

Tax Credits and Household Vehicle Spending

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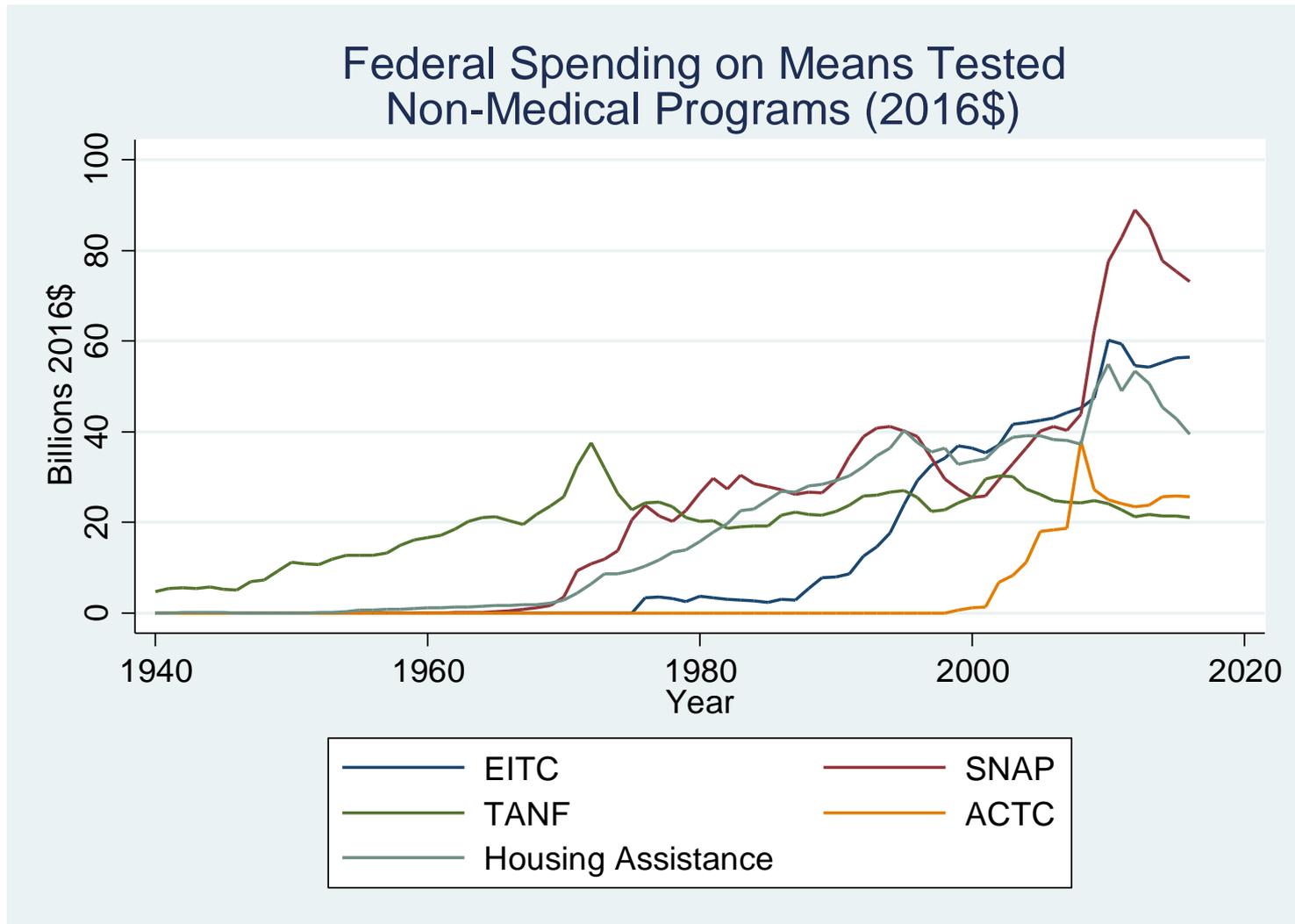
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This presentation represents my own views and not the views of the Federal Reserve Bank of Chicago, or of the Federal Reserve System.

