Issue # 7: Numerator Data - Trends and Event Studies 2021-2022

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This Write-up contains tables and plots for trend and event study analyses of the Numerator data. The original user-trip-item level data is transformed to user- month level data, with variables summarized at the monthly level for each user. SNAP and Non-SNAP treatment is determined by SNAP participation rate of each user over the periods of the data (>0.5 on SNAP; $<=0.5$ Non-SNAP)

1. Figures: Monthly average of ...

   - level/log total spending winsorized
   - level/log Food spending winsorized
   - level/log Food on SNAP winsorized
   - level/log Soda spending winsorized
   - level/log Soda on SNAP winsorized
   - prop. food spending
   - prop. food on SNAP
   - prop. soda
   - prop. soda on SNAP
   - level/log soda spending by SNAP/Non-SNAP
   - level/log soda spending by state $\times$ SNAP
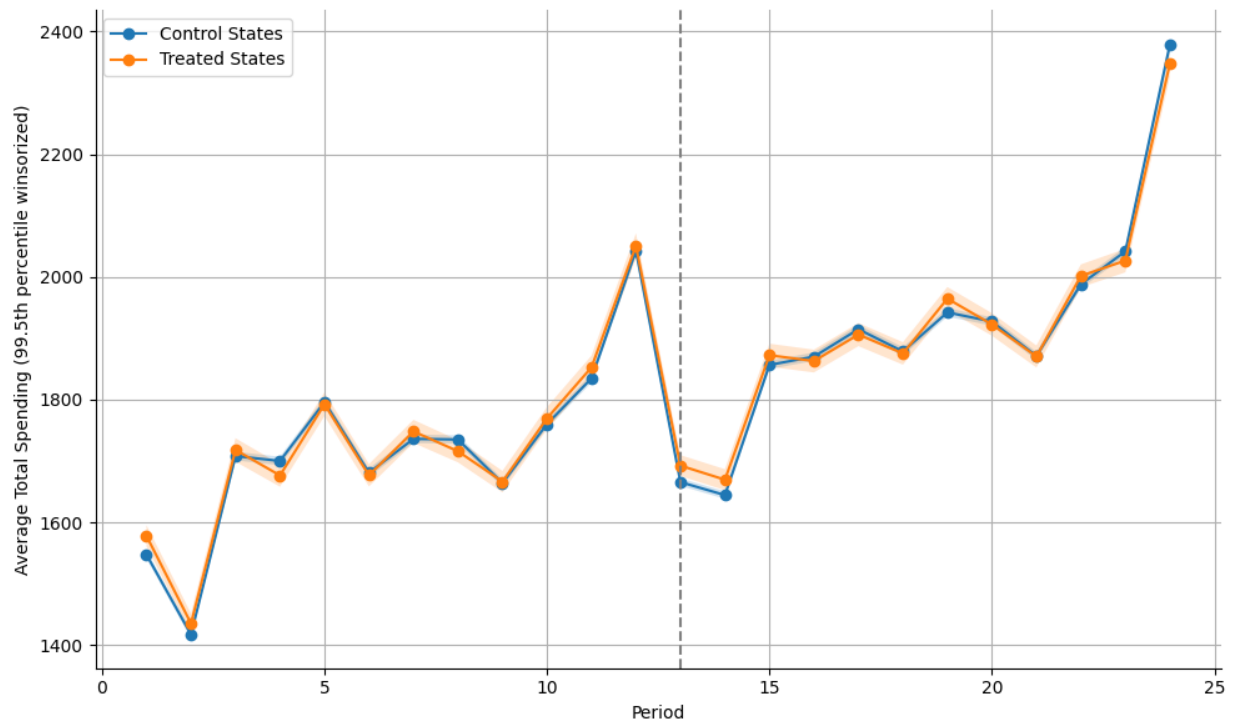
2. Figures: Event Studies

   - level/log soda spending winsorized
   - level/log soda spending by SNAP $\times$ post (conditional on treated states)
   - level/log soda spending DDD

3. Tables

   - TWFE/DDD Model Estimates

Figure 1: Monthly Average of Total Food Spending
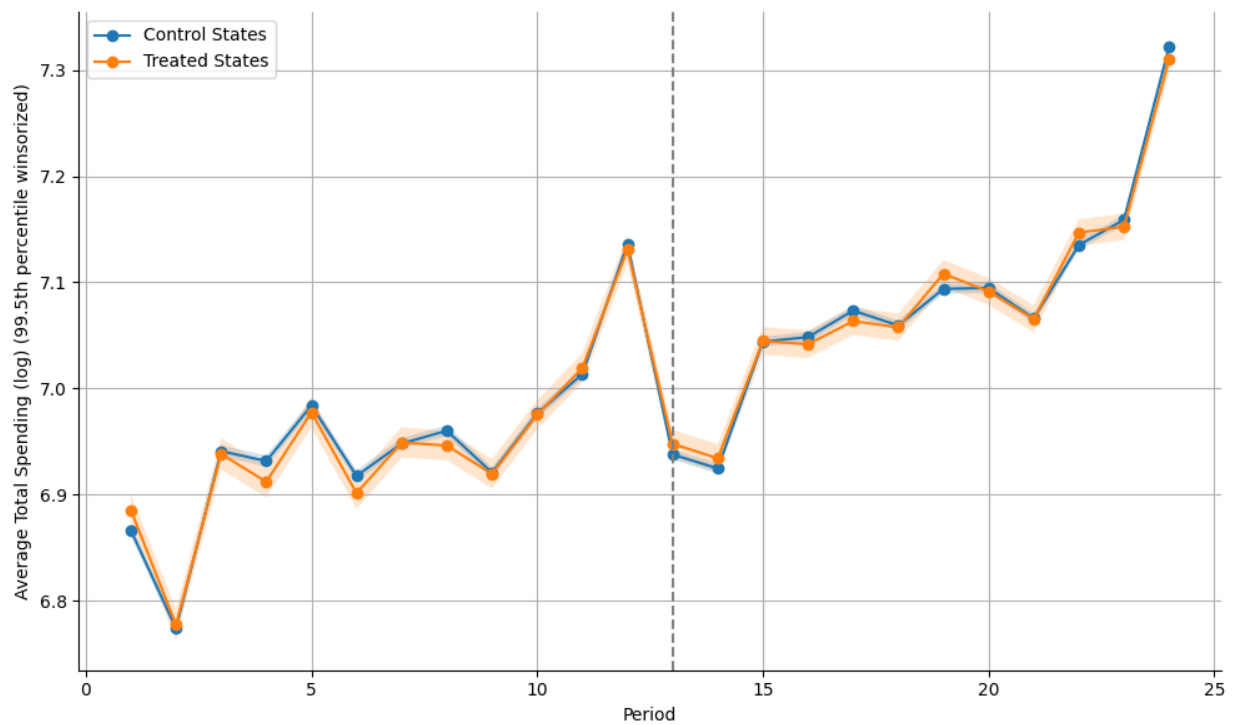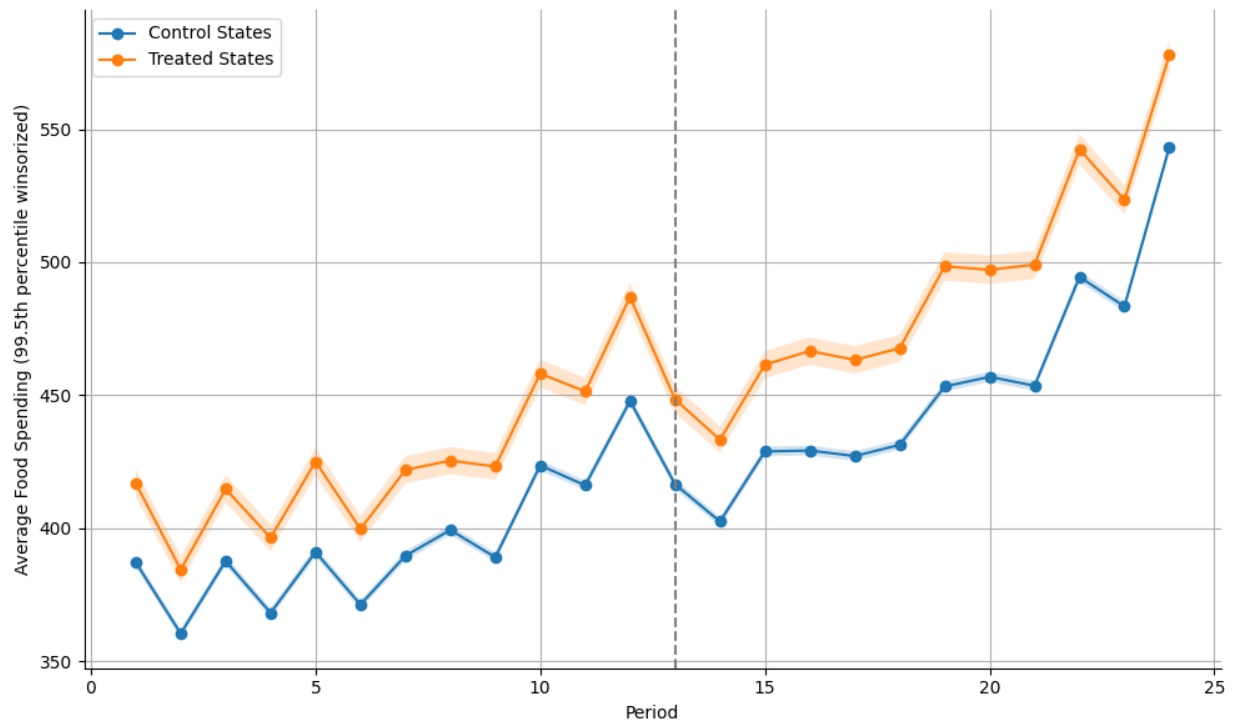
(a) level

