Tax Credits and Household Vehicle Spending

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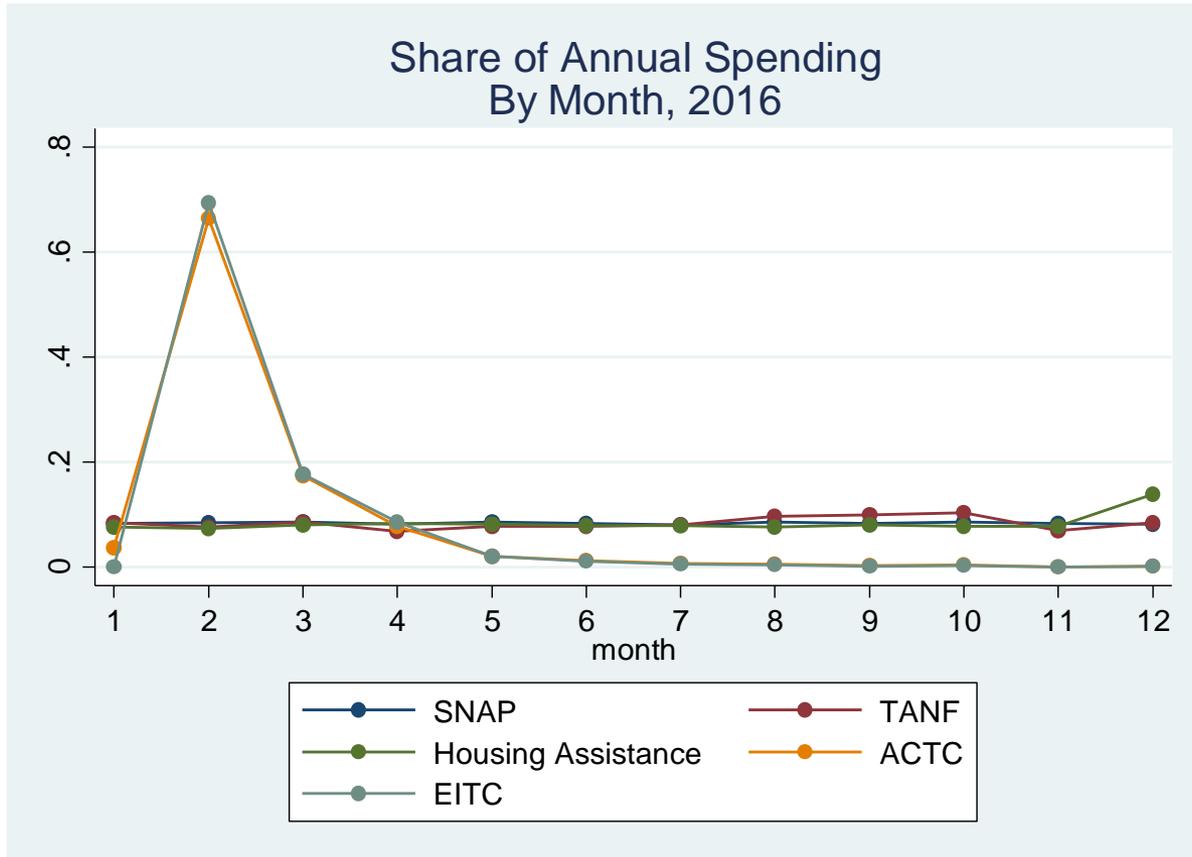Senior Economist and Research Advisor Federal Reserve Bank of Chicago

