase in Food Stamp receipt over GR is smaller for the FI than for those at <200% of poverty line
- Impact of being at <200% of poverty line on probability of being FI over the GR is larger than the impact on program participation for all but Food Stamp receipt

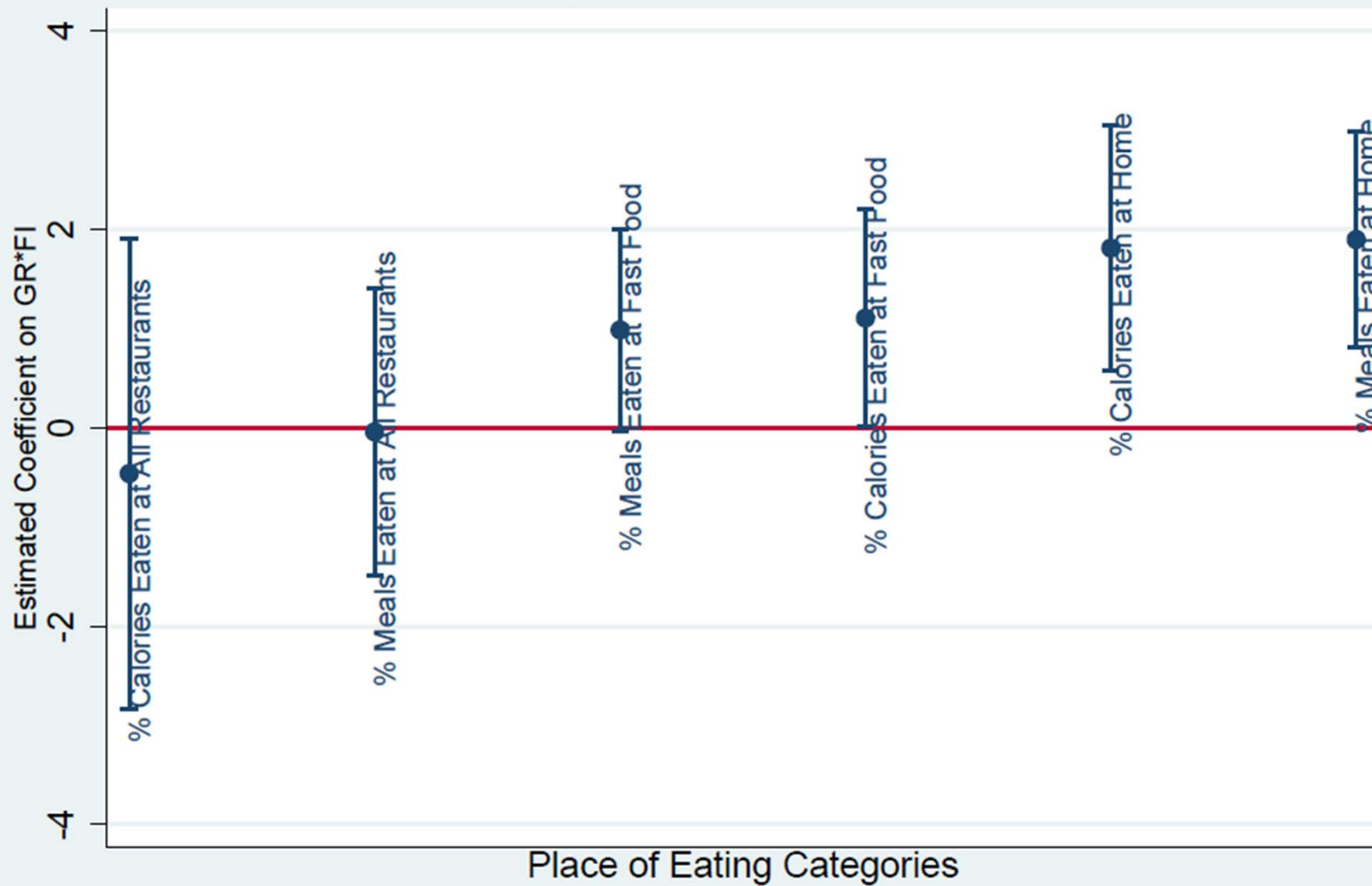
What Changes Over GR Can Explain the Change in FI Over GR?

- We used the matched December – March CPS data to estimate some simple Oaxaca decompositions, using 2008-2011 for GR observations and 2003-2006 for pre-GR
- Focusing on less well-off HHs (<300% poverty) less than 1/3 of overall change in FI is explained by changes in means
 - Main contributors are the increase in weeks looking for work, decrease in home ownership, and increase in food stamp participation