(b) log

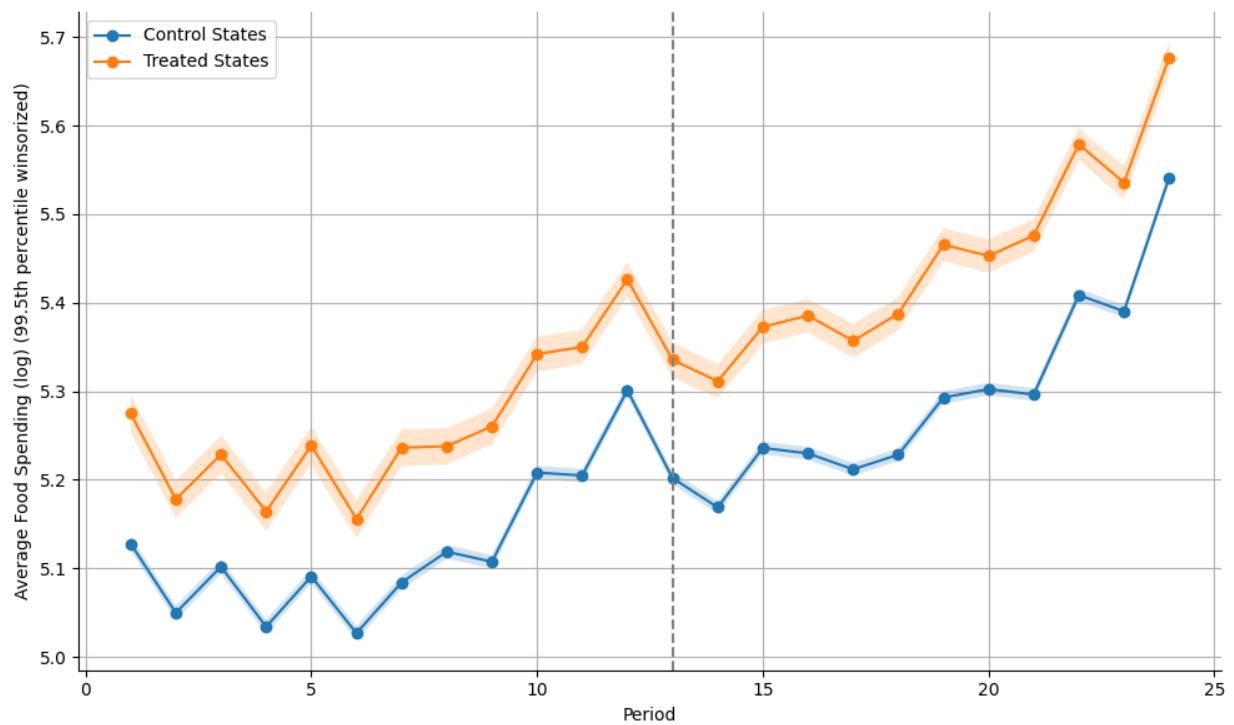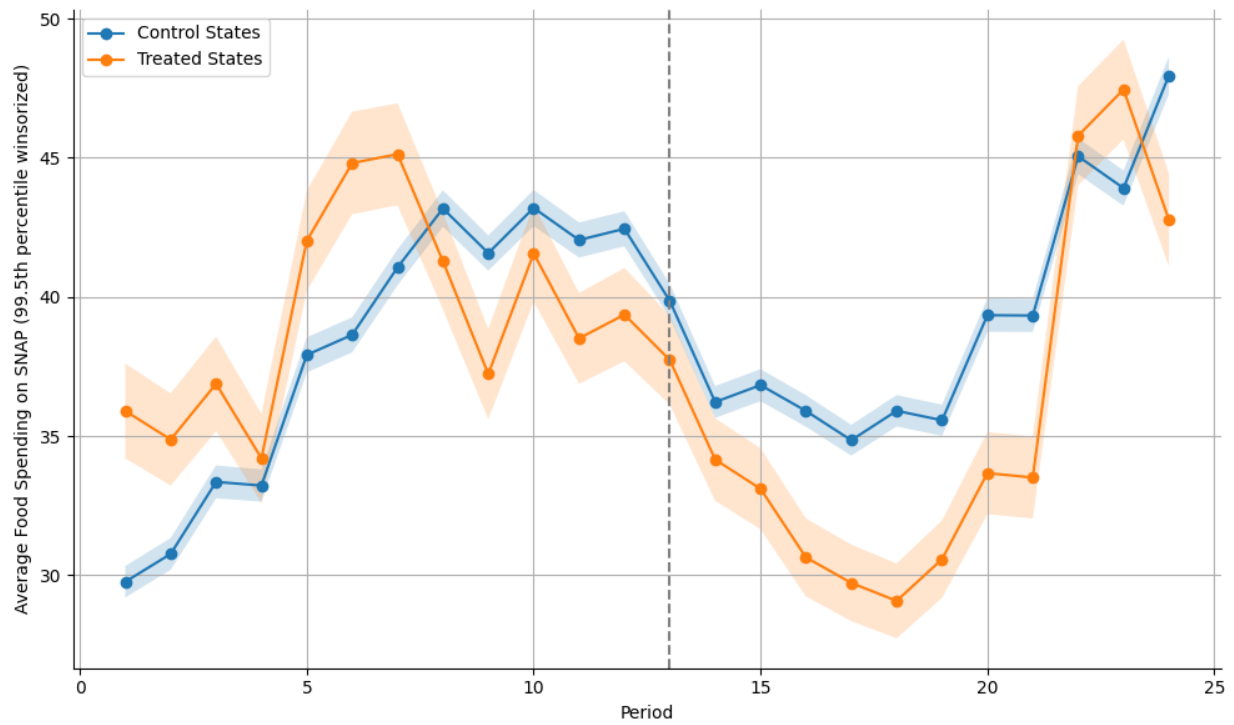Figure 2: Monthly Average of Food Spending