What Are Tax Credits

- Earned Income Tax Credit (EITC)
  - Refundable tax credit
    - Administered by the IRS / through the tax code
    - Paid out as part of annual tax refund in year subsequent to year of eligibility
  - Since 1975
  - Matches earnings of low income families
  - More generous to families with (more) kids
- Additional Child Tax Credit
  - Refunds a portion of unused Child Tax Credit to low income households
  - Refundability since 2001.   (CTC enacted in 1997)
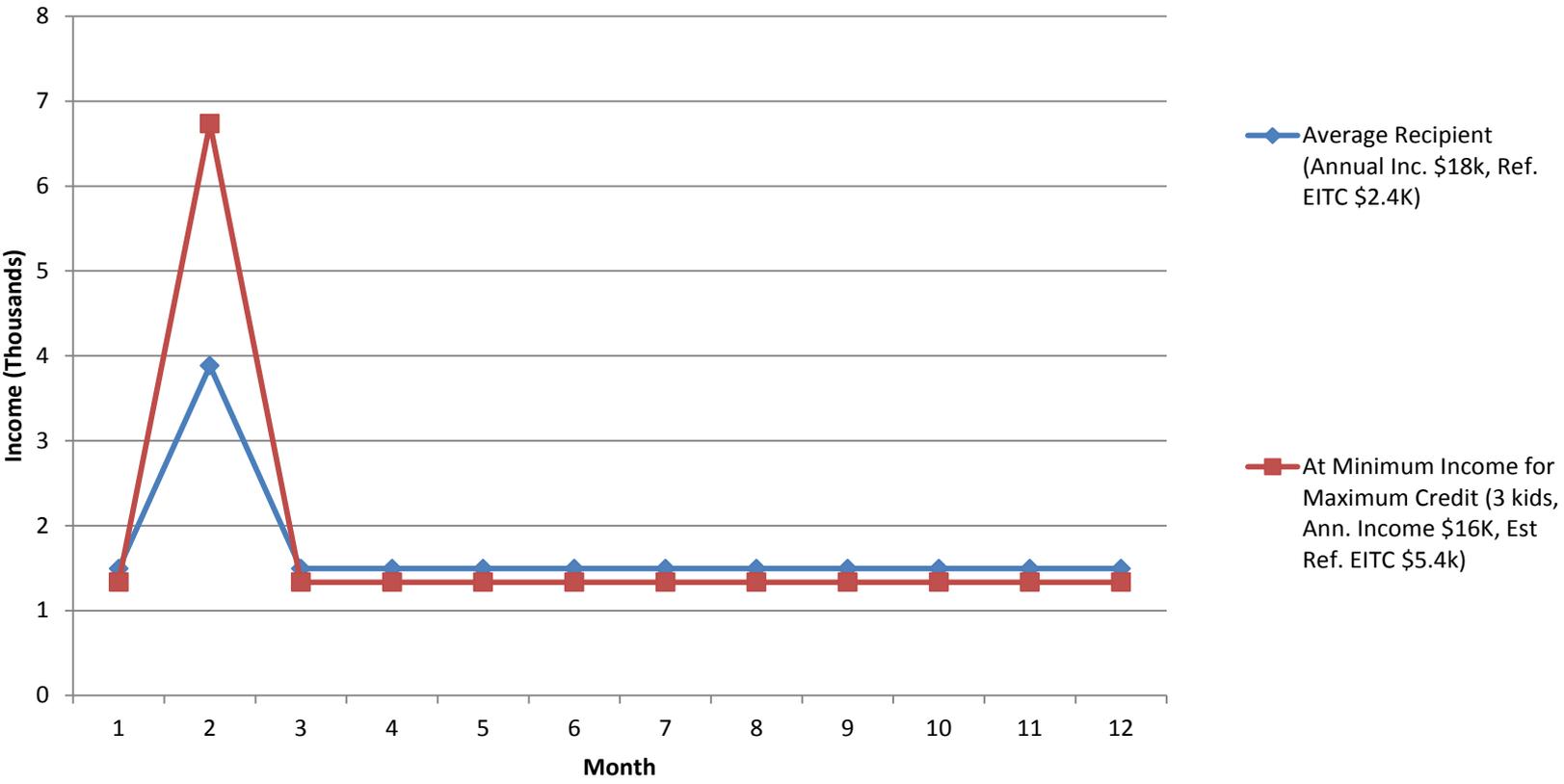
Growing Importance of Refundable Tax Credits