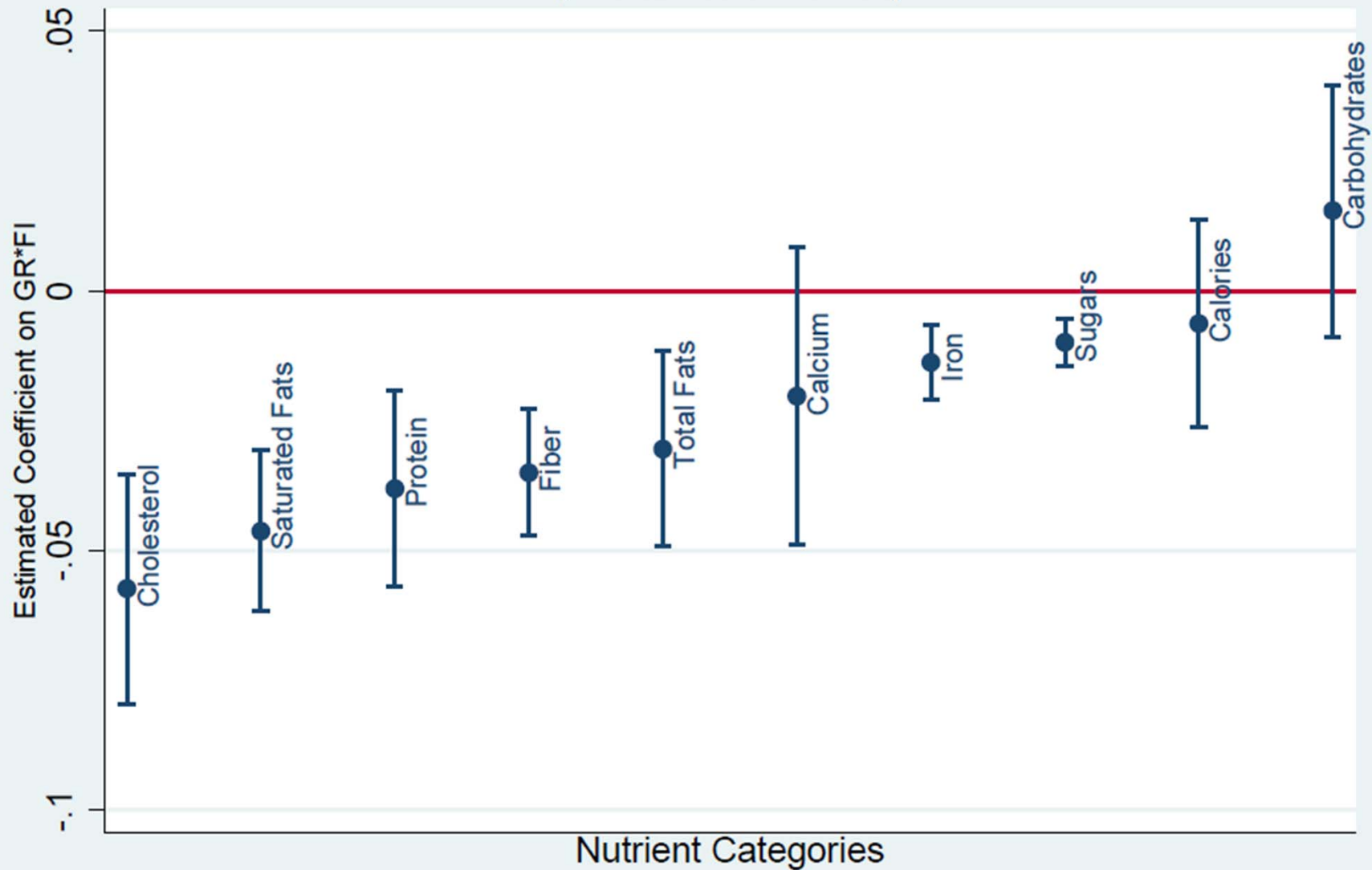
Nutrition Impacts of the GR on the FI

- The National Health and Nutrition Examination Survey (NHANES) includes the battery of questions on food security
- NHANES is in the field for two-year periods
- We use 1999-2000 through 2009-2010
- NHANES also includes food diary data on all foods eaten, providing food names, nutrients and the place eaten

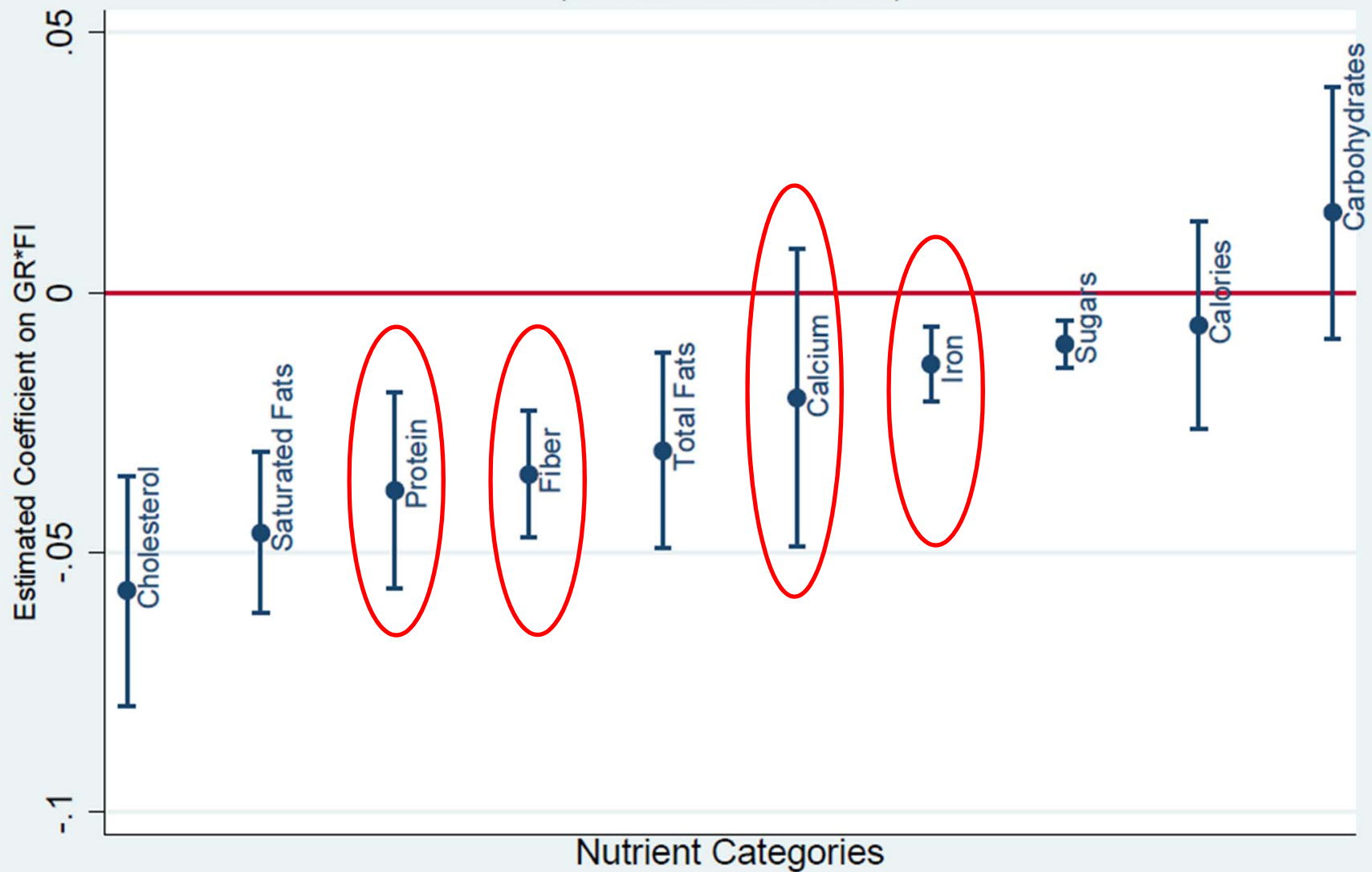
Place of Eating Changes for the Food Insecure During the Great Recession (95% Confidence Intervals)