(a) level

(b) log

Figure 3: Monthly Average of Food Spending on SNAP
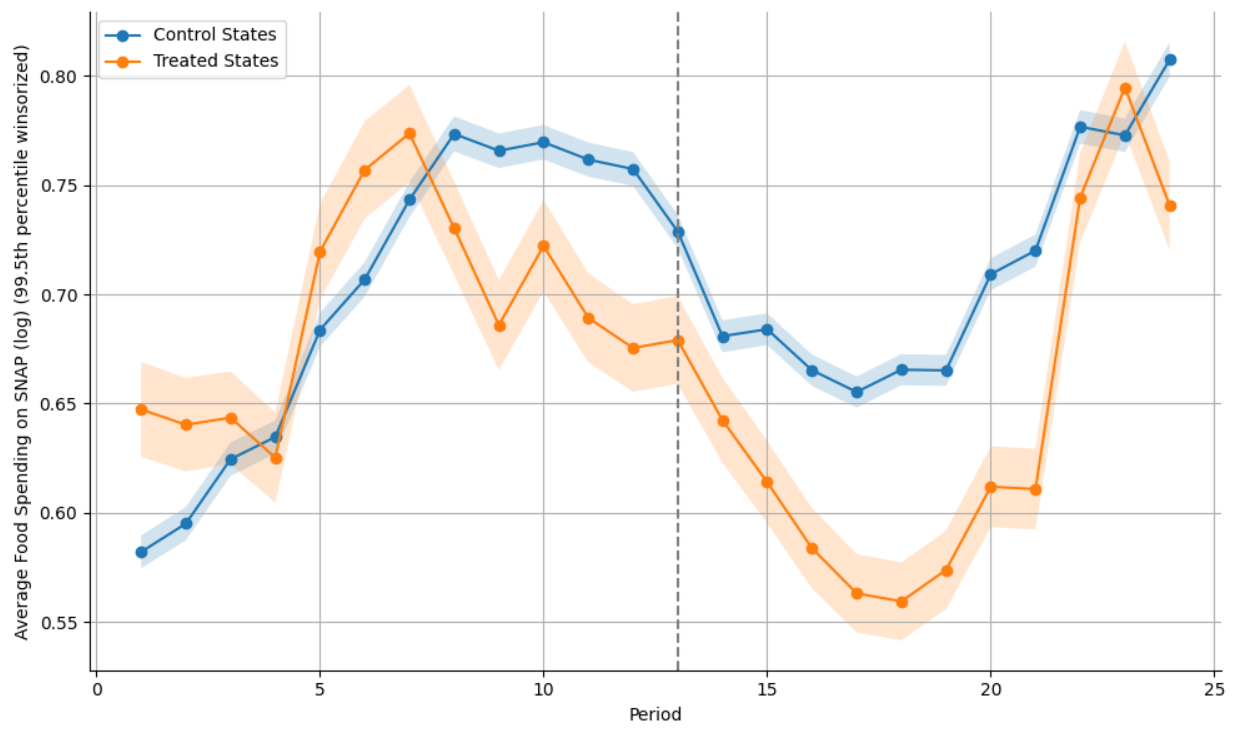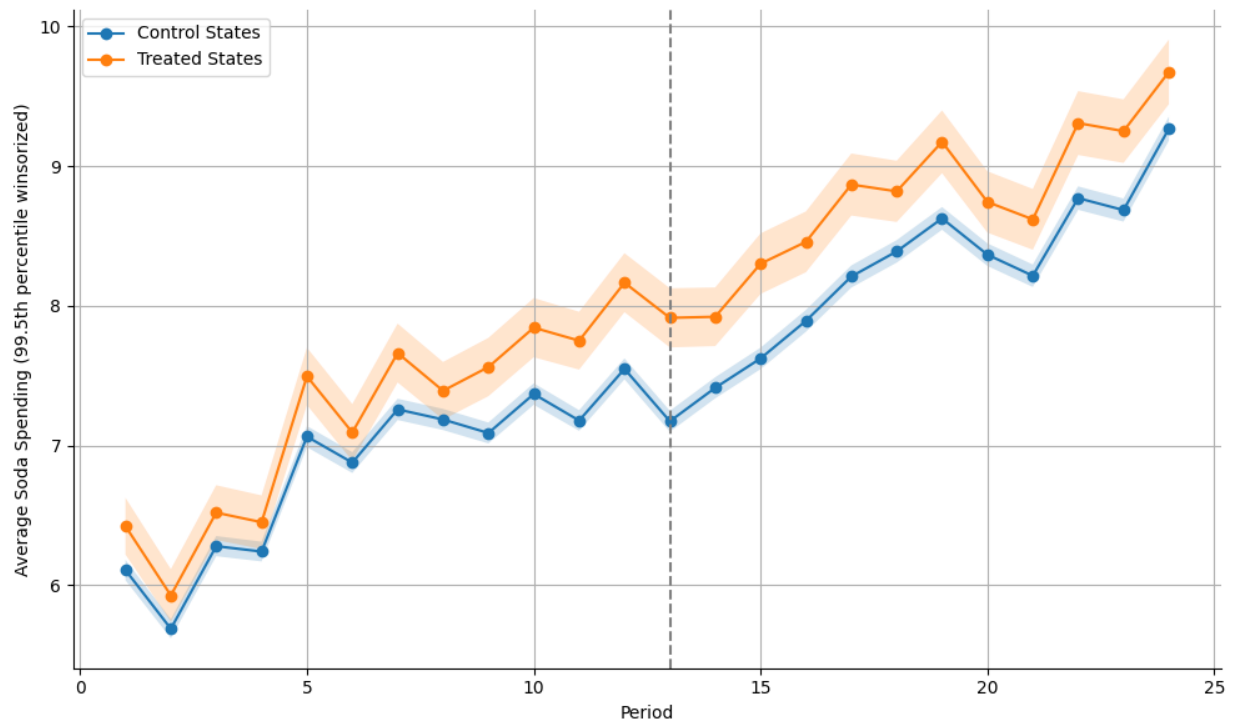
(a) level

(b) log

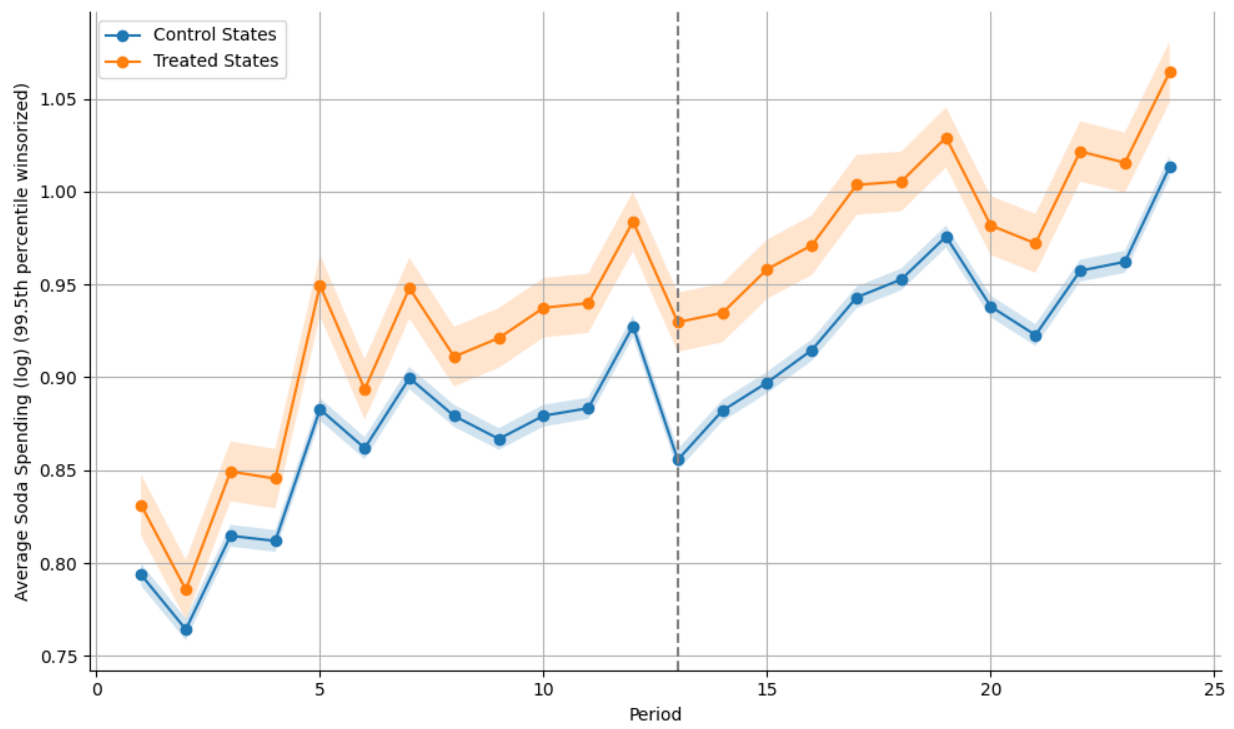Figure 4: Monthly Average of Soda Spending
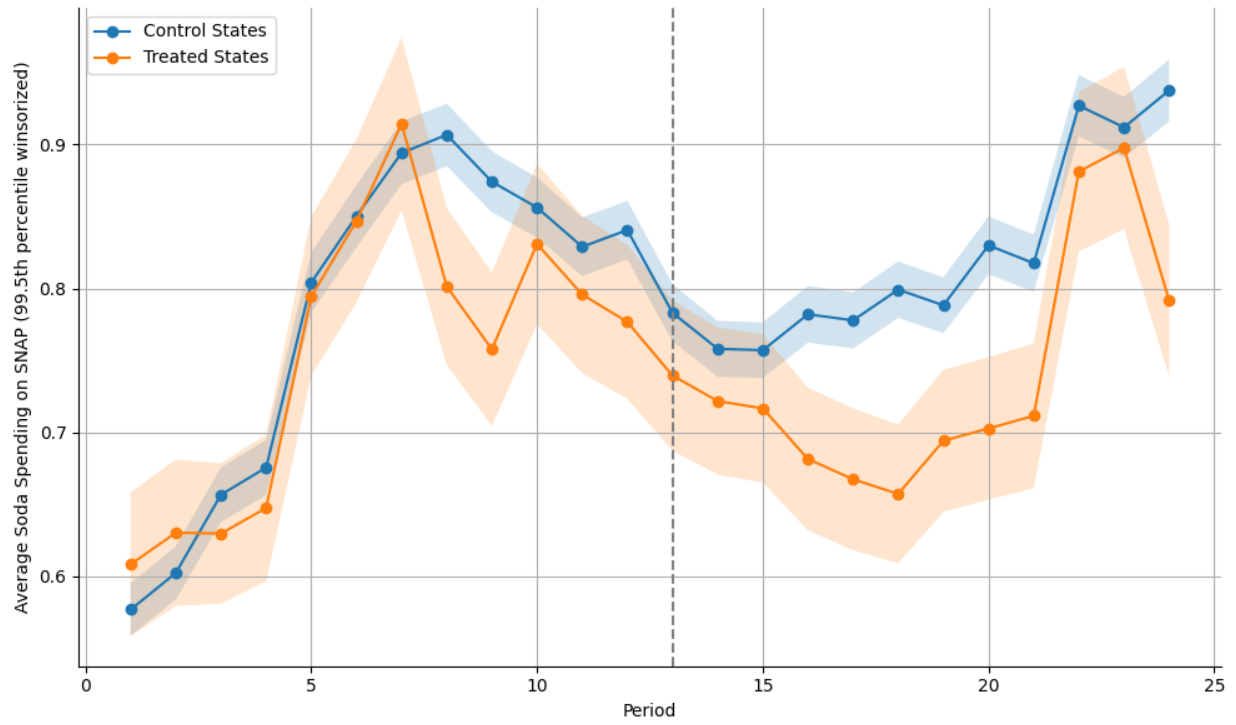
(a) level