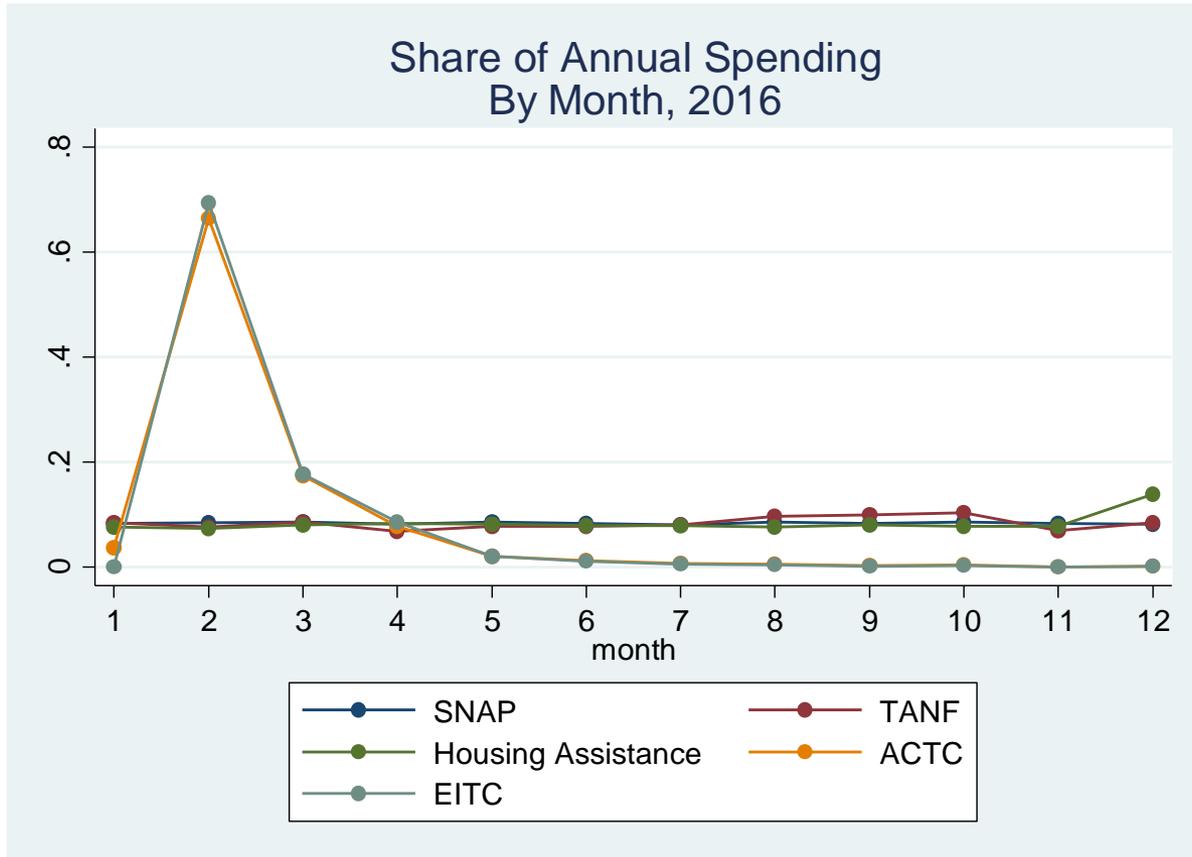
What Are Tax Credits

- 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

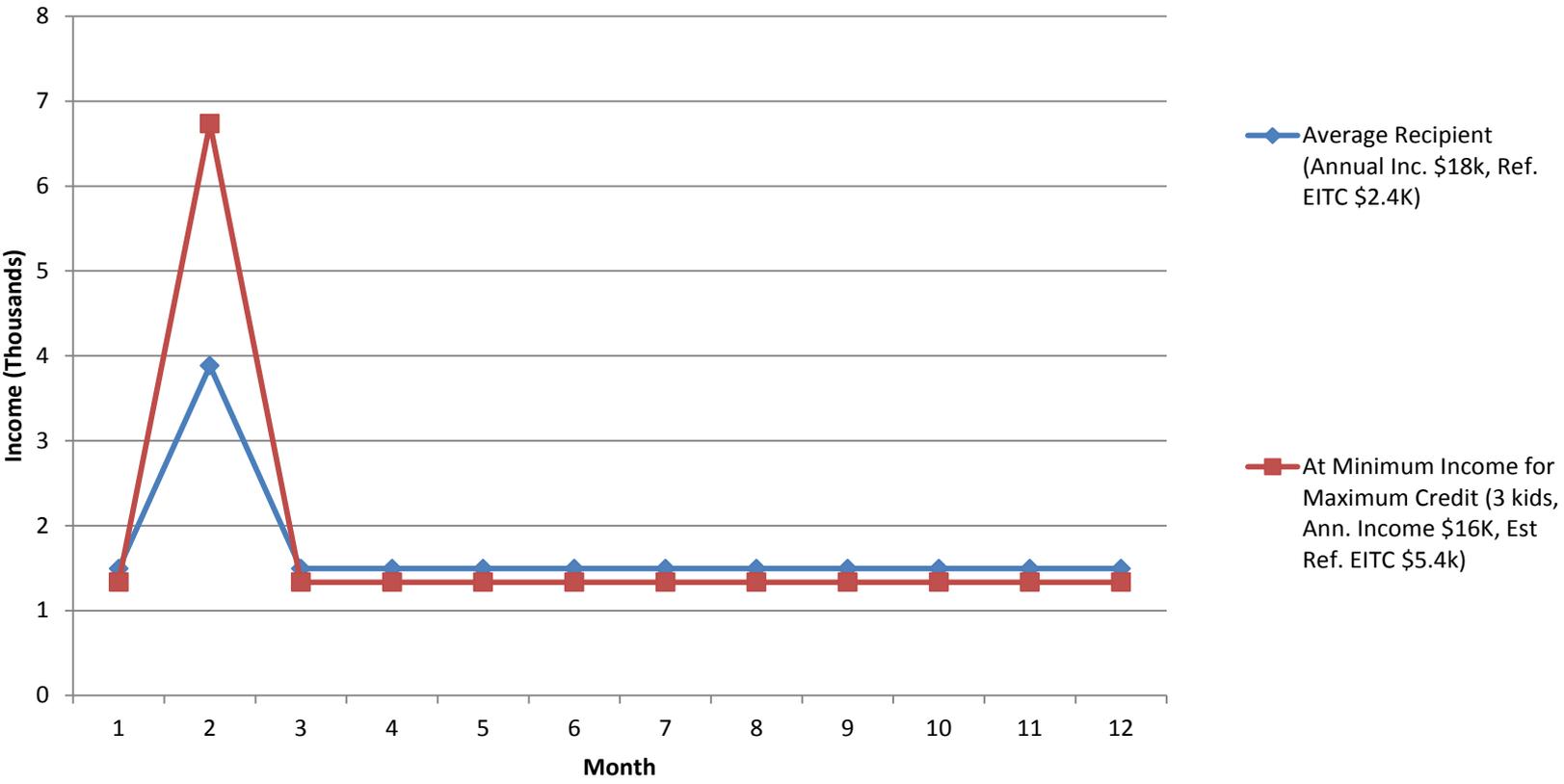


Unique Timing of Tax Credits



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?



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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 \$ 100 MILLION
Result in refunds averaging around **\$2,651** in 2013
—according to Taxman.org/Refunds.com

WHAT IF YOU APPLIED PART OR ALL OF THAT REFUND TOWARD THE PURCHASE OF A NEW OR USED VEHICLE?