Federal Spending on Means Tested Non-Medical Programs (2016$)
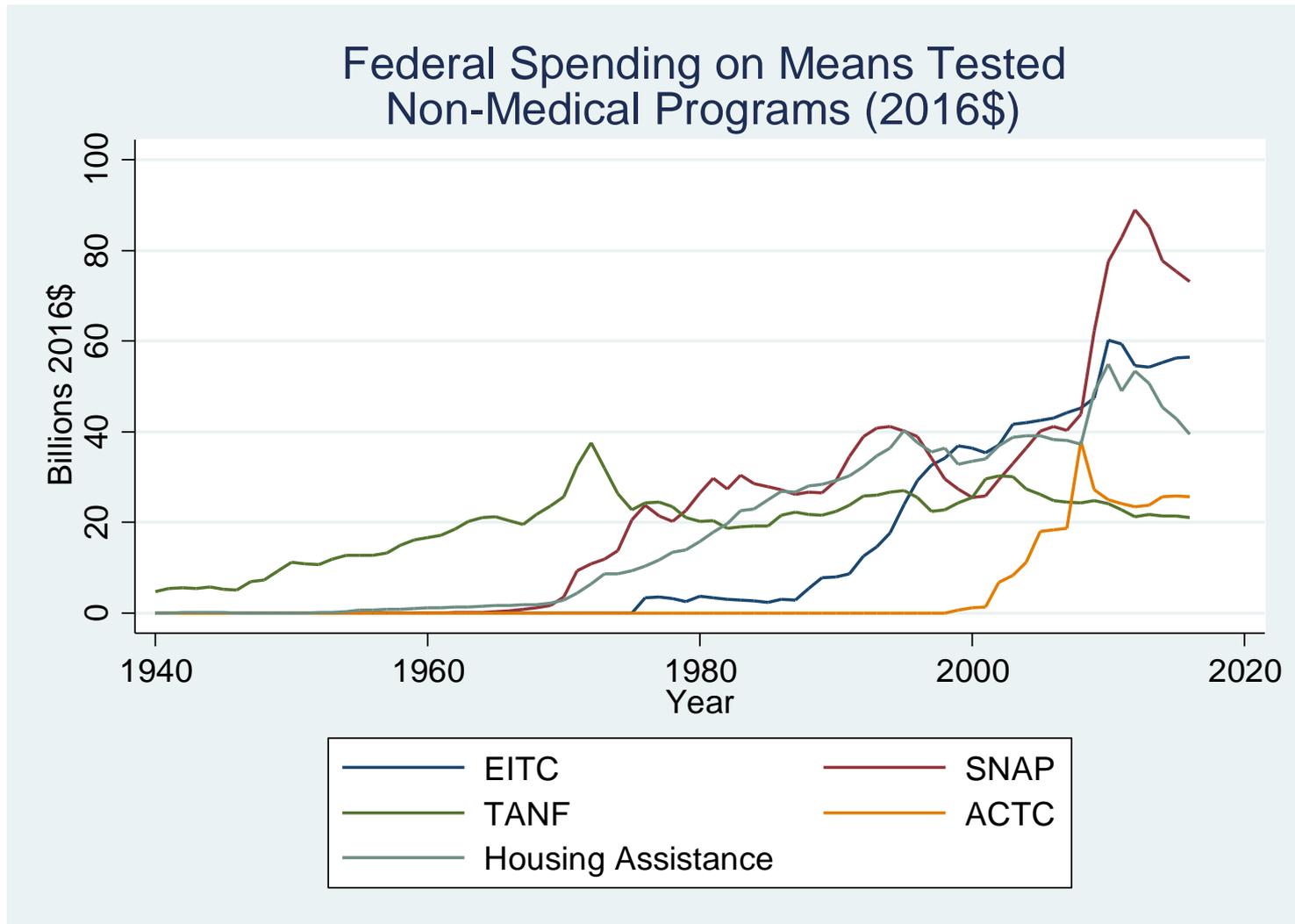
Unique Timing of Tax Credits

Share of Annual Spending By Month, 2016

Huge Spike in Income

Monthly Income, February EITC Recipient

What Do People Do With Tax Credit Refunds?

- Questionnaires
  - **pay bills and loans (#1)**
  - improve access to transportation
  - purchase consumer durables
  - Purchase non-durables
  - establish savings and build assets
  - engage in leisure activities
  - make human capital investments

What Do People Do With Refunds?

What Happens to Debt?

- Previous Research
  - Total debt seems to go up.
  - Past due debt falls
  - Credit card debt and car debt increase
  - Why?
- This paper
  - Deeper dive at cars
  - Why cars?

COME WITH YOUR W-2 AND LEAVE WITH YOUR NEW CAR.

LET US DO YOUR TAXES!
BRING IN YOUR W-2. LEAVE WITH A NEW CAR!
CAR PROS WILL FILE YOUR TAXES FOR YOU AND GIVE YOU YOUR REFUND TOWARD A NEW CAR

TAX RETURNED
How You Can Use Your Income Tax Refund to Get a New Car
75% OF TAX RETURNS → MORE THAN 100 MILLION
Result in refunds averaging around $2,651 in 2013

KEITH WHITE Ford — CLICK FOR SPECIAL SALE PRICES
TAX TIME IS CAR TIME
Get More for Your Refund!