(b) log

Figure 5: Monthly Average of Soda Spending on SNAP
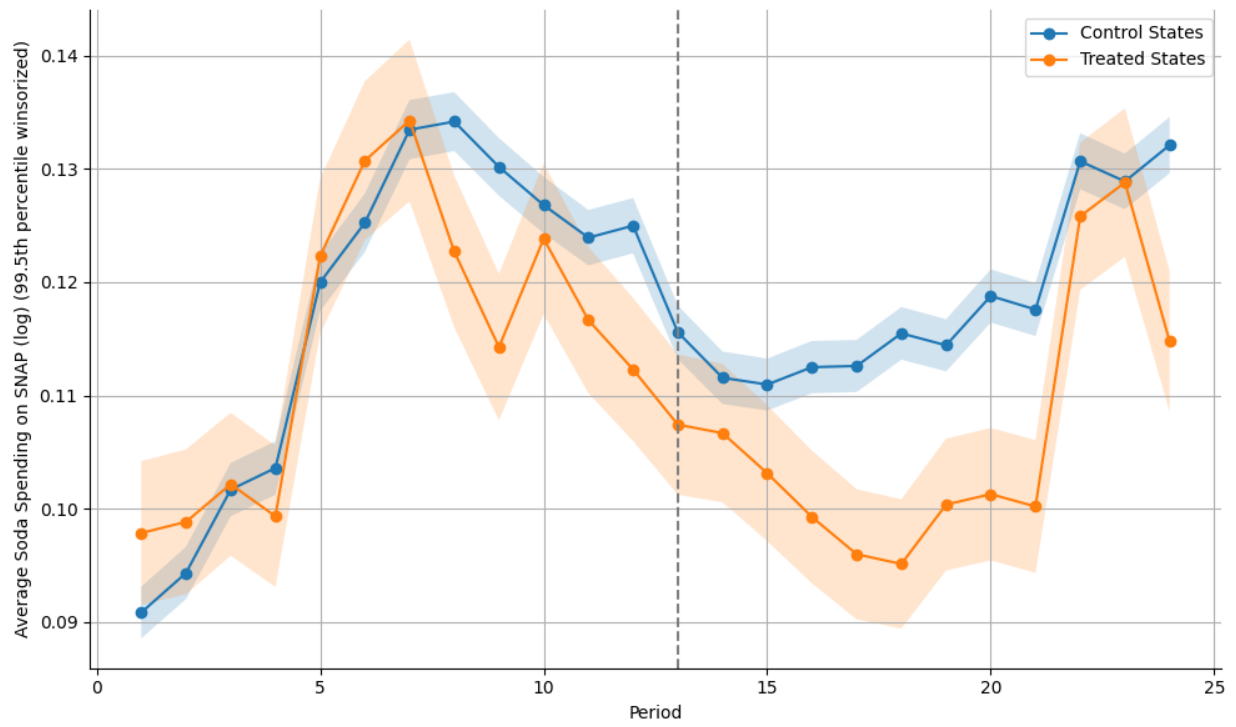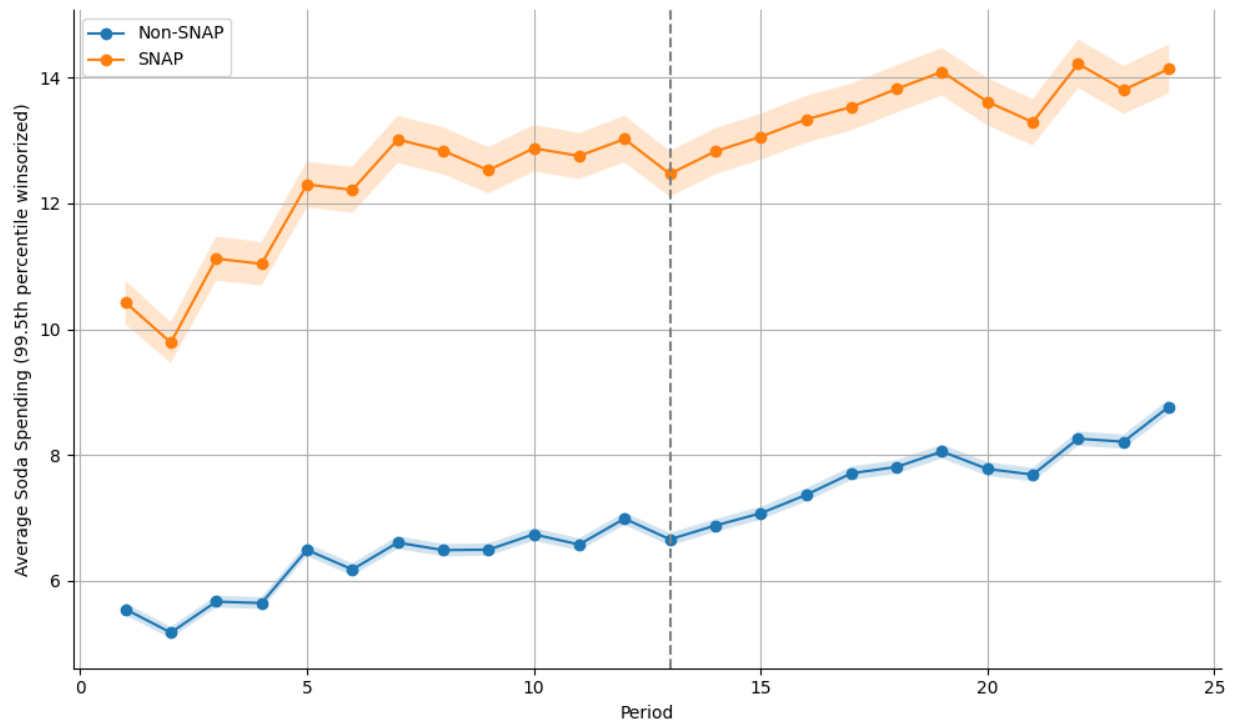
(a) level

