The Great Recession and Expenditures of Recent College Graduates: Evidence from the 1999-2019 Consumer Expenditure Surveys

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Introduction

- The Great Recession of 2007-2009 caused a financial crisis mainly resulting from the burst of the U.S housing bubble
- Recent college graduates specifically bore a large burden of the recession due to the rise in unemployment rates impacting their financial well-being
- Due to their underemployment, changes to the saving and spending patterns of recent college graduates are expected

Research Question

- Did the expenditures of recent college graduates change because of the Great Recession of 2007-2009?
 - Total expenditures and 15 specific expenditure categories are analyzed
- Using a large, nationally representative survey dataset ranging over 20 years allows for a valid comparison across 16 expenditure categories

Background

- A recession is a period when an economy grows more slowly or shrinks, usually in two consecutive quarters of economic slowdown or contraction (OECD)
- The Great Recession started in 2007 when severe pressure began building in the subprime securities market and ended in 2009 with a federal stimulus package (OECD)
- Total employment in the US decreased by 7 million jobs or 5.3% by the end of the recession (Fogg Harrington 2011)
- College educated young adults had a 4% drop-in employment rate from 2000 to 2007, and then an additional 8% drop by 2010 (Fogg Harrington 2011)

Literature Review

- Young adults save more if their family's socioeconomic status, education level, and amount of savings are all high (Friedline Elliot 2011)
- Expenditures increased or decreased with level of education and income and the relative share of how a consumer spent money differed by level of education. (Foster 2014)
- One in four college graduates took a job they were not enthusiastic about to save money to pay student loans during the Great Recession (Stone Van Horn Zukin 2012)



Data

1999-2019

- Individual level panel data on consumer expenditure and demographic information from the Bureau of Labor Statistics Consumer Expenditure Interview Survey (CE)
- Unemployment Data from the Bureau of Labor Statistics
- College graduates (Bachelor's degree) and the reference group are high school graduates
- Age range is 22-32
- Sample size is 7,554
- Consumer Unit- people living at one address and share living expenses
- Reference Person- it is with respect to this person that the relationship of the other consumer unit members is determined

Variables

- Dependent Variables
 - Total Expenditures, Food, Alcohol, Housing, Apparel, Transportation, Health Care, Entertainment, Personal Care, Reading, Education, Tobacco, Cash Contributions, Life Insurance, Retirement and Pensions, and Miscellaneous
- Key Independent Variables
 - Recession, Education, Interaction
- Controls
 - Age, Gender, Race, Marital Status, Family Size, Salary, Urban, Region, Unemployment Rate

Unemployment Rate



Recession Definition for Regression Models

- First tried using the years 2008-2009 to represent the recession
- Expenditures are affected by labor income
- The unemployment rate was comparable to the pre-recession rate in 2016
 - 2007 unemployment rate = 4.6
 - 2016 unemployment rate = 4.9
- Therefore, the recession impact is from 2008-2016

Summary Statistics

Variable	Mean	Std. Dev.	Min	Max	
Total Expenditures	25440.457	24034.978	24.67	326521.44	
Food	3757.124	2801.588	0	39267.84	
Alcohol	313.88	706.495	0	18039.258	
Housing	8890.849	7935.438	0	196899.08	
Apparel	818.2	1835.664	0	70563.938	
Transportation	5248.983	15911.827	0	261978.53	
Entertainment	1161.18	2667.926	0	72277.45	
Health Care	968.411	1866.757	0	37717.238	
Reading	44.408	138.587	0	4140.316	
Education	298.427	2824.042	0	120452.63	
Tobacco	194.368	524.027	0	14452.609	
Personal Care	152.412	265.523	0	4750.58	
Cash Contribution	470.256	2842.706	0	187513.34	
Life Insurance	86.266	388.898	0	7835.614	
Retirement/Pension	2803.022	3420.705	0	64865.258	
Miscellaneous	232.672	2260.426	0	158283.63	

Variable	Mean	Std. Dev.	Min	Max
Recession	.406	.491	0	1
Education	.521	.5	0	1
Interaction	.222	.416	0	1
Age	27.542	3.023	22	32
Gender	.501	.5	0	1
Race: White	.792	.406	0	1
Race: Black	.126	.332	0	1
Race: Asian	.058	.233	0	1
Race: Other	.024	.153	0	1
Married	.423	.494	0	1
Family Size	2.535	1.467	1	12
Salary Missing	.104	.305	0	1
Salary Modified	49045.143	50780.25	0	395599.81
Urban	.947	.224	0	1
Region: Northeast	.17	.376	0	1
Region: Midwest	.238	.426	0	1
Region: South	.343	.475	0	1
Region: West	.241	.428	0	1
Region: Missing	.008	.09	0	1
Unemployment Rate	5.823	1.742	3.7	9.6
N	7 5 5 4			