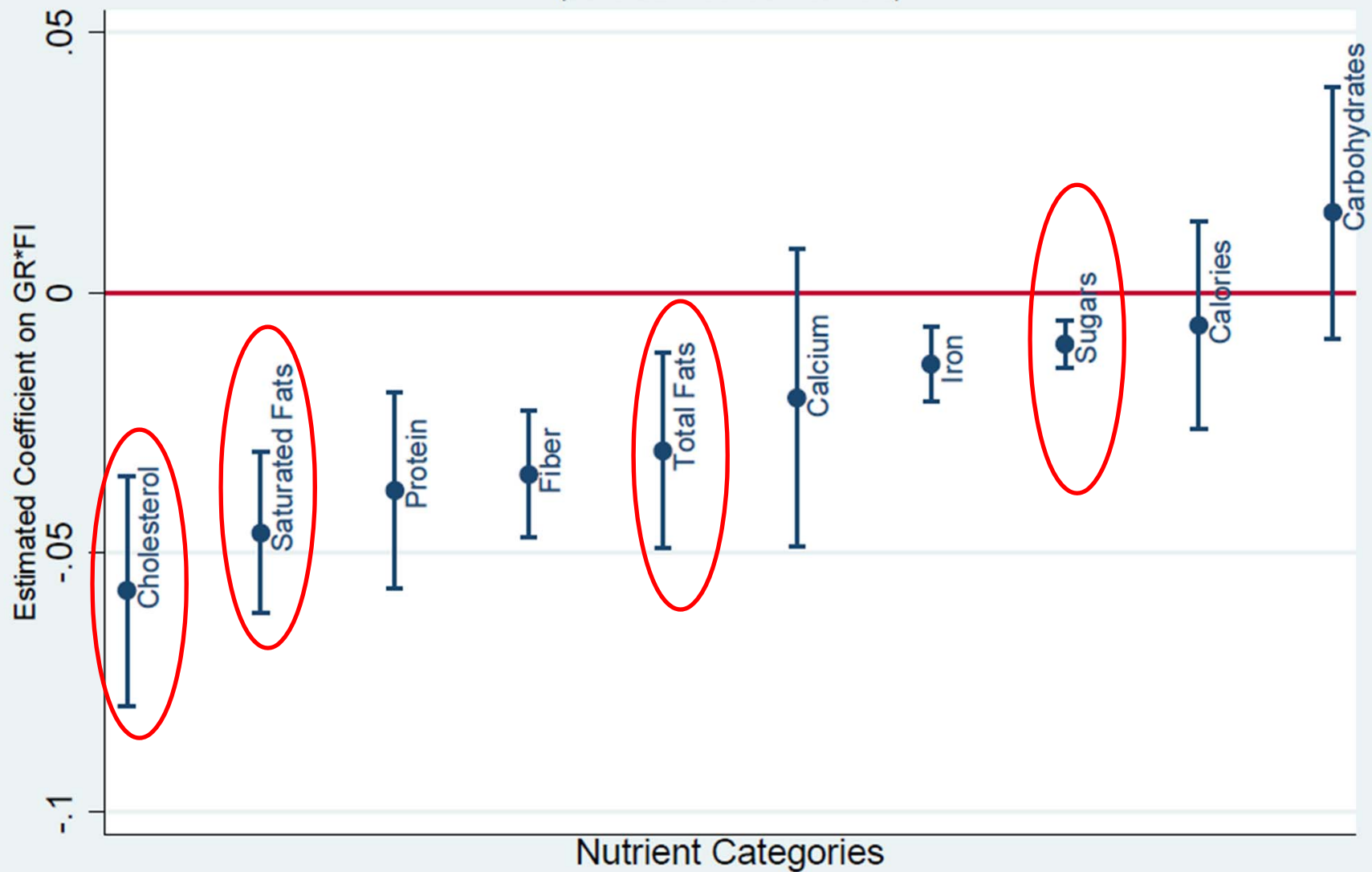
In(Nutrient) Changes for the Food Insecure During the Great Recession (95% Confidence Intervals)



In(Nutrient) Changes for the Food Insecure During the Great Recession (95% Confidence Intervals)



In(Nutrient) Changes for the Food Insecure During the Great Recession (95% Confidence Intervals)



Nutrition Summary

- Clear shift by FI toward eating more at home
- Increase in percent fast food meals/calories seems to indicate when eating out, it is at fast food, not at a higher quality restaurant
- Despite fast food increase, “bad” nutrients like fats, sugars and cholesterol are down, but so are good nutrients like protein, fiber and iron
- No real change in calories, but carbs are up

