

# BEHIND A STABLE POVERTY RATE:

## CHANGES IN THE DURATION OF POVERTY EPISODES IN THE U.S. SINCE THE MID-1980S

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### INTRODUCTION

The official poverty rate did not change much in the United States over recent decades remaining at the same level of 15 percent in the late 2000s as in the mid-1980s (DeNavas-Walt et al., 2013).

This paper aims to look 'behind' the stability of the US poverty rate and investigate what has happened to the underlying it duration distribution of poverty episodes.

### DATA AND METHOD

The analysis is based on data from the Survey of Income and Program Participation (1984 and 2008 panels).

For each individual  $i$  we estimate the probability of exiting poverty at duration  $t$ , conditional on the total amount of time spent in poverty ( $\lambda_{Di}$ ), and a set of observed ( $X_i$ ) and unobserved ( $\theta_i$ ) characteristics:

$$\hat{h}_i(t) = \frac{\exp\{\theta_{Di} + \sum_{m=1}^M X_{iM} S_{iM} + u_i\}}{1 + \exp\{\theta_{Di} + \sum_{m=1}^M X_{iM} S_{iM} + u_i\}}$$

which we then use to recover the cumulative distribution function of  $t$ :

$$\hat{F}_i(t) = \sum_{s=1}^t \hat{h}_i(s) \cdot \prod_{s=1}^{t-1} (1 - \hat{h}_i(s))$$

Aggregation of the estimates across all individuals yields the duration distribution of poverty episodes in the sample (CDF):

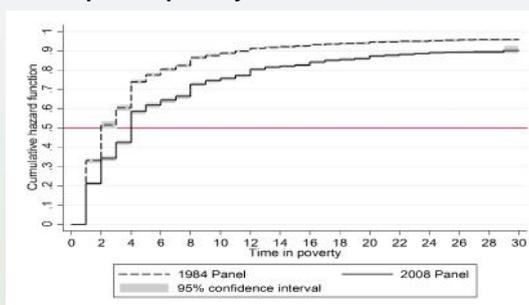
$$\hat{F}(t) = \Pr[T = t] = \frac{1}{N^t} \sum_{i=1}^{N^t} \hat{F}_i(t)$$

We decompose the change in the CDF of  $t$  between two points in time into a set of components attributable to:

- changes in the characteristics of the poor
- changes in the structure of poverty (effects of the characteristics).

### RESULTS

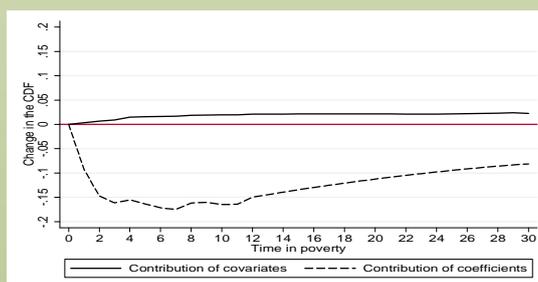
#### CDF of time spent in poverty in the 1984 and 2008 SIPP panels



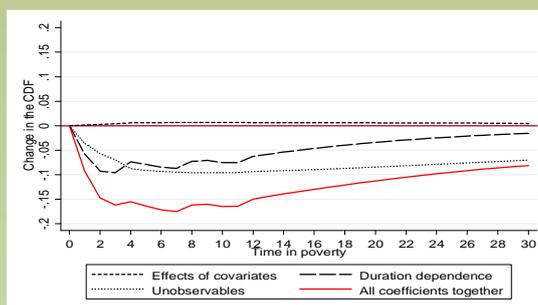
#### Changes in the duration distribution of poverty episodes between the 2008 and 1984 panels, by sub-group

	Median duration	At selected points of the cumulative hazard function			
		t=1	t=12	t=24	t>30
Total	+1.161	-0.1178	-0.1087	-0.0619	+0.0567
<25	+1.923	-0.1321	-0.1044	-0.0729	+0.0642
25-54 years	+1.683	-0.1402	-0.1158	-0.0662	+0.0694
55-64 years	+2.136	-0.0906	-0.1119	-0.0367	+0.0321
65+ years	+0.186	-0.0061	-0.0750	-0.0645	+0.0626
Male	+1.664	-0.1314	-0.1104	-0.0595	+0.0471
Female	+1.146	-0.0795	-0.0833	-0.0466	+0.0468
Only white	+1.513	-0.1160	-0.1012	-0.0553	+0.0461
Only black	+2.223	-0.1236	-0.1654	-0.0890	+0.1029
Hispanic or Latino	+