SHOULD I USE MY TAX RETURN?
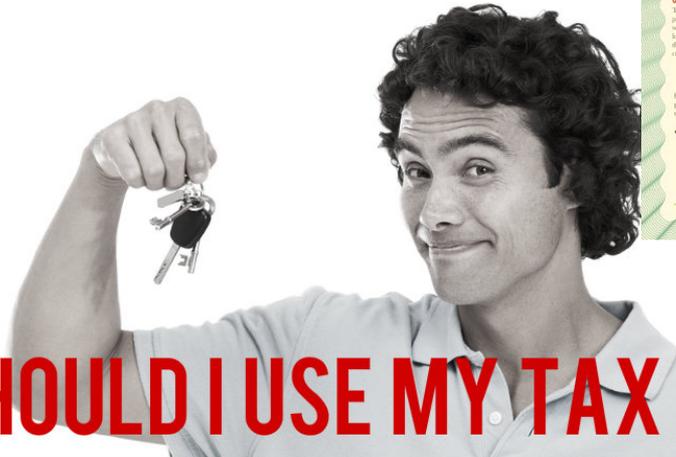
Two Data Sets

- **New York Fed Consumer Credit Panel / Equifax (CCP)**
  - **Quarterly random sample of information from credit reports. Aggregate to zip code**
  - **Zip code level EITC/ACTC from IRS**
  - **Is the first quarter different?**
- Consumer Expenditure Survey
  - Monthly data on consumer spending
  - Imputed EITC based on income and family information
  - Is February different?

Change in Vehicle Debt, by Age of Debt

New Debt Issued in Quarter
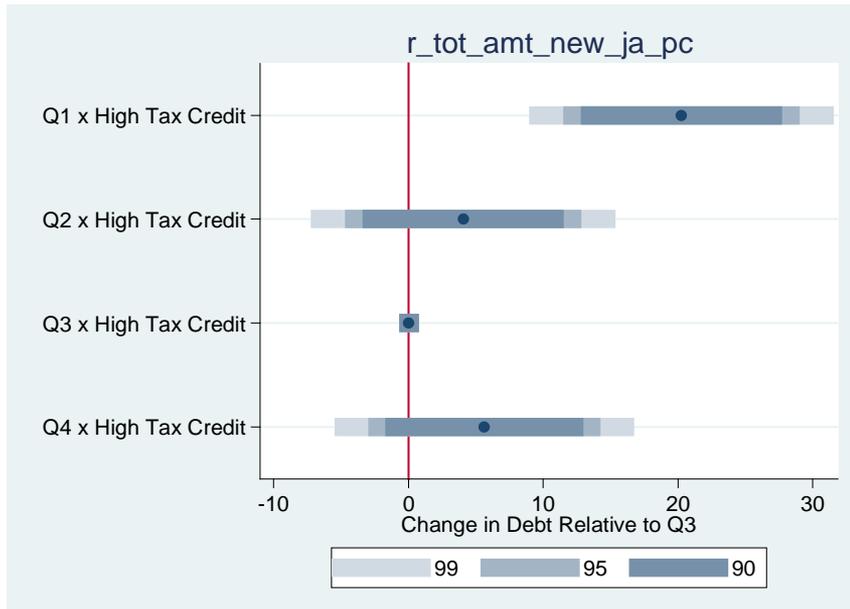
Change in Old Debt
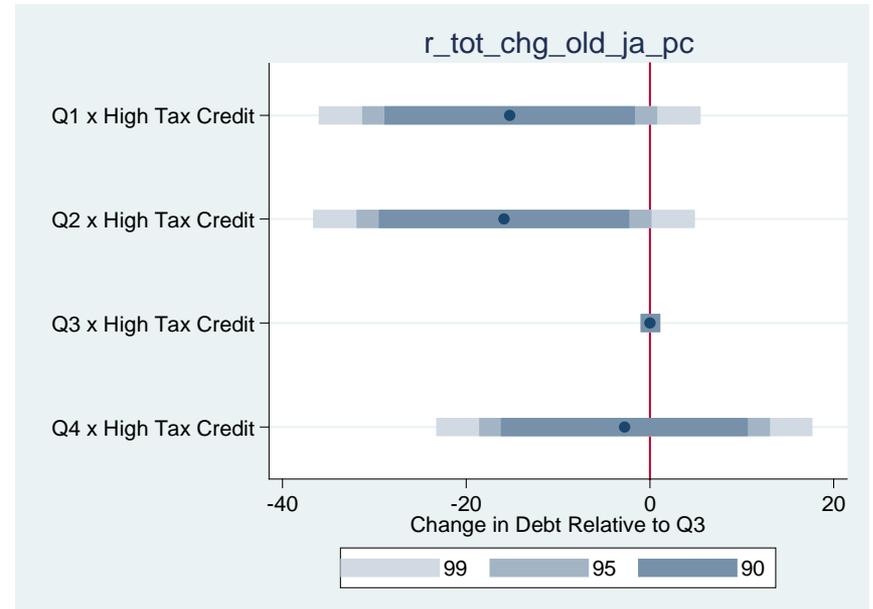
Change in Vehicle Debt, By Payment Status

