

# Welfare Reform Revisited: The Impact of TANF on Cyclical Vulnerability

Quantitative Analysis Center  
Summer 2011

By: Kevin Arritt

Faculty sponsor: Wendy Rayack

WESLEYAN  
UNIVERSITY



**Abstract:** This study builds on the findings of Will Monson’s senior thesis. We investigate the relationship between the implementation of Temporary Assistance for Needy Families (TANF) in1996 and income percentiles measuring an absolute measure of well-being. Our goal is to find if TANF increased the cyclical vulnerability of low income households. Monson found that while TANF improves absolute well-being during periods of low unemployment, it significantly worsens absolute well-being during periods of high unemployment. Our study finds similar conclusions and shows that increases in unemployment post-TANF may have been even more harmful than Monson originally found. We alter the measure of absolute well being used by Monson and then expand his analysis past 2004.

**Data:** For this analysis we drew data from a variety of sources:

**Percentiles:** The major difference in this study as compared to Monson’s is in the creation of income percentiles. In creating his thesis, Monson used data made available online by Joshua Geutzkow, Bruce Western, and Jake Rosenfeld for research on inequality at the Russell Sage Foundation. The data is constructed using Current Population Survey (CPS) data. Guetzkow et. al. created family income percentiles by looking at each individual in a family. In contrast, the percentiles used in this study take the family as a singular unit instead of the individual as a singular unit. To create the percentiles used in this study, raw CPS files were downloaded from the National Bureau of Economic Research (NBER). Then, for each year, a dictionary file was made to extract the needed data in Stata. Other data used includes:

**Unemployment:** The unemployment rate by state as an average over the span of each year.

**State Expenditures:** State expenditures on Medicaid and Earned Income Tax Credit (EITC) as a percent of total expenditures.

**Food Stamps:** Food Stamp expenditure per person by state.

**EITC:** Some states implemented their own EITC programs which are represented by a dummy variable. We also include data for the maximum federal EITC benefit

**Minority Population:** Percent of African Americans by state.

**Model:** This study uses the same fixed effects model that Monson uses in his study.

$$W_{i,t} = \alpha + \beta_1 M_{i,t} + \beta_2 T_{i,t} + \beta_3 (T_{i,t} * M_{i,t}) + \beta_4 S_{i,t} + \beta_5 D_{i,t} + \xi_i + \tau_t + \varepsilon_{i,t}$$

Where:

$W_{i,t}$  = Measure of well-being for state i in period t  
 $M_{i,t}$  = Measure of economic slack in state i in period t  
 $T_{i,t}$  = TANF dummy variable  
 $S_{i,t}$  = Vector of state expenditures on Medicaid and EITC as a percent of total expenditures  
 $D_{i,t}$  = Percentage African-American in State i in year t  
 $\xi_i$  = State fixed-effects  
 $\tau_t$  = Year fixed-effects  
 $\varepsilon_{i,t}$  = Randomly distributed error term

**Results: Through 2004**

**Note:** In all results, numbers in parentheses are t-statistics. Significance level: .10=\*, .05=\*\*, .01=\*\*\*

Monson’s original results:

	(1) 10 <sup>th</sup> Percentile	(2) 20 <sup>th</sup> Percentile	(3) 30 <sup>th</sup> Percentile
Unempl. Rate	-64.29* (-2.50)	1.365 (0.04)	-29.01 (-0.74)
TANF	1753.6*** (4.77)	2944.8*** (6.39)	3312.5*** (5.92)
Interaction	-349.9*** (-6.58)	-500.5*** (-7.50)	-680.5*** (-8.40)
Med Exp (% total)	2632.1** (2.77)	3514.0** (2.95)	4527.7** (3.13)
Food Stamps (per capita)	-22.20*** (-11.53)	-31.38*** (-13.00)	-32.33*** (-11.03)
Max EITC	0.155 (1.66)	0.283* (2.42)	0.708*** (4.97)
State EITC	-210.6 (-1.86)	-395.3** (-2.78)	-177.1 (-1.03)
African-American %	-106.8** (-2.80)	-47.49 (-0.99)	-9.972 (-0.17)
Constant	19254.1*** (46.56)	27481.9*** (53.00)	34505.1*** (54.80)
N	1400	1400	1400
adj. R <sup>2</sup>	0.325	0.402	0.463