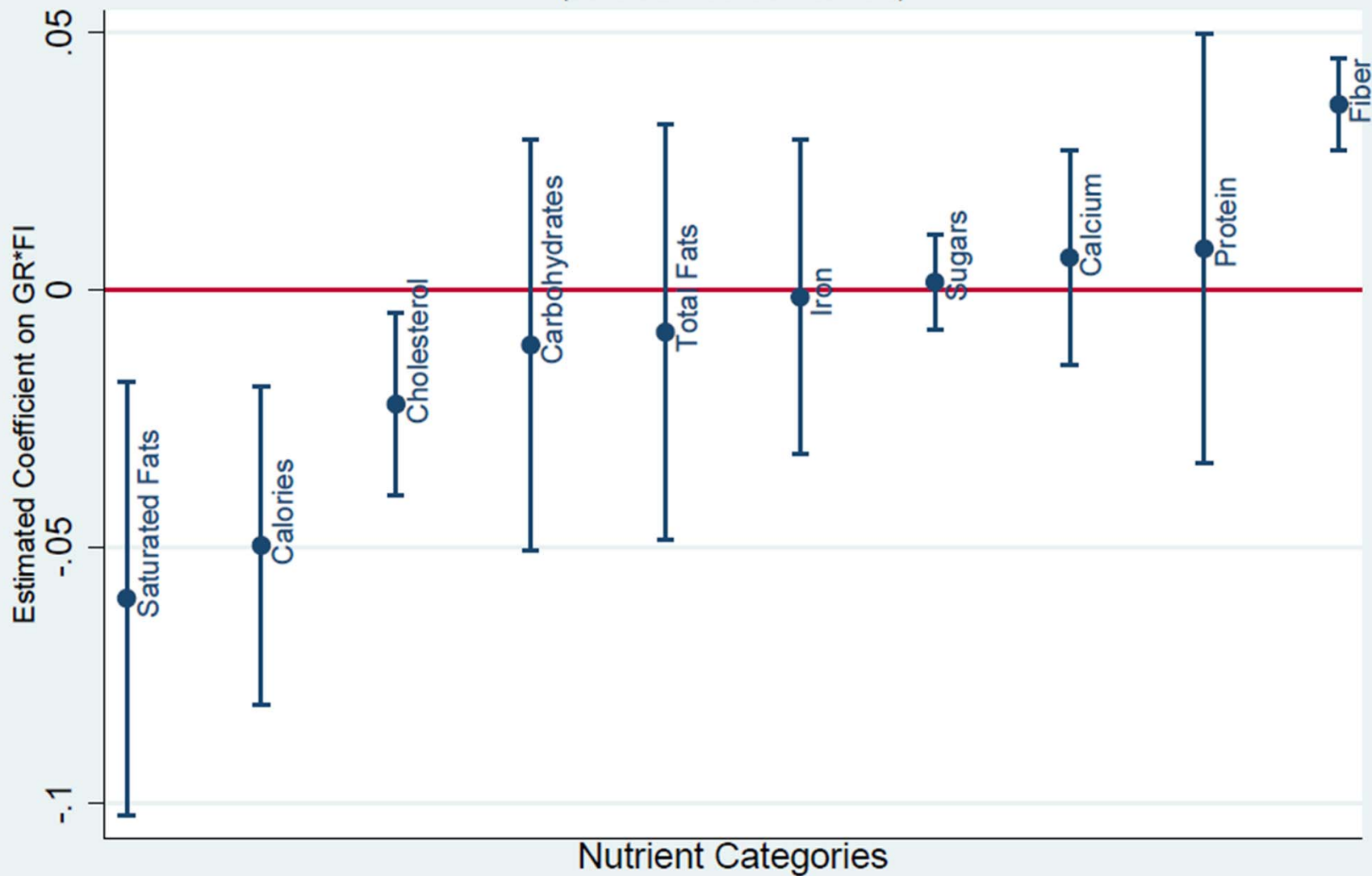
Ratio of Food CPI to CPI for non-Food, non-Energy Items



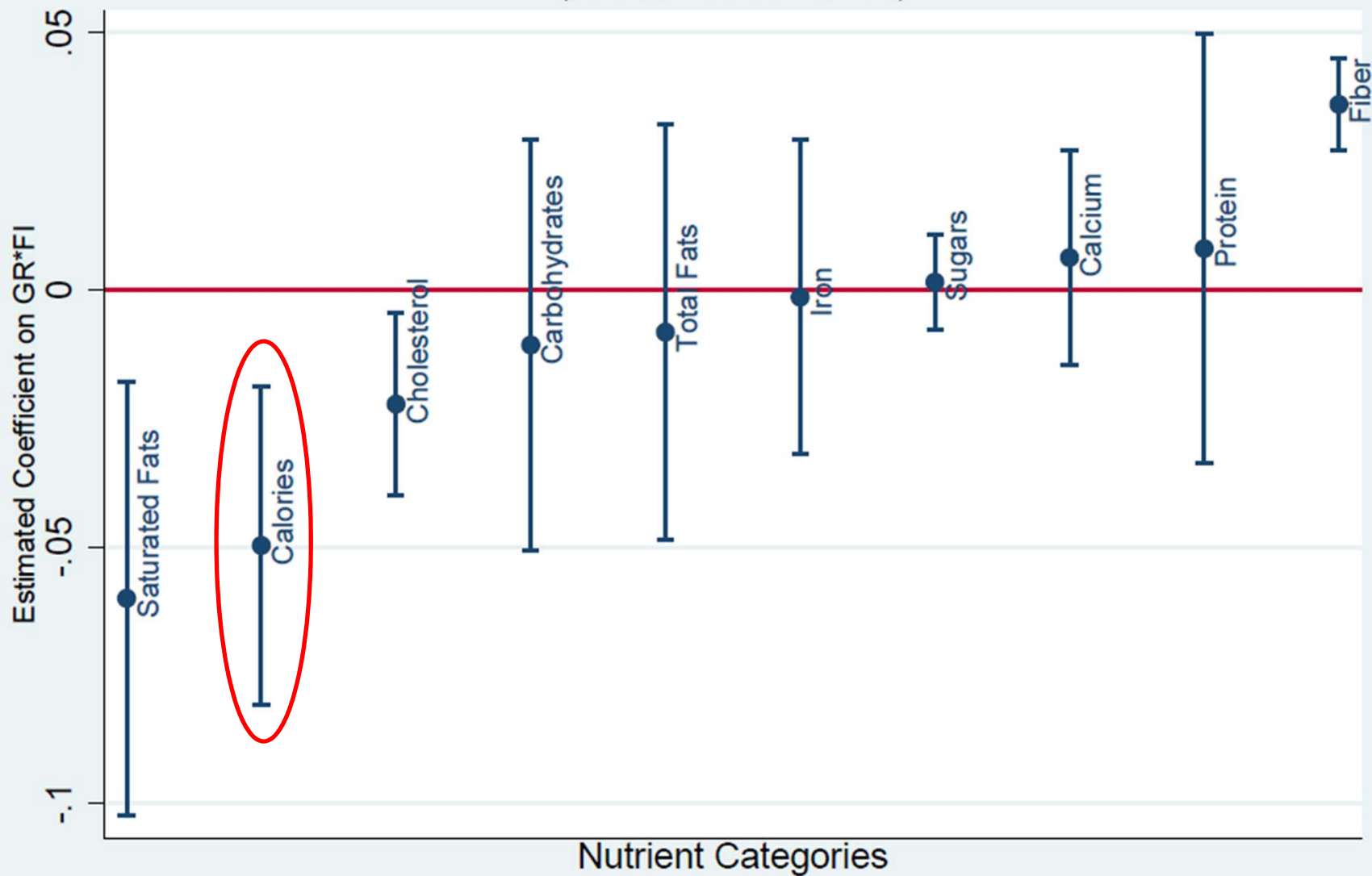
Role of Increased Food Prices?