Debt that is paid as due
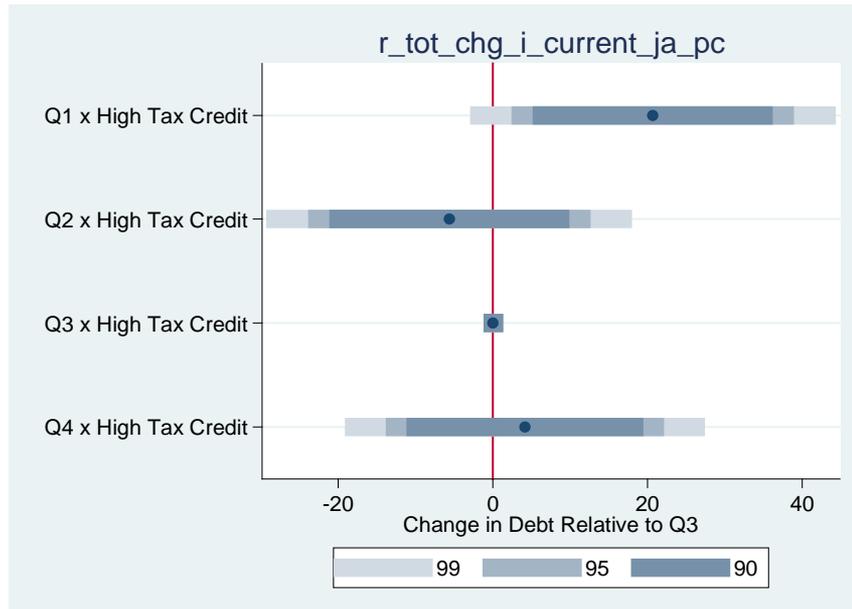
Debt that is past due
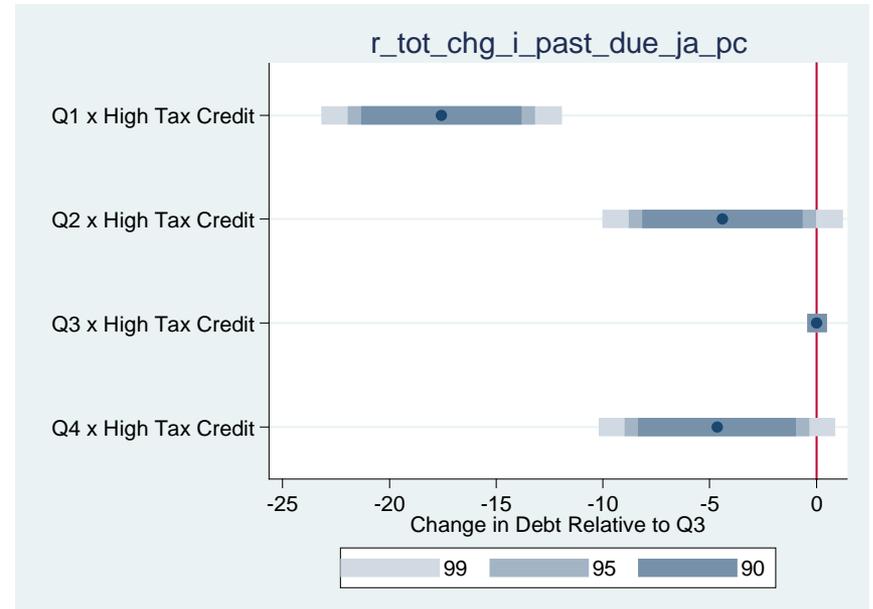
Spending relative to October