(b) log

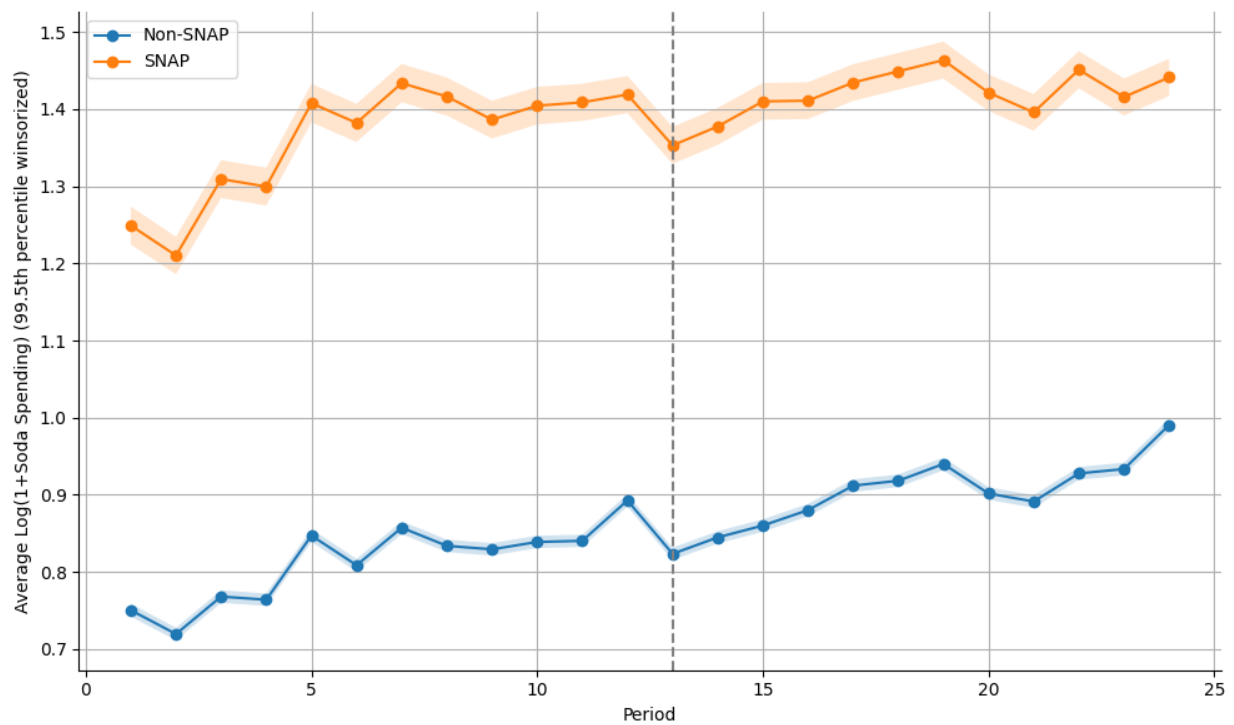Figure 6: Monthly Average of Soda Spending by SNAP/Non-SNAP
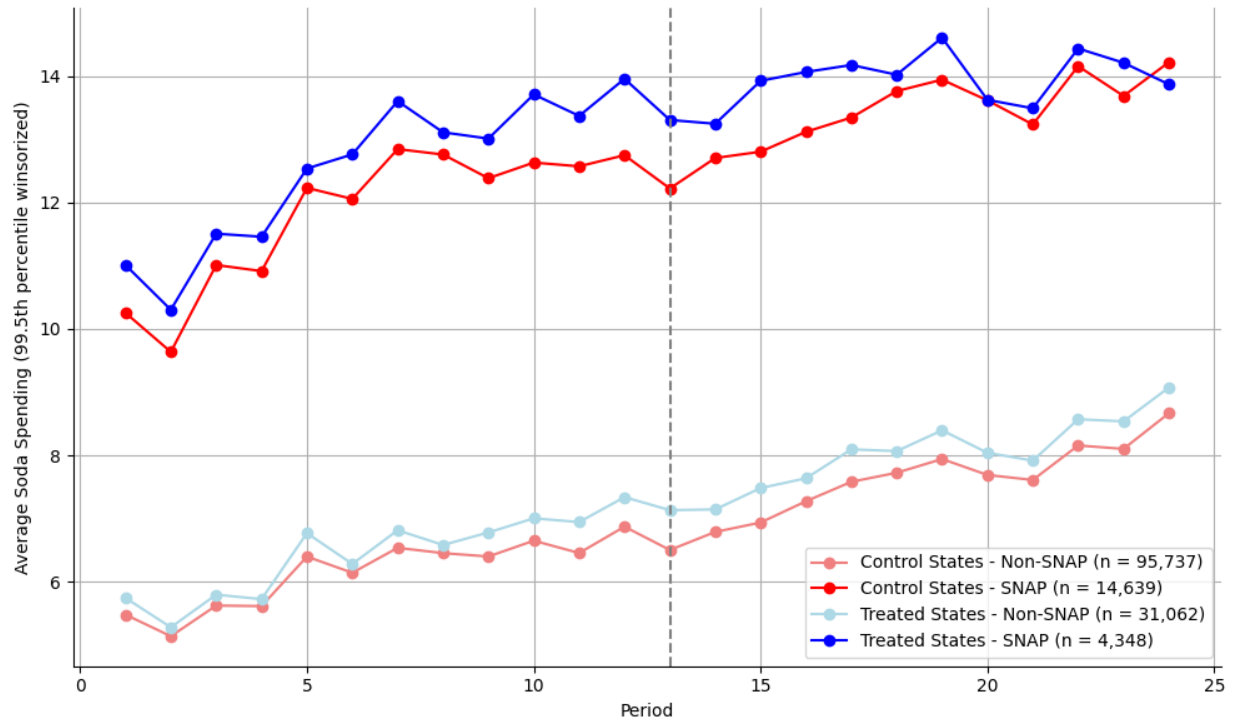
(a) level

(b) log

Figure 7: Monthly Average of Soda Spending by SNAP × state
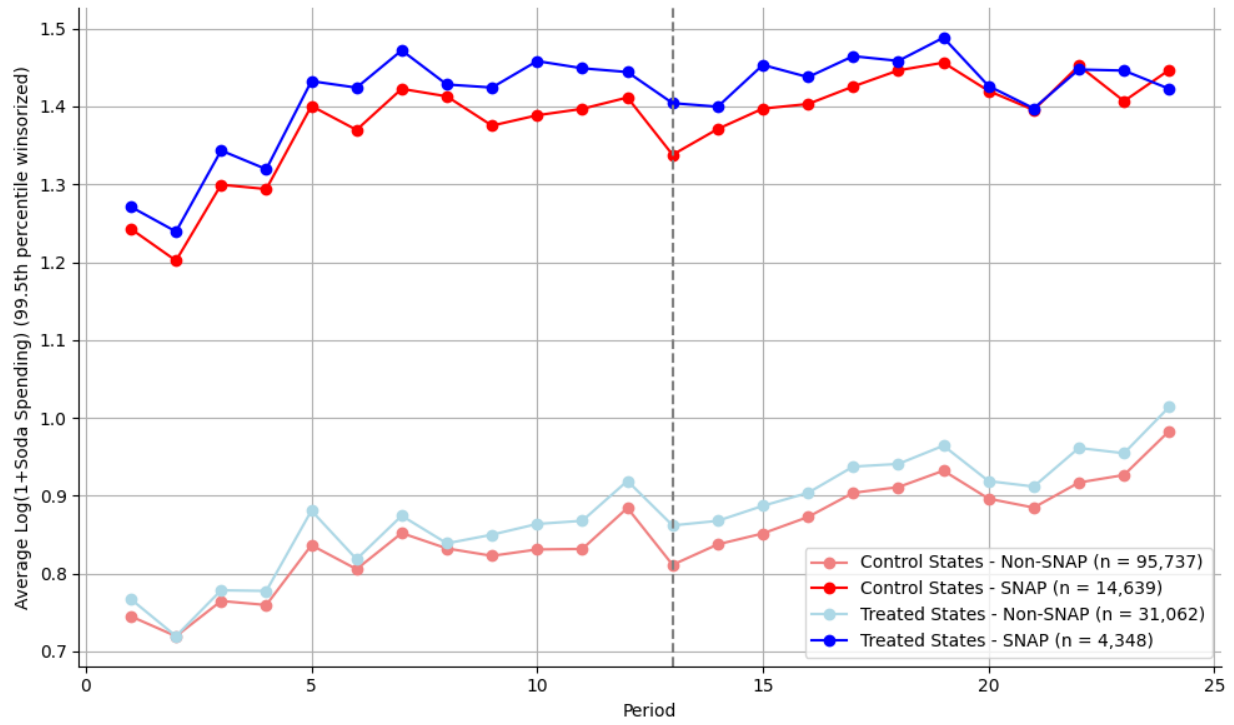
(a) level