- Given the relative increase in food prices over the GR, would like to explore food spending
- USDA's Center for Nutrition Policy and Promotion (CNPP) food prices database provides 2003-04 average national prices by USDA food code for about 4600 foods
 - Using the overall food CPI, we create inflation-adjusted prices for all years covered by NHANES
 - Merge to food diary data using 4-digit USDA code

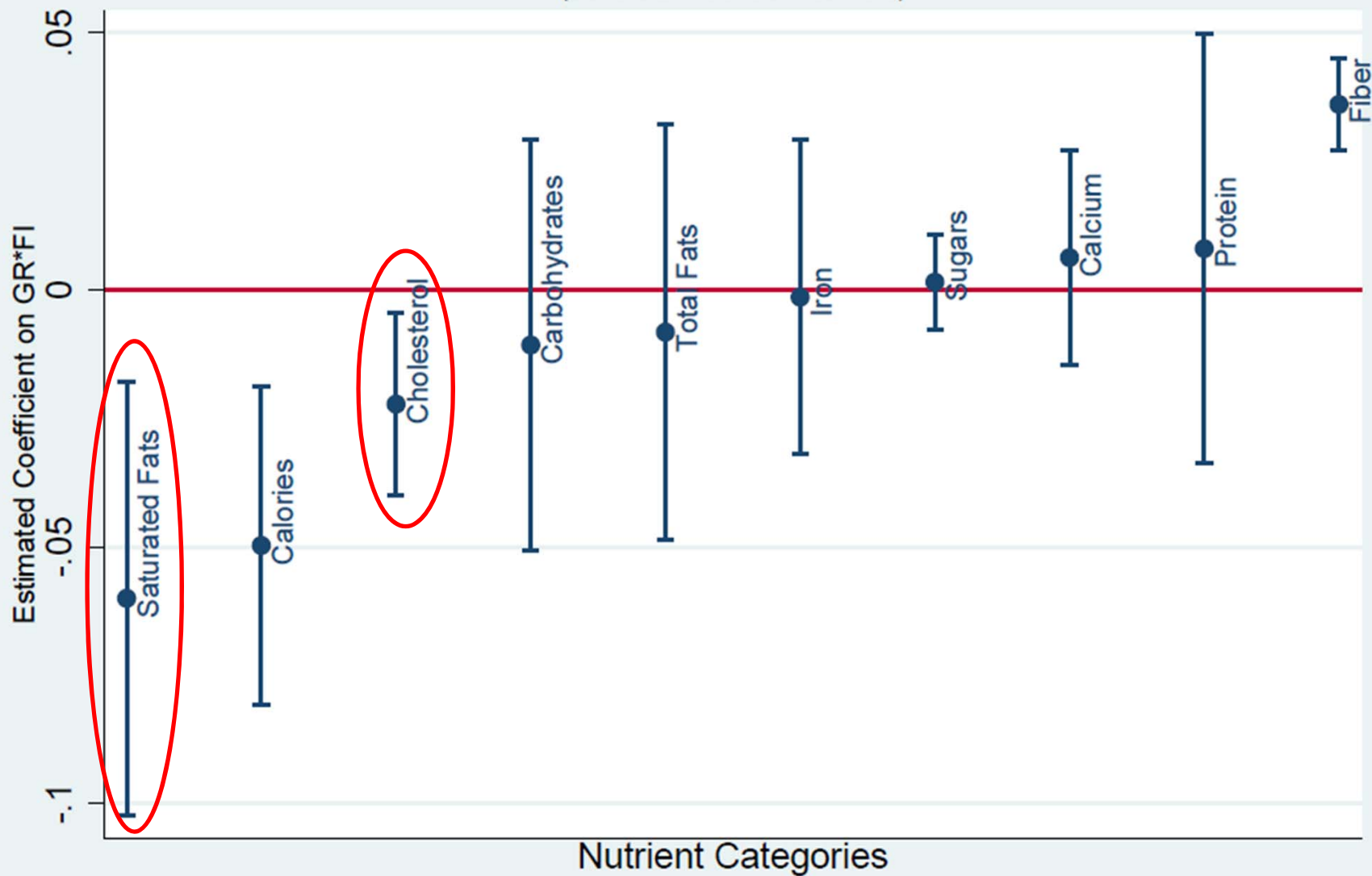
In(Price per Nutrient) Changes for the Food Insecure During the Great Recession (95% Confidence Intervals)