HERE'S HOW:

- GET THE CHECK FROM UNCLE SAM**
Obviously, this is where it all started! If you go the route of using the amount of your tax refund will help to determine what happens in the following steps:
- CALCULATE WHAT YOU CAN AFFORD**
Using online auto loan calculators, determine how much value to your car allow to purchase. Or, as Uncle Sam likes to say, "Let your budget do the talking!"
- DOWN PAYMENT OR MONTHLY PAYMENTS?**
Of the money you would be able contribute applying your refund to the down payment (including monthly payments) or using it to cover monthly payments.
- IDENTIFY DESIRED (AFFORDABLE) VEHICLES**
There's time to identify the vehicles to consider in your budget: SUV or truck, economy or luxury, basic model or loaded with options.

DRIVE AWAY WITH YOUR NEW CAR
Finally, you're ready to drive off the lot with your new car!

VISIT YOUR DEALERSHIP OF CHOICE
This should include the preferred dealer associated with your RoadLoans.com loan package. We are confident that dealer will provide you the best customer experience.

ARRANGE FINANCING TAX REFUND IN HAND
Get approved through RoadLoans.com or other lender before you visit the dealership. This puts you in the same position as a cash buyer, with KBB, ready to purchase upon arrival.

IF YOU NEED FAST-AND-EASY VEHICLE FINANCING FOR A USED OR NEW CAR, CROSSOVER, PICKUP OR SUV, WWW.ROADLOANS.COM EMPOWERS YOU TO SHOP WITH CONFIDENCE.

RoadLoans.com
RoadLoans.com is the preferred lender of Kelley Blue Book, www.kbb.com

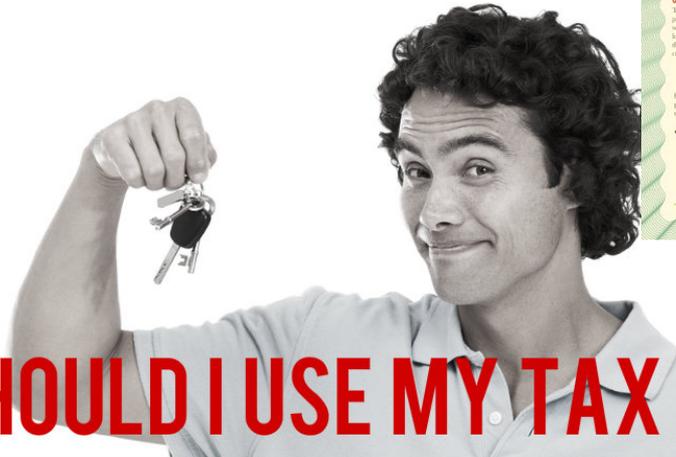
KEITH WHITE **CLICK FOR SPECIAL SALE PRICES**

TAX TIME IS CAR TIME

Get More for Your Refund!



SHOULD I USE MY TAX RETURN?