(b) log

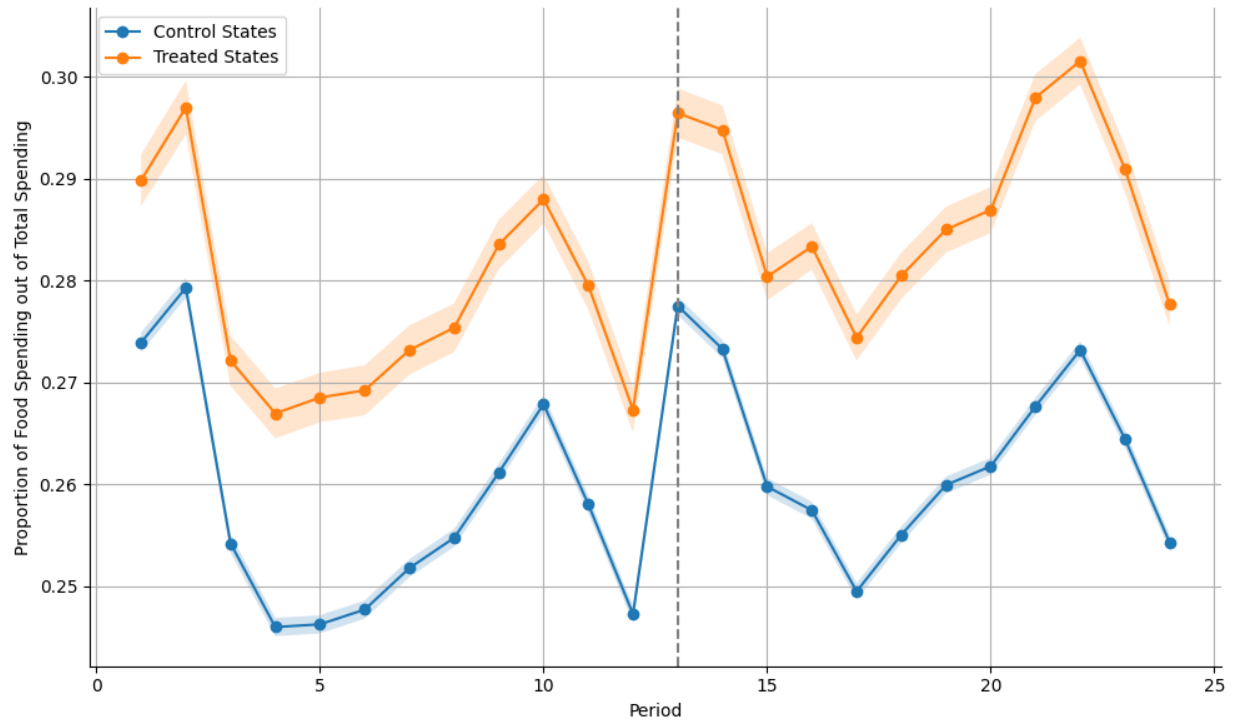Figure 8: Proportion of Food Spending out of Total Spending

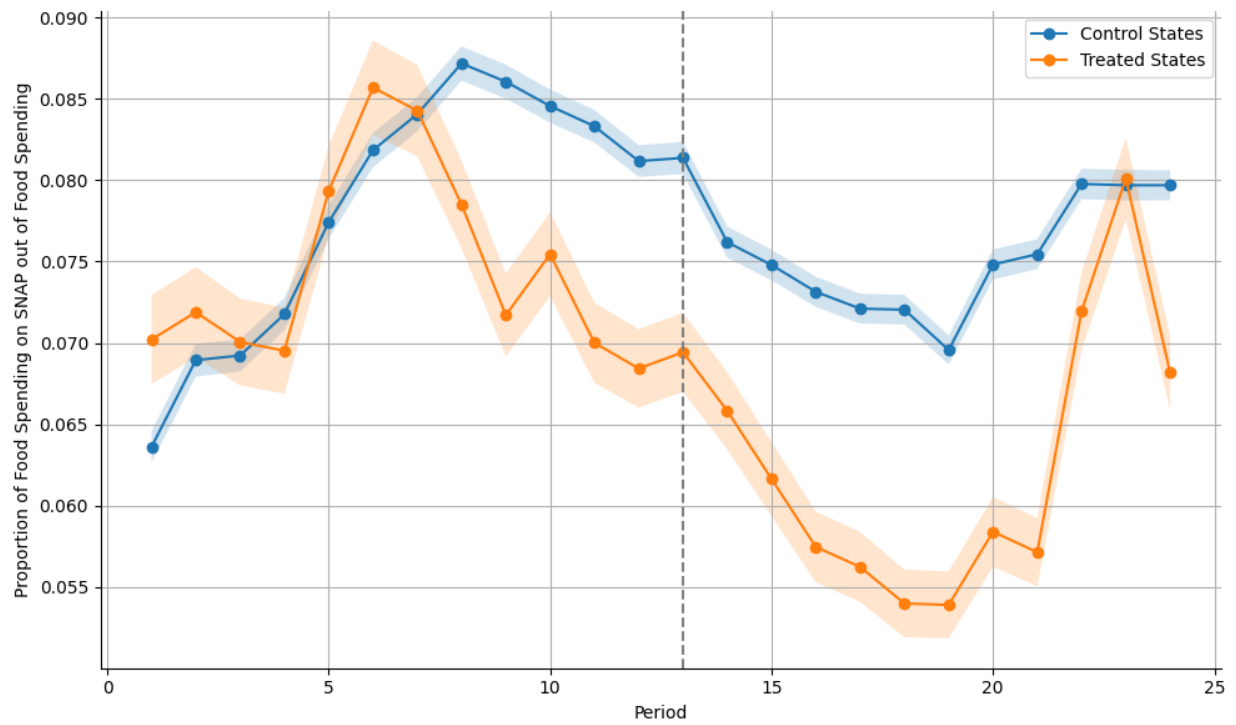Figure 9: Proportion of Food Spending on SNAP out of Total Food Spending

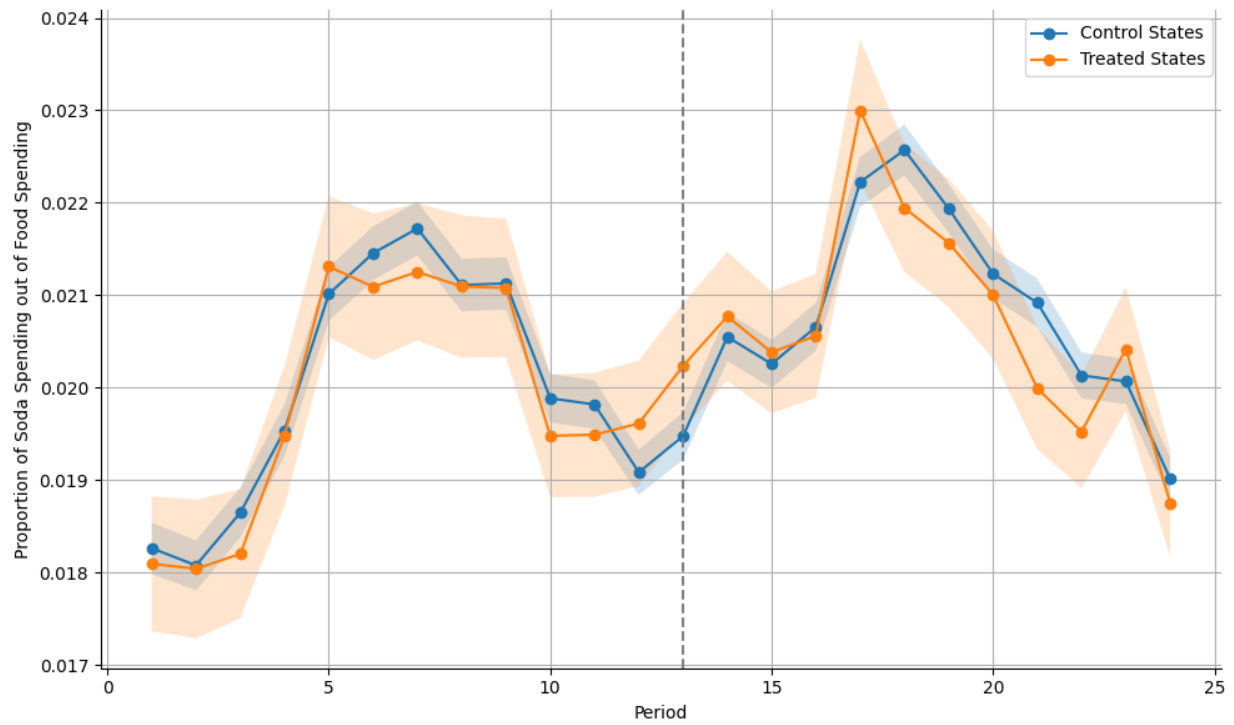Figure 10: Proportion of Soda Spending out of Total Food Spending