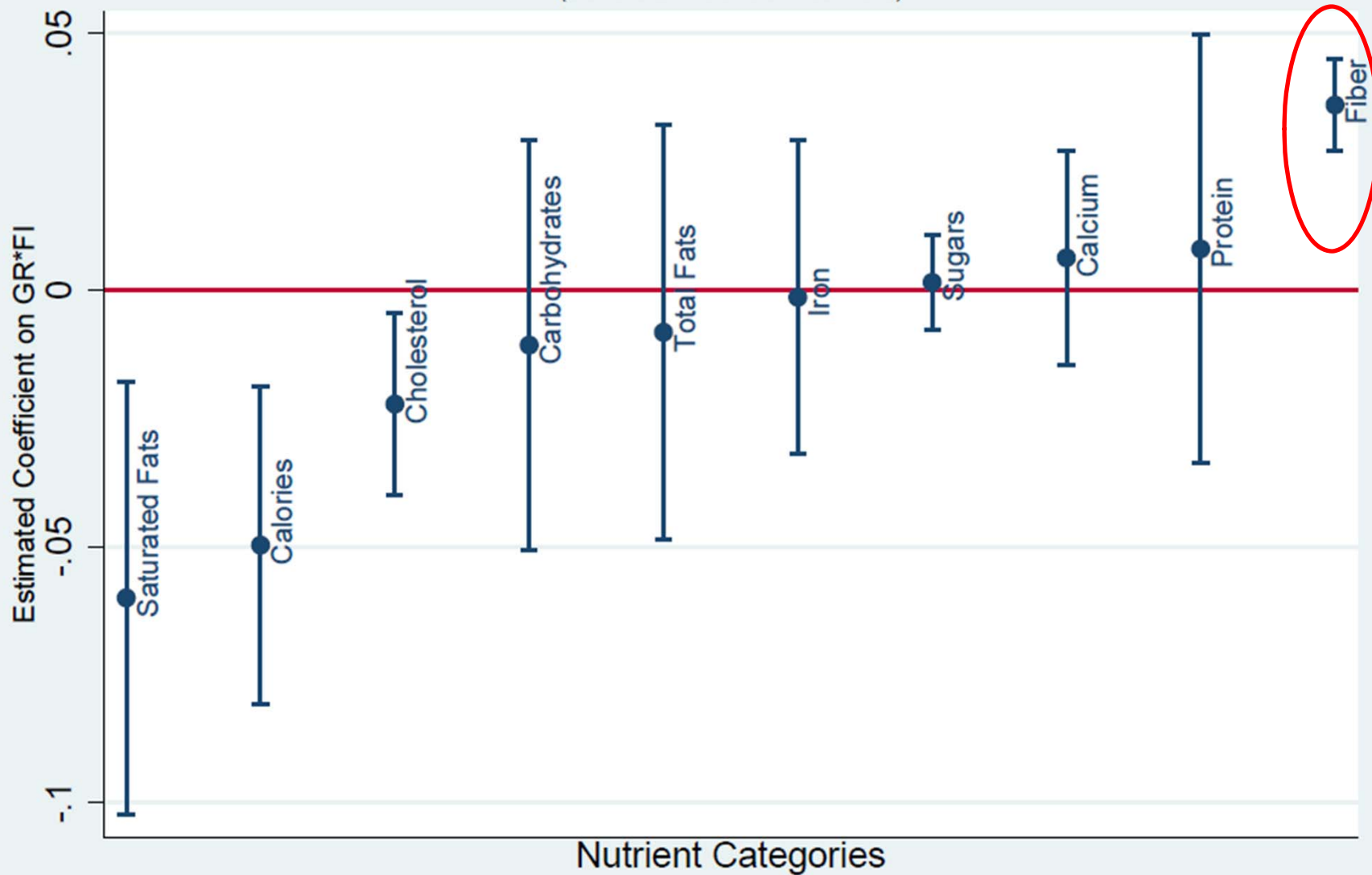
In(Price per Nutrient) Changes for the Food Insecure During the Great Recession (95% Confidence Intervals)



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In(Price per Nutrient) Changes for the Food Insecure During the Great Recession (95% Confidence Intervals)



Pricing Summary

- Over the GR, the FI appear to be spending less per calorie, per gram of saturated fat, and per milligram of cholesterol
 - Perhaps related to increased fast food meals?
- Also appear to be paying more per gram of fiber, but no other significant effects
- These pricing results should probably be taken with a grain of salt, given the compromises necessary to merge price data to the NHANES

Other Explorations

- We also used the ATUS matched to CPS to look at changes in time use by the Food Insecure over the Great Recession
- While the FI have clear average differences in many areas of time use, there were no differential changes over the Great Recession
- Average differences include such things as
 - More sleep, time preparing food
 - Less work, time eating & drinking

Wrap-Up

- The Great Recession resulted in apparent excess Food Insecurity relative to poverty rate
- These newly FI have higher SES characteristics
- Food Stamp participation increased for the FI over the GR, but very few other programs did
- FI more likely to eat at home, and when eating out, at fast food (versus other) restaurants
 - No significant drop in calories, but drops in protein, increases in carbohydrates

Bonus Slides

- The following slides have hyperlinks to them from within the main body of the presentation
- I probably do want to show the questions
- I probably don't have time for the Oaxaca
- If time, flip quickly to the percentage change graphs to add some context

FI Supplement Questions (all HH)

1. “We worried whether our food would run out before we got money to buy more.” Was that often, sometimes, or never true for you in the last 12 months?
2. “The food that we bought just didn’t last and we didn’t have money to get more.” Was that often, sometimes, or never true for you in the last 12 months?
3. “We couldn’t afford to eat balanced meals.” Was that often, sometimes, or never true for you in the last 12 months?
4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn’t enough money for food? (Yes/No)
5. (If yes to question 4) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
6. In the last 12 months, did you ever eat less than you felt you should because there wasn’t enough money for food? (Yes/No)
7. In the last 12 months, were you ever hungry, but didn’t eat, because there wasn’t enough money for food? (Yes/No)
8. In the last 12 months, did you lose weight because there wasn’t enough money for food? (Yes/No)
9. In the last 12 months did you or other adults in your household ever not eat for a whole day because there wasn’t enough money for food? (Yes/No)
10. (If yes to question 9) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

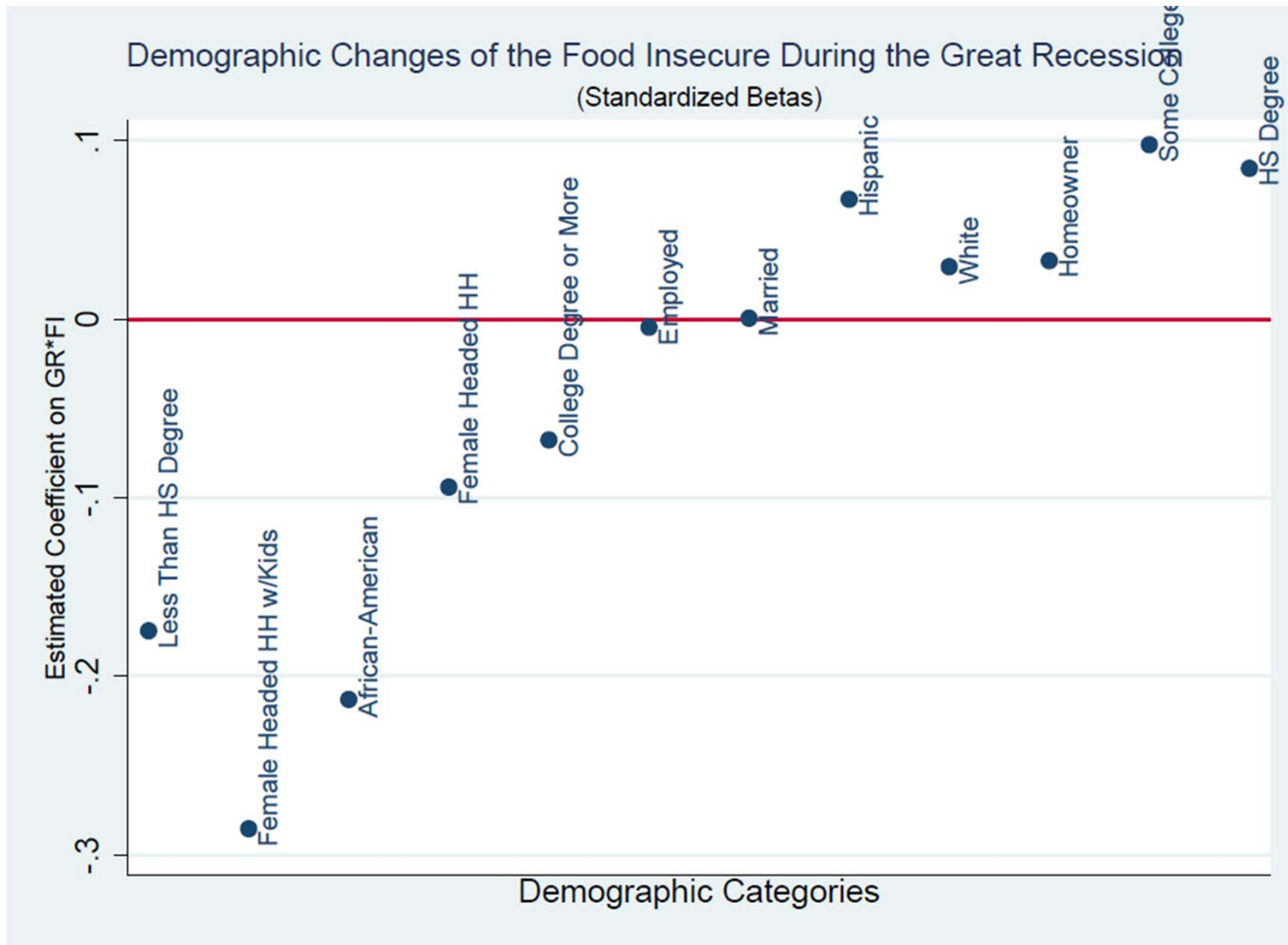
FI Supplement Questions (HH w/kids)