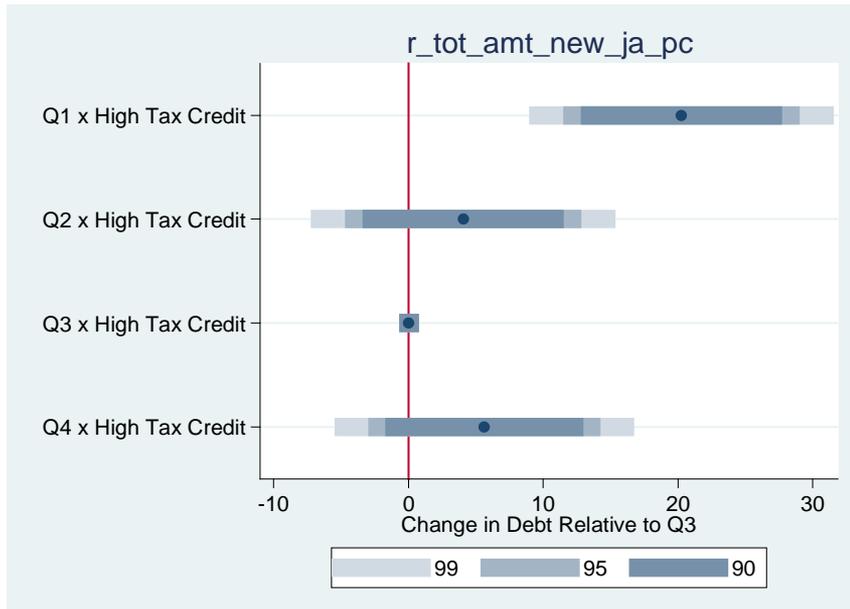


Two Data Sets

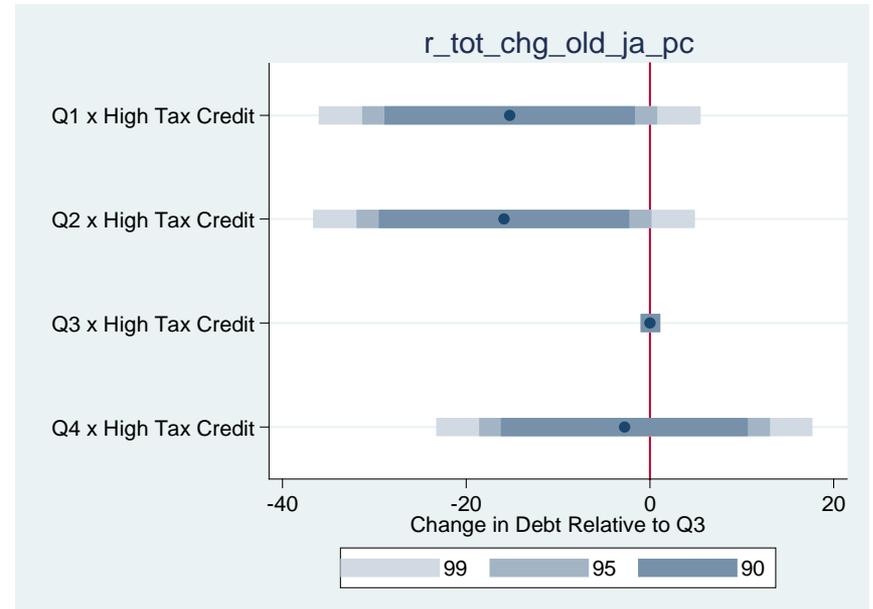
- [New York Fed Consumer Credit Panel / Equifax \(CCP\)](#)
 - Quarterly random sample of information from credit reports. Aggregate to zip code
 - Zip code level EITC/ACTC from IRS
 - Is the first quarter different?
- Consumer Expenditure Survey
 - Monthly data on consumer spending
 - Imputed EITC based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