New Car Purchases
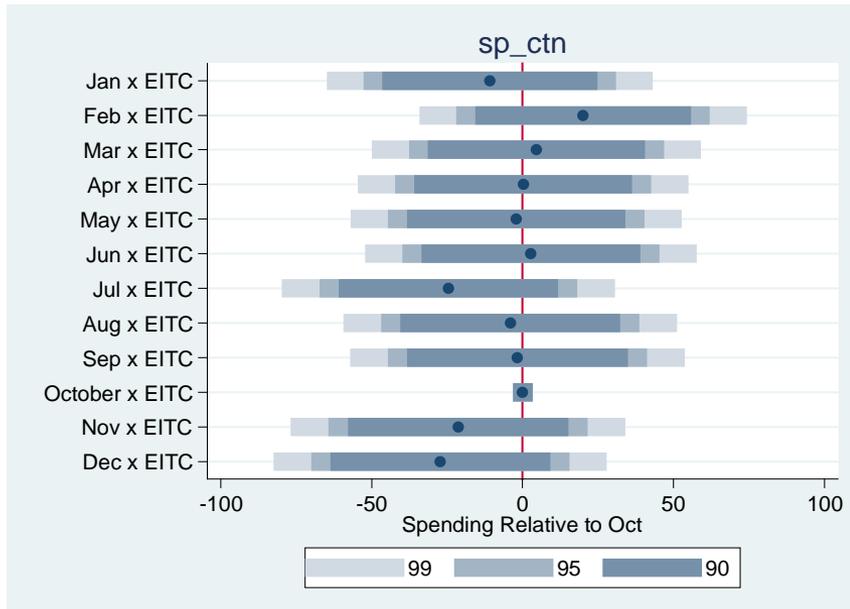
Used Cars and Trucks
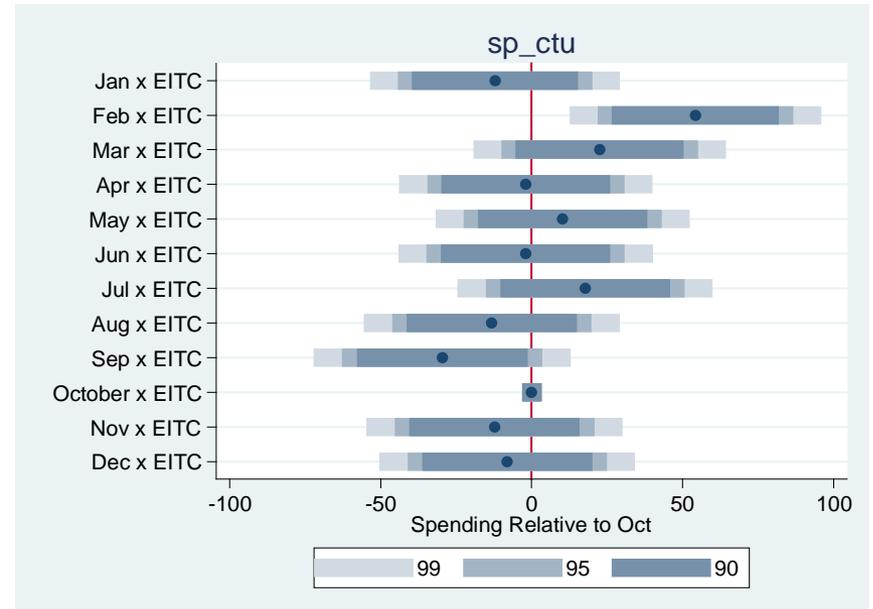
Spending Relative to October