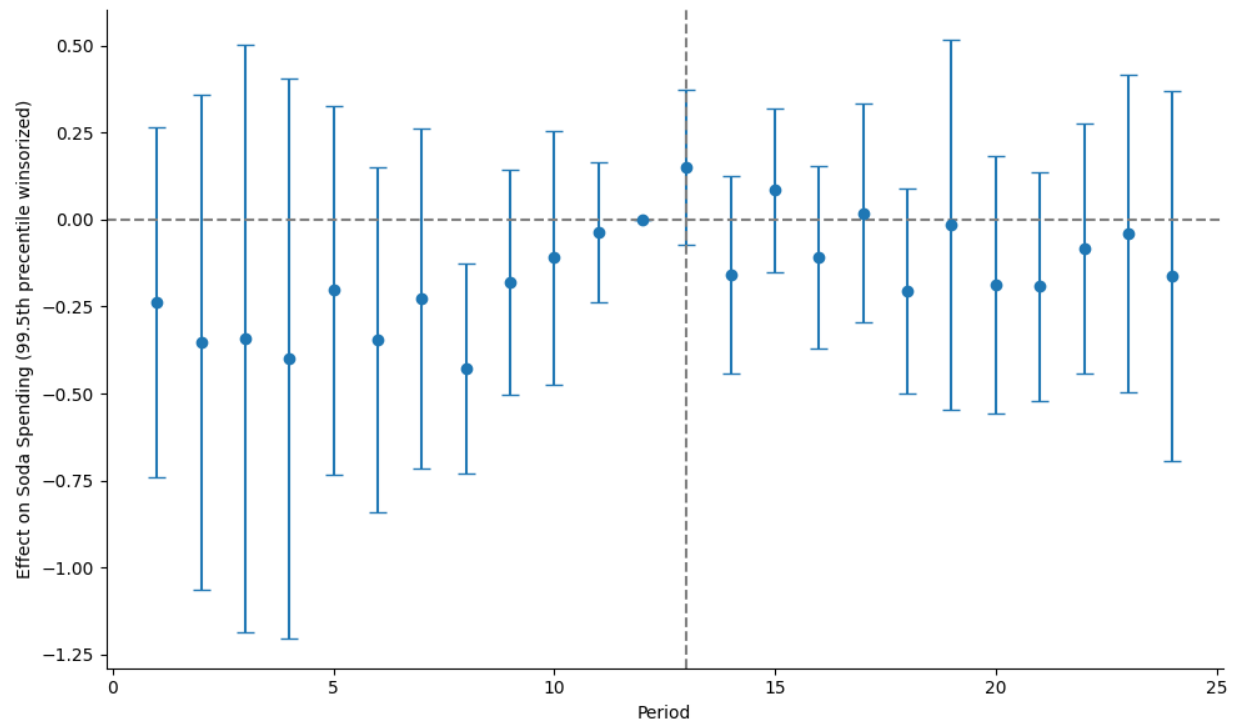# Figure 11: Event Study - TWFE
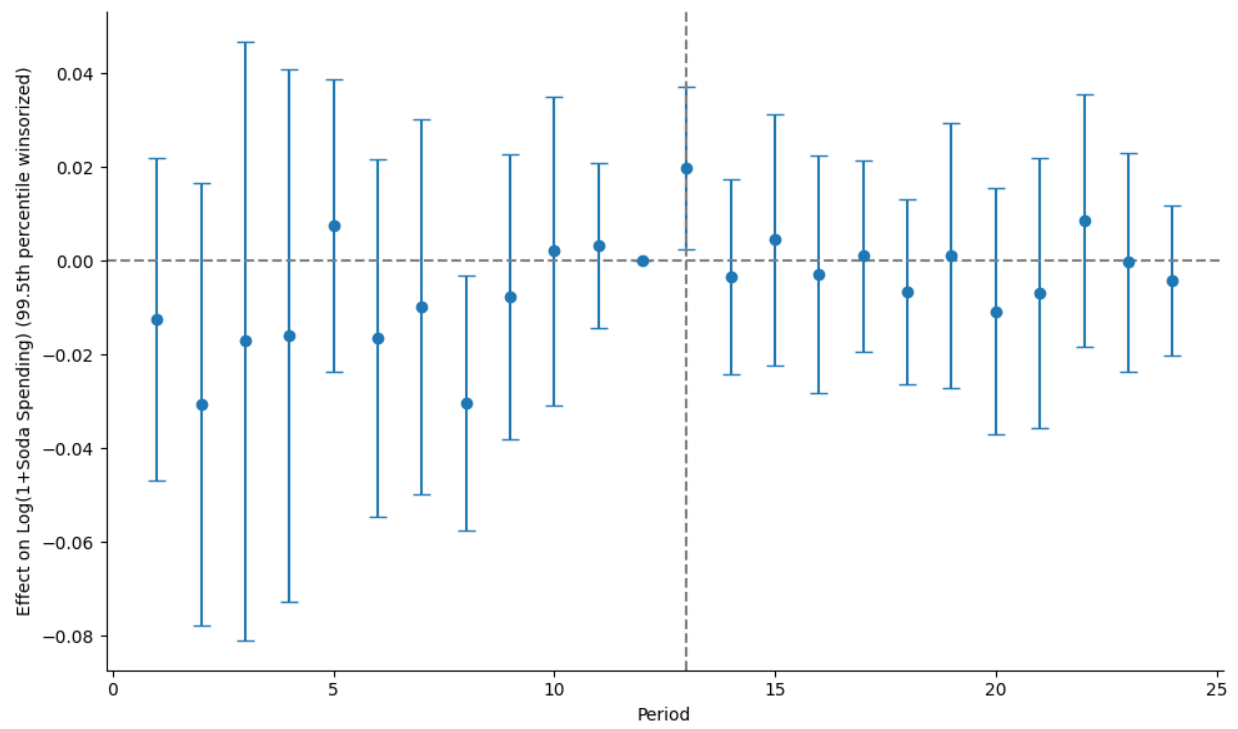
(a) level