Change in Vehicle Debt, by Age of Debt

New Debt Issued in Quarter

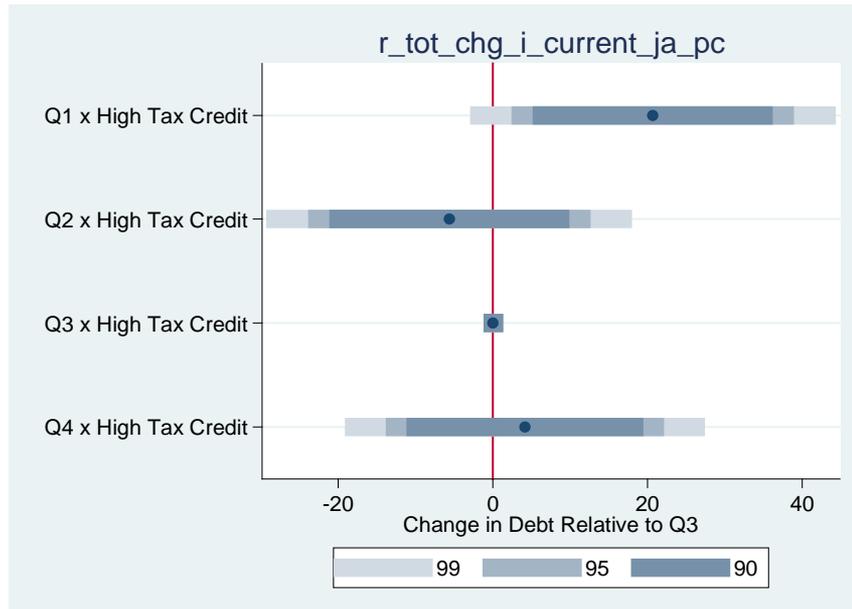


Change in Old Debt

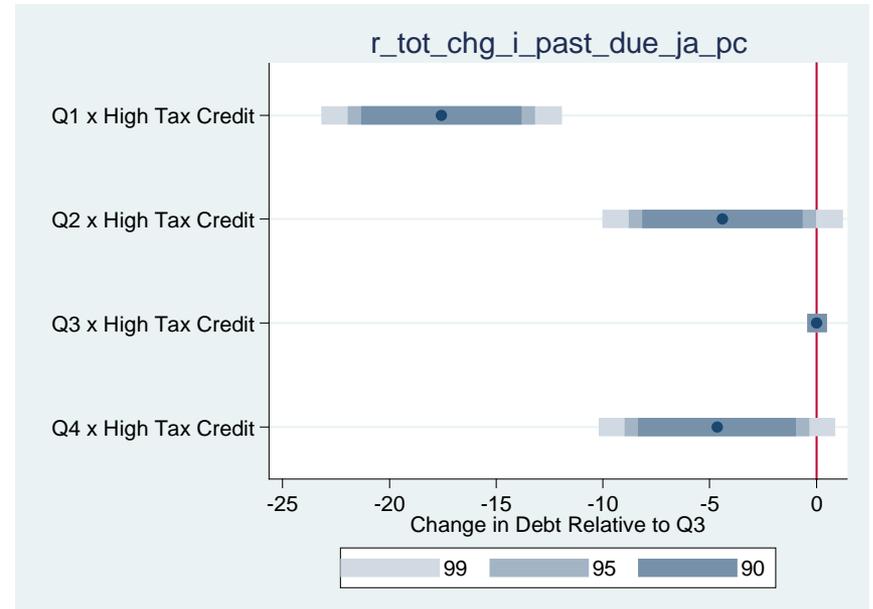


Change in Vehicle Debt, By Payment Status

Debt that is paid as due

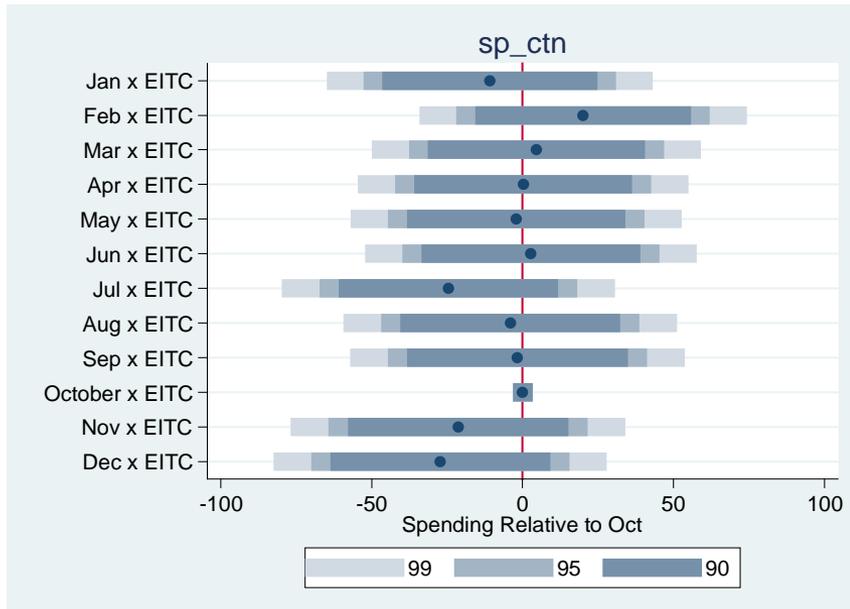


Debt that is past due

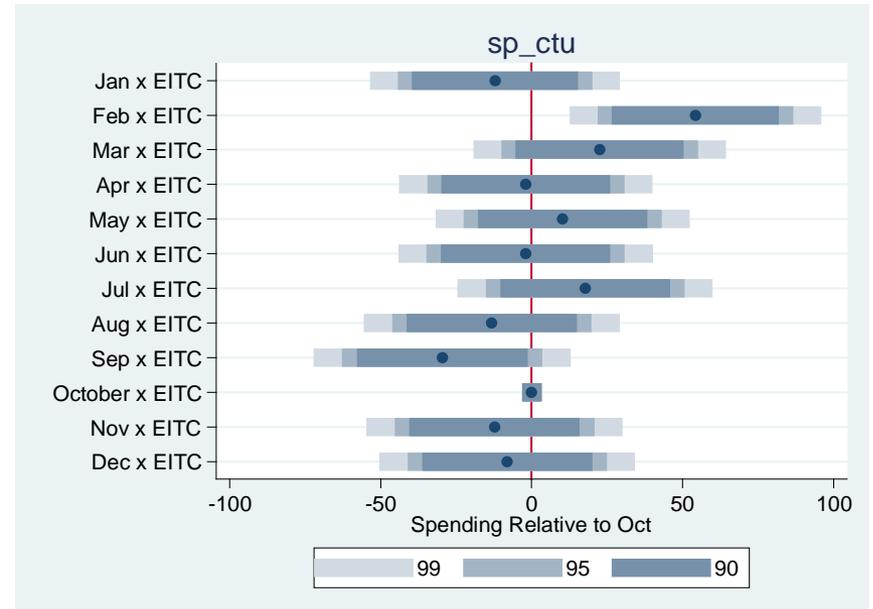


Spending relative to October

New Car Purchases

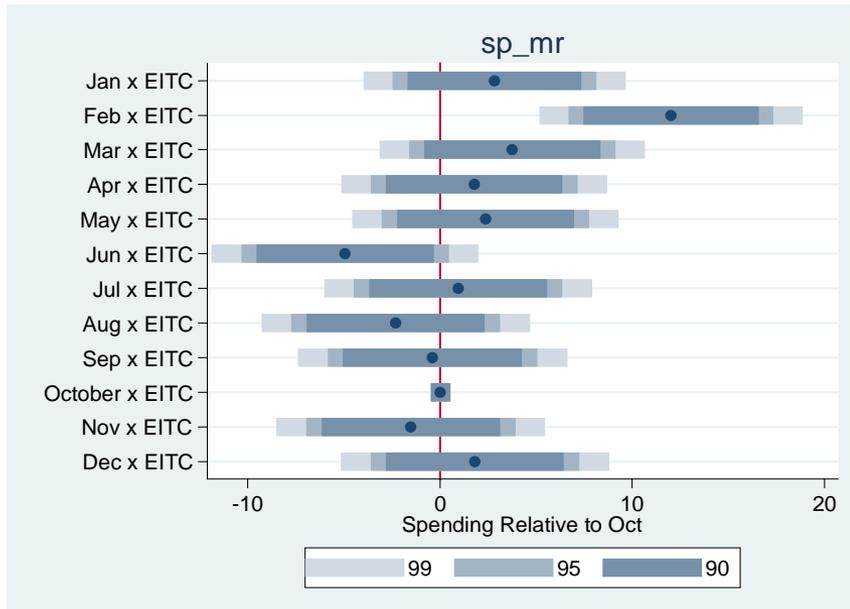


Used Cars and Trucks

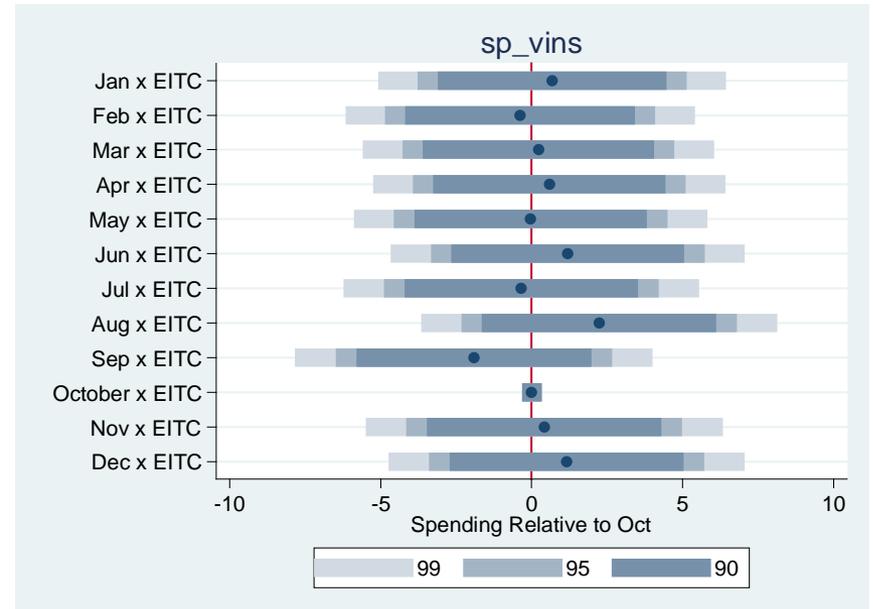


Spending Relative to October

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.
 - $\frac{3}{4}$ 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