Maintenance and Repairs
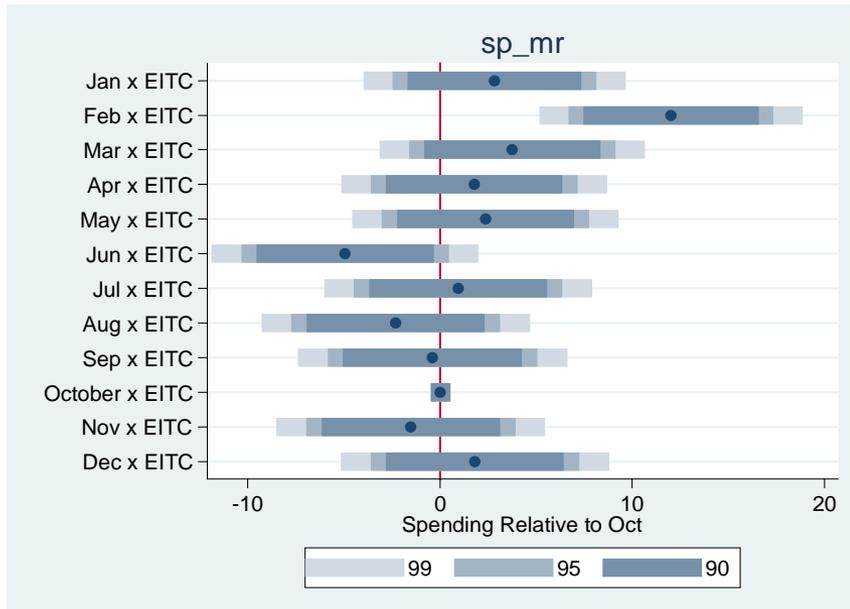
Vehicle Insurance
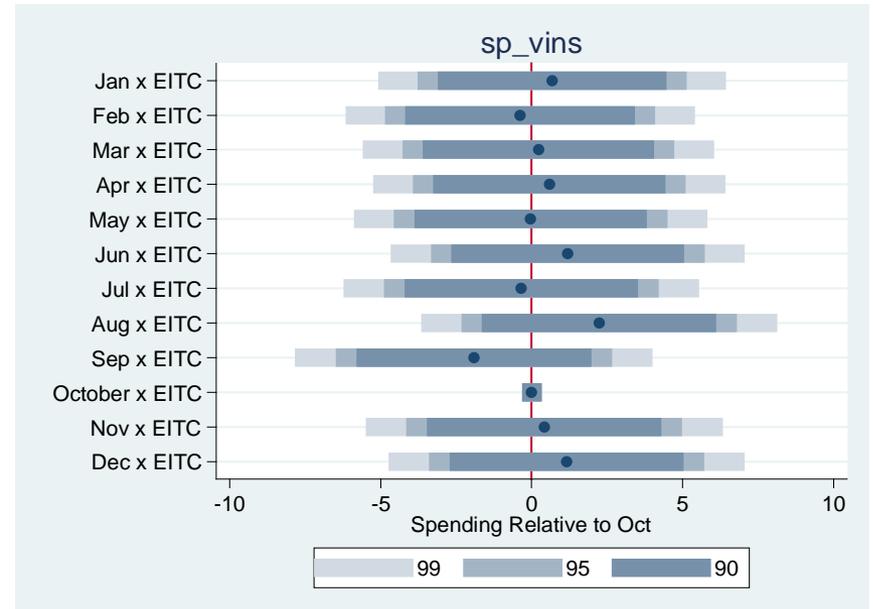
Conclusions

- ## What do households do?
  - Buy more cars, especially used cars
  - Pay off past due car debt
  - Spend more on maintenance and repairs
- ## What does this mean?
  - Cars are crucial for work
    - Low income families need cars.
    - ¾ of Americans commute to work alone in a car
      - 91% commute by car in Northeast Ohio, 88% in Cuyahoga (FRB-Cleveland)
  - But are these good loans?
    - Buy Here Pay Here Dealers