(b) log

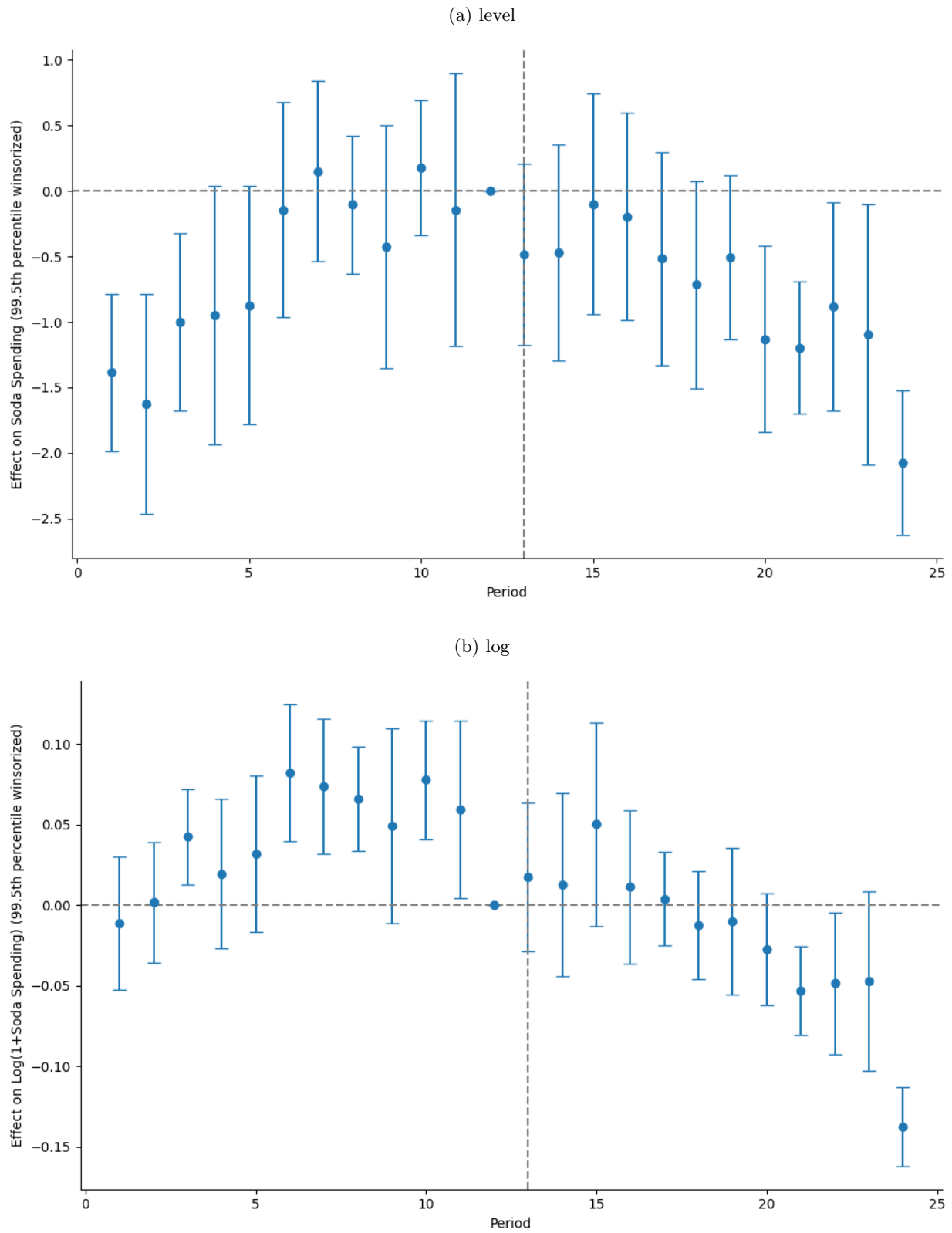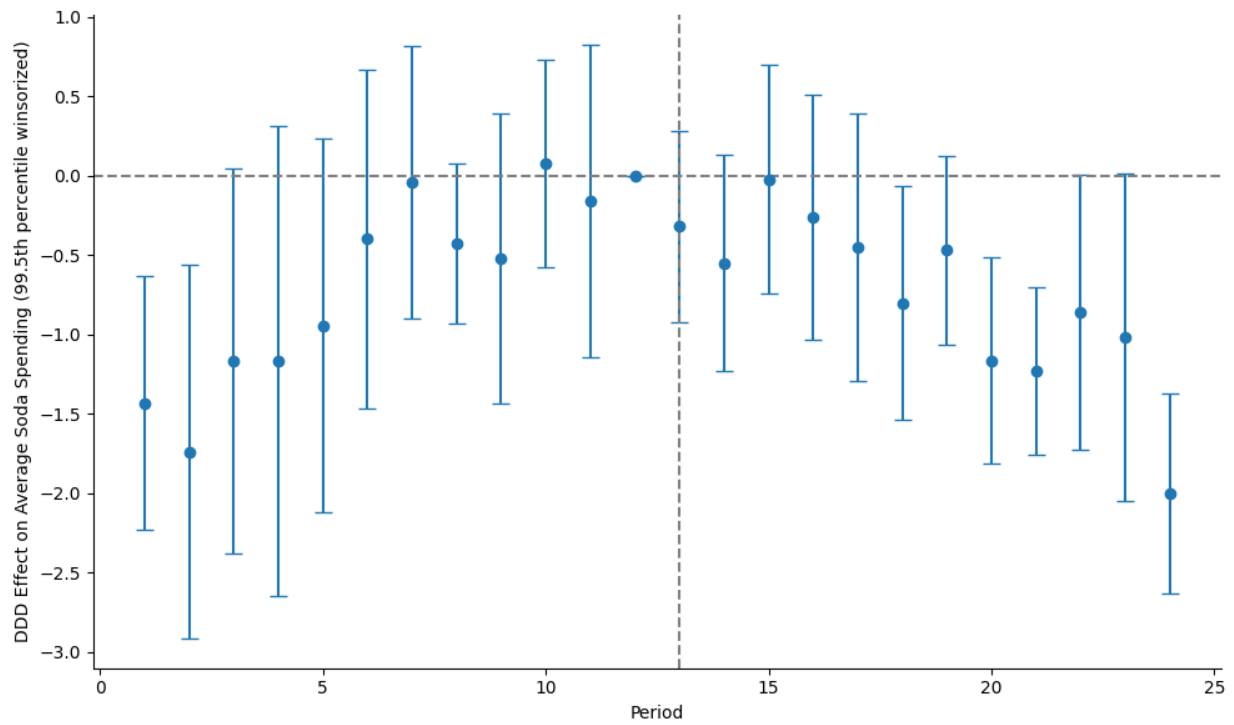Figure 12: Event Study - TWFE (Treatment Assignment = SNAP/Non-SNAP) within treated states

(a) level

(b) log

Figure 13: Event Study - DDD

(a) level

(b) log
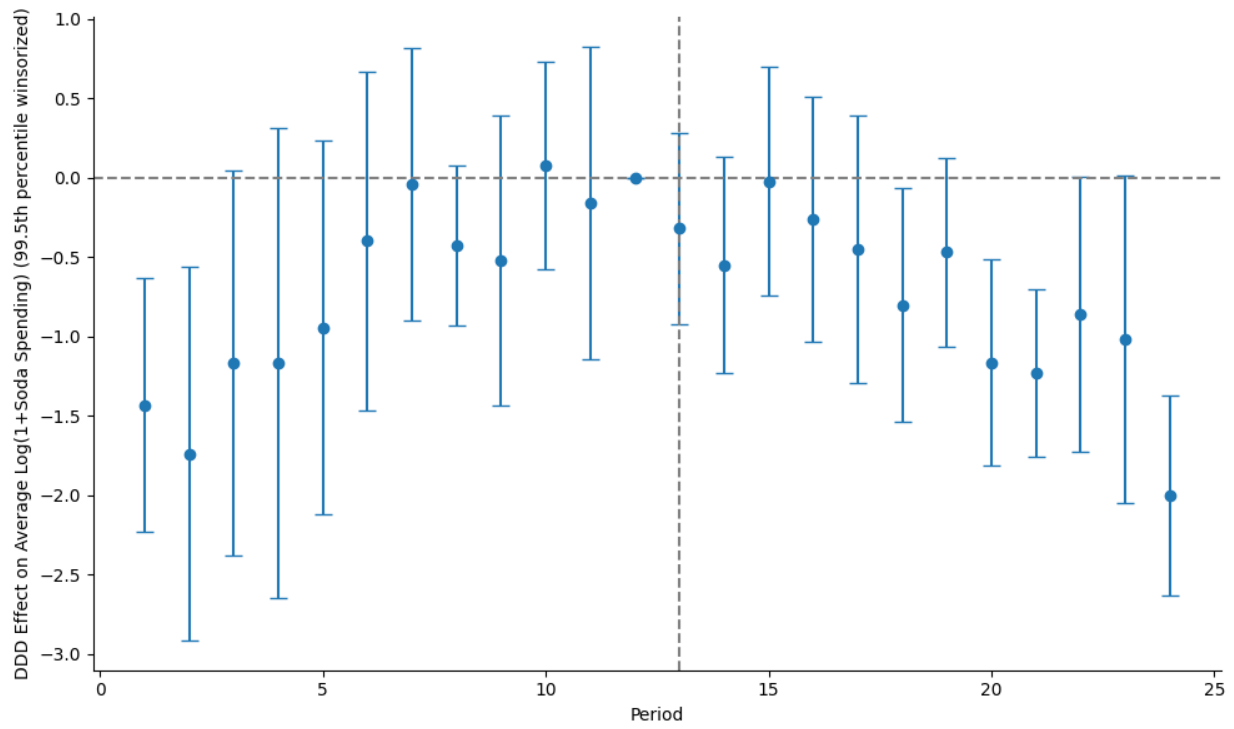
Table 1: Model Estimates

Term	TWFE	TWFE Log	TWFE	TWFE Log (SNAP)	DDD	DDD Log
Post	1.5306***	0.0928***	1.7203***	0.1104***	1.5717***	0.0966***
	(0.1255)	(0.0068)	(0.2176)	(0.0112)	(0.1076)	(0.0059)
State × Post	0.1551	0.0100				
	(0.2711)	(0.0137)				
SNAP × Post			-0.2801	-0.0609***		
			(0.2158)	(0.0064)		
State × SNAP × Post					-0.1315	-0.0472***
					(0.3863)	(0.0142)
N	2,944,007	2,944,007	708,748	708,748	2,944,007	2,944,007
R^2	0.0037	0.0021	0.0040	0.0025	0.0037	0.0021
User FE	Yes	Yes	Yes	Yes	Yes	Yes
Period FE	No	No	No	No	No	No
SE Cluster	state	state	state	state	state	state