11. “We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food.” Was that often, sometimes, or never true for you in the last 12 months?
12. “We couldn’t feed our children a balanced meal, because we couldn’t afford that.” Was that often, sometimes, or never true for you in the last 12 months?
13. “The children were not eating enough because we just couldn’t afford enough food.” Was that often, sometimes, or never true for you in the last 12 months?
14. In the last 12 months, did you ever cut the size of any of the children’s meals because there wasn’t enough money for food? (Yes/No)
15. In the last 12 months, were the children ever hungry but you just couldn’t afford more food? (Yes/No)
16. In the last 12 months, did any of the children ever skip a meal because there wasn’t enough money for food? (Yes/No)
17. (If yes to question 16) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
18. In the last 12 months did any of the children ever not eat for a whole day because there wasn’t enough money for food? (Yes/No)

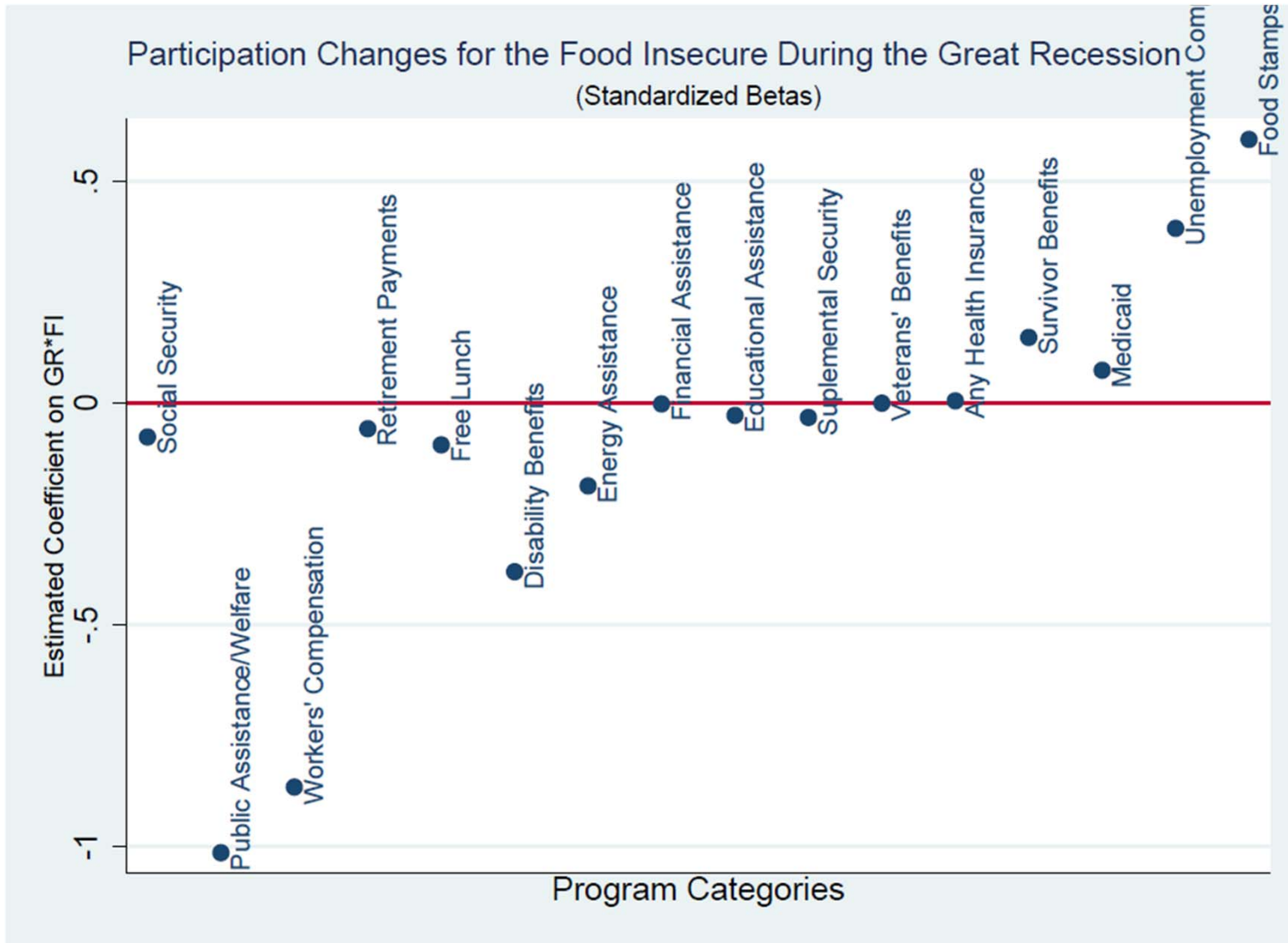
Sample Oaxaca Decomposition

	coefficients	coefficients	means	means	explained	unexplained
RHS vars	GR	notGR	GR	notGR		
_cons	0.3749	0.3649	1.0000	1.0000	0.0000	0.0099