Results with new percentile measures:

	(1) 10 <sup>th</sup> Percentile	(2) 20 <sup>th</sup> Percentile	(3) 30 <sup>th</sup> Percentile
Unempl. Rate	-67.55 (-1.21)	-86.93 (-1.40)	-2.265 (-0.03)
TANF	4030.4*** (5.04)	5547.1*** (6.25)	6071.2*** (6.39)
Interaction	-873.1*** (-7.54)	-1209.4*** (-9.41)	-1337.8*** (-9.72)
Med Exp (% total)	-985.4 (-0.48)	1592.0 (0.69)	2757.6 (1.12)
Food Stamps (per capita)	-30.11*** (-7.19)	-40.86*** (-8.78)	-45.63*** (-9.16)
Max EITC	0.446* (2.19)	0.873*** (3.87)	1.378*** (5.70)
State EITC	-14.53 (-0.06)	348.2 (1.27)	879.1** (3.00)
African-American %	-182.8* (-2.21)	-55.28 (-0.60)	195.2* (1.98)
Constant	24279.6*** (26.99)	32107.5*** (32.13)	36395.5*** (34.01)
N	1400	1400	1400
adj. R <sup>2</sup>	0.179	0.318	0.473

**Results: Through 2009**

	(1) 10 <sup>th</sup> Percentile	(2) 20 <sup>th</sup> Percentile	(3) 30 <sup>th</sup> Percentile
Unempl. Rate	-90.26 (-1.78)	-76.49 (-1.34)	34.13 (0.56)
TANF	2947.0*** (4.39)	4354.0*** (5.76)	4811.2*** (5.96)
Interaction	-624.7*** (-7.78)	-868.5*** (-9.60)	-974.0*** (-10.07)
Med Exp (% total)	-1549.8 (-0.91)	257.7 (0.13)	1431.1 (0.70)
Food Stamps (per capita)	-22.00*** (-6.12)	-30.21*** (-7.47)	-34.83*** (-8.06)
Max EITC	1.007*** (5.86)	1.692*** (8.75)	2.321*** (11.22)
State EITC	219.8 (1.14)	382.0 (1.76)	492.0* (2.13)
African-American %	-254.9*** (-3.57)	-115.7 (-1.44)	138.7 (1.61)
Constant	24430.7*** (31.24)	31759.8*** (36.09)	35787.5*** (38.03)
N	1649	1649	1649
adj. R <sup>2</sup>	0.192	0.355	0.530

Using income percentiles constructed with the family as the unit of observation, we find that the interaction variable has a more negative impact on percentile income thresholds than in Monson’s original findings. This interaction term represents the difference between the pre-TANF and post-TANF impact of a one percentage point increase in the unemployment rate. When the regressions are run through 2009, the interaction term remains significant and negative.

**Future Research:** Moving forward, we will recreate and update the percentiles made by Guetzkow et. al.. This will help clarify the robustness of the results to different choices of weighting schemes and income concepts. For example, with the updated version of Guetzkow’s percentiles, we can explore using individuals and equivalent adults, rather than families, as the unit of analysis. We can also experiment with different concepts of income. These modified measures of income can include income enhanced by the EITC (Earned Income Tax Credit) and family income measured PER INDIVIDUAL IN THE HOUSEHOLD. Alternative econometric methods are also of interest. By using a Hausman test, we can explore whether a fixed or random effects framework is more appropriate. We could also add to the robustness checks by performing a FGLS procedure and including standard errors that are robust to autocorrelation (HAC standard errors). Alternatively, we might investigate the results of running a GMM model with robust standard errors. All of these procedures help test the robustness of the finding that TANF has significantly increased family vulnerability to recessionary periods. In other words, they help address whether the Nation has opted for a safety net that functions during periods of prosperity but not when it is most needed.

**Acknowledgements:** Thanks to my faculty sponsor, Professor Wendy Rayack and to Will Monson for their help in guiding my work. Thanks to Professor Abigail Hornstein for helping me get this opportunity. Thanks to Kumail for making me coffee all the time. And many thanks to Manolis Kaparakis for organizing this entire program and helping me any time I got stuck.