CCP Results
High Tax Credit Zip Code Dummies

VARIABLES	(1) Car Debt Balance (Additional/Old)	(2) Debt for Additional Cars	(3) Debt for Pre-Existing Cars	(4) Car Debt Balance (Payment Status)	(5) Debt that is Current	(6) Debt that is Past Due	(7) Number of Additional Cars
Q1 x High Tax Credit	32.25***	30.77***	1.481	32.88***	57.37***	-24.49***	0.00176***
	(7.740)	(5.061)	(6.372)	(7.429)	(7.345)	(2.951)	(0.000196)
Q2 x High Tax Credit	3.999	5.047	-1.048	20.87***	27.55***	-6.678**	0.000193
	(7.740)	(5.061)	(6.372)	(7.429)	(7.345)	(2.951)	(0.000196)
Q4 x High Tax Credit	12.20	7.899	4.302	15.55**	19.66***	-4.107	0.000625***
	(7.614)	(4.978)	(6.269)	(7.308)	(7.225)	(2.903)	(0.000193)
Observations	1,137,514	1,137,514	1,137,514	1,137,514	1,137,514	1,137,514	1,137,514
R-squared	0.007	0.063	0.038	0.006	0.005	0.001	0.076
Q1 Effect/ Standard Deviat	0.0375	0.0510	0.00210	0.0391	0.0659	-0.0723	0.0680
Standard errors in parentheses							
*** p<0.01, ** p<0.05, * p<0.1							

CCP Results
Estimated Tax Credit Amounts

VARIABLES	(1) Car Debt Balance (Additional/Old)	(2) Debt for Additional Cars	(3) Debt for Pre-Existing Cars	(4) Car Debt Balance (Payment Status)	(5) Debt that is Current	(6) Debt that is Past Due	(7) Number of Additional Cars
Per Capita Estimated Quarterly Tax Credit	0.0364	0.119***	-0.0830***	-0.0816***	0.0481*	-0.130***	5.54e-06***
	(0.0303)	(0.0195)	(0.0253)	(0.0292)	(0.0287)	(0.0116)	(7.49e-07)
Observations	990,738	990,738	990,738	990,738	990,738	990,738	990,738
R-squared	0.008	0.064	0.036	0.007	0.006	0.002	0.079
Standard errors in parenth							
*** p<0.01, ** p<0.05, * p<0.1							

CEX Results - Discrete

VARIABLES	(1) New Cars and Trucks	(2) Used Cars and Trucks	(3) Maintenance and Repairs	(4) Vehicle Insurance	(5) Registrations/License
Jan x EITC	-10.88	-12.13	2.837	0.682	1.449
	(19.76)	(14.89)	(2.461)	(2.116)	(1.797)
Feb x EITC	**20.05**	**54.25***	**12.03***	**-0.378**	**1.585**
	(19.86)	**(14.96)**	**(2.473)**	**(2.127)**	**(1.806)**
Mar x EITC	4.579	22.53	3.763	0.226	1.082
	(19.99)	(15.06)	(2.489)	(2.140)	(1.818)
Apr x EITC	0.235	-1.919	1.779	0.586	0.530
	(20.07)	(15.11)	(2.499)	(2.149)	(1.825)
May x EITC	-2.135	10.29	2.371	-0.0330	-1.378
	(20.11)	(15.15)	(2.505)	(2.154)	(1.829)
Jun x EITC	2.735	-2.001	-4.937**	1.196	-1.439
	(20.15)	(15.18)	(2.509)	(2.158)	(1.833)
Jul x EITC	-24.59	17.69	0.942	-0.346	-1.757
	(20.22)	(15.23)	(2.518)	(2.165)	(1.839)
Aug x EITC	-4.100	-13.26	-2.301	2.233	-1.227
	(20.27)	(15.27)	(2.524)	(2.171)	(1.844)
Sep x EITC	-1.709	-29.62*	-0.392	-1.915	-1.173
	(20.36)	(15.33)	(2.535)	(2.180)	(1.851)
Nov x EITC	-21.39	-12.33	-1.518	0.415	1.099
	(20.32)	(15.31)	(2.531)	(2.176)	(1.848)
Dec x EITC	-27.28	-8.076	1.819	1.159	2.127
	(20.25)	(15.25)	(2.521)	(2.168)	(1.841)
Observations	1,542,646	1,542,646	1,542,646	1,542,646	1,542,646
R-squared	0.003	0.002	0.013	0.025	0.029
Standard errors in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

CEX Results - Continuous

VARIABLES	(1) New Cars and Trucks	(2) Used Cars and Trucks	(3) Maintenance and Repairs	(4) Vehicle Insurance	(5) Registrations/License
Monthly EITC Dollars	$0.00	$0.04***	$0.005***	`-$0.003***	`$-0.001
	(0.00953)	(0.00718)	(0.00119)	(0.00102)	(0.000868)
Observations	1,536,272	1,536,272	1,536,272	1,536,272	1,536,272
R-squared	0.003	0.002	0.013	0.025	0.029
Standard errors in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					