pctworking	-0.0152	0.0087	0.7696	0.7916	-0.0002	-0.0183
wkswrkper	-0.0003	-0.0008	43.7741	44.5770	0.0007	0.0251
wkslkper	0.0026	0.0039	4.1347	2.5029	0.0064	-0.0056
hrswkper	-0.0015	-0.0001	36.0500	36.6451	0.0000	-0.0518
homeowner	-0.0814	-0.0895	0.5383	0.5677	0.0026	0.0044
hhincpov	-0.0003	-0.0003	184.7223	187.4920	0.0009	-0.0014
hfoodsp	0.1499	0.1097	0.1466	0.0947	0.0057	0.0059
hflunno	0.0382	0.0320	0.2377	0.2323	0.0002	0.0015
wic	0.0877	0.0942	0.0531	0.0495	0.0003	-0.0003
black	0.0844	0.0598	0.1321	0.1183	0.0008	0.0033
hispanic	0.0735	0.0072	0.1546	0.1376	0.0001	0.0102
whitenh	0.0430	-0.0007	0.6528	0.6824	0.0000	0.0285
foreignborn	-0.0081	-0.0279	0.1597	0.1408	-0.0005	0.0032
hsdeg	-0.0250	-0.0544	0.3489	0.3546	0.0003	0.0103
somecol	-0.0242	-0.0701	0.2939	0.2787	-0.0011	0.0135
colplus	-0.1033	-0.1057	0.1542	0.1380	-0.0017	0.0004
numkids	-0.0037	0.0018	0.6999	0.7817	-0.0001	-0.0039
numover60	-0.0502	-0.0339	0.3082	0.2781	-0.0010	-0.0050
Total					0.0135	0.0298
fi12m	--	--	0.2369	0.1924		0.0444

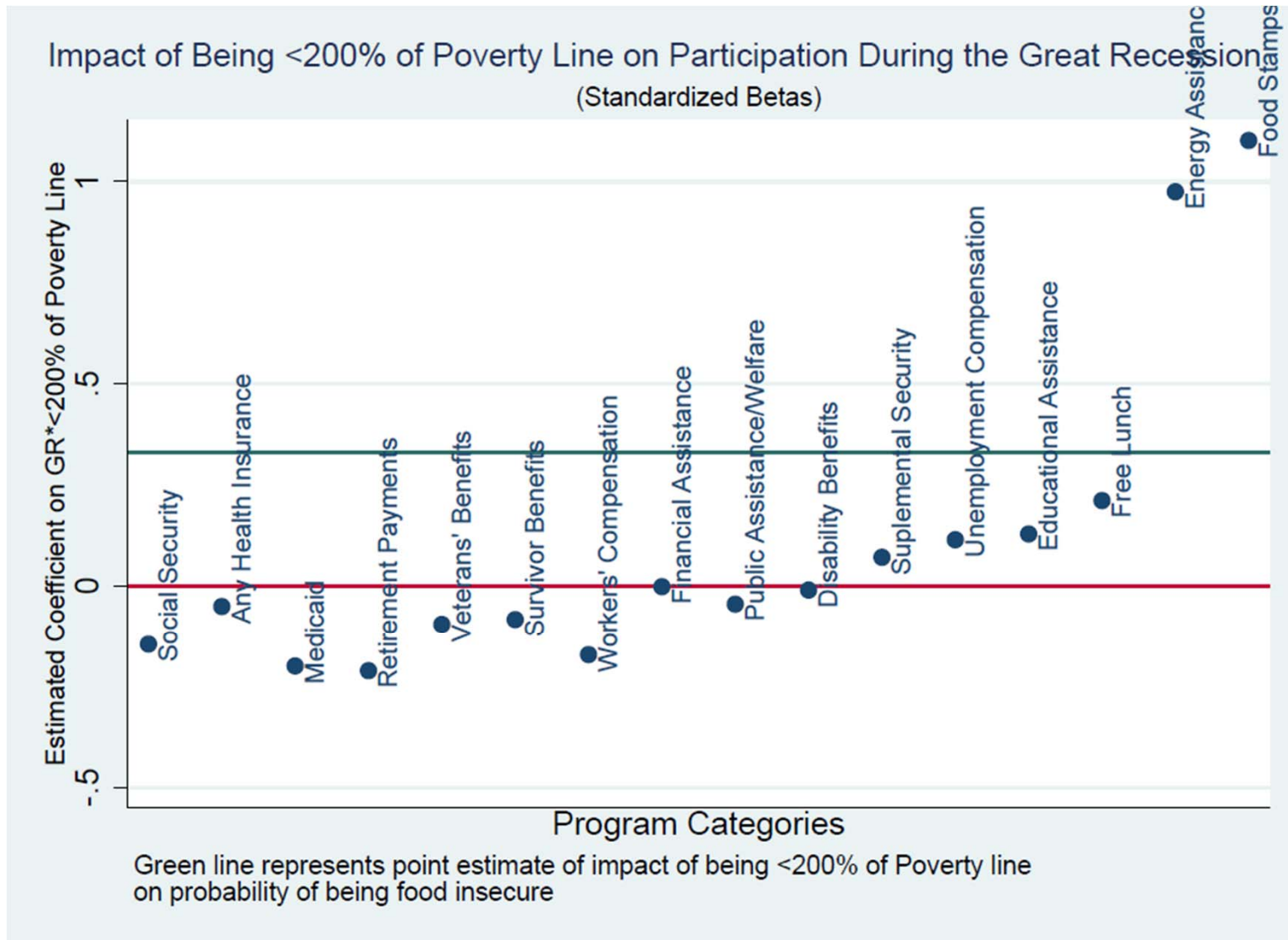
Demographic Percentage Changes



Participation Percentage Changes



Poor Participation Percentage Changes



Place of Eating Percentage Change