Methods

- Expenditures = a + β_1 Recession + β_2 Education + β_3 Impact + β_4 Age + β_5 Gender + β_6 Race + β_7 Marital Status + β_8 Family Size + β_9 Salary + β_{10} Urban + β_{11} Region + β_{12} Unemployment Rate + e_i
- Ran models on Total Expenditures and 15 Expenditure categories
- Ran models as OLS, FE, **RE**, and year trend
- Panel data was fixed for time effects

Total Expenditures	Coef.	t-value	p-value				
Recession	-370.006	-0.32	.751				
Education	4752.096***	6.75	0				
Interaction	-881.706	-0.86	.391				
Age	261.983***	2.98	.003				
Gender	1131.011**	2.19	.028				
Race: Black	2902.629***	-3.59	0				
Race: Asian	-1987.301*	-1.81	.07	Mean dependent	25440.457	SD 2 dependent var	24034.978
Race: Other	387.563	0.23	.815	var			
Marital Status	3596.172***	5.88	0	Overall r- squared Chi-square 1627.227	0.178	Number of	7554.000
Family Size	1374.202***	6.41	0		1627 227	Prob > chi2	0.000
Salary: Modified	.163***	28.64	0		1027.227		01000
Salary: Missing	8187.309***	6.78	0	R-squared 0.	0.177	177 R-squared between	0.505
Urban	3182.364***	2.78	.005	within			
Region: Midwest	-1589.064**	-1.98	.048				
Region: South	-1346.122*	-1.78	.075				
Region: West	-454.148	-0.57	.571				
Region: Missing	-4663.861	-1.61	.107				
Unemployment Rate	-78.091	-0.28	.778				
Constant	566.736	0.19	0.851				

Results: RE Total Expenditures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
	Food	Alcohol	Housing	Apparel	Transportation	Health Care	Entertainment	
Recession	401.732***	-14.697	209.609	-373.867***	-1417.362**	270.805***	101.448	
	(3.495)	(5)	(.429)	(-3.654)	(-2.039)	(2.8)	(.889)	
Education	139.562*	62.801***	2069.595***	269.29***	408.38	207.369***	337.284***	
	(1.656)	(2.911)	(8.961)	(4.631)	(.801)	(3.571)	(4.029)	
Interaction	89.684	32.894	-623.426*	-43.686	-15.364	26.42	-214.433*	
	(.728)	(1.043)	(-1.85)	(515)	(021)	(.312)	(-1.752)	
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Observations	7554	7554	7554	7554	7554	7554	7554	
t-statistics are in parentheses, $*** p < .01$, $** p < .05$, $* p < .1$								

Results: RE Models

	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
	Personal Care	Reading	Education	Tobacco	Cash Contribution	Life Insurance	Retirement and Pension	Miscellaneous	
Recession	-10.685	-24.655***	88.913	-62.468***	88.076	-67.549***	518.525***	-93.893	
	(507)	(-4.157)	(.719)	(-2.806)	(.543)	(-4.023)	(4.582)	(947)	
Education	58.197***	30.917***	393.345***	-237.048***	152.54*	31.873***	851.753***	-30.055	
	(7.068)	(7.108)	(4.334)	(-14.52)	(1.678)	(2.588)	(10.263)	(413)	
Interaction	-2.726	-19.844***	-20.906	24.383	160.733	-6.914	-306.379**	64.367	
	(227)	(-3.121)	(158)	(1.022)	(1.212)	(384)	(-2.526)	(.606)	
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Observations	7554	7554	7554	7554	7554	7554	7554	7554	
t-values are in parentheses, *** p<.01, ** p<.05, * p<.1									

Results: RE Models (Cont.)

Conclusions

- The Great Recession had a significant relationship on spending patterns of recent college graduates in the expenditure categories
 Housing, Entertainment, Reading, and Retirement and Pensions
- The Great Recession and education level individually had significant relationships on expenditures and the magnitude of their coefficients is justified
- Further research on the expenditure categories could tell more of the story of the changes in spending in recent college graduates due to the Great Recession's impact



Questions & Answers

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Thank you!