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	Car Debt Balance (Additional/Old)	Debt for Additional Cars	Debt for Pre- Existing Cars	Car Debt Balance (Payment Status)	Debt that is Current	Debt that is Past Due	Number of Additional Cars
Q1 x High Tax Credit	32.25*** (7.740)	30.77*** (5.061)	1.481 (6.372)	32.88*** (7.429)	57.37*** (7.345)	-24.49*** (2.951)	0.00176*** (0.000196)
Q2 x High Tax Credit	3.999 (7.740)	5.047 (5.061)	-1.048 (6.372)	20.87*** (7.429)	27.55*** (7.345)	-6.678** (2.951)	0.000193 (0.000196)
Q4 x High Tax Credit	12.20 (7.614)	7.899 (4.978)	4.302 (6.269)	15.55** (7.308)	19.66*** (7.225)	-4.107 (2.903)	0.000625*** (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 Devial	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

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	Car Debt Balance (Additional/Old)	Debt for Additional Cars	Debt for Pre- Existing Cars	Car Debt Balance (Payment Status)	Debt that is Current	Debt that is Past Due	Number of Additional Cars
Per Capita Estimated Quarterly Tax Credit	0.0364 (0.0303)	0.119*** (0.0195)	-0.0830*** (0.0253)	-0.0816*** (0.0292)	0.0481* (0.0287)	-0.130*** (0.0116)	5.54e-06*** (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 parenthesis							
*** p<0.01, ** p<0.05, * p<0.1							

CEX Results - Discrete

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

	(1)	(2)	(3)	(4)	(5)
VARIABLES	New Cars and Trucks	Used Cars and Trucks	Maintenance and Repairs	Vehicle Insurance	Registrations/License
Monthly EITC Dollars	\$0.00 (0.00953)	\$0.04*** (0.00718)	\$0.005*** (0.00119)	-\$0.003*** (0.00102)	-\$0.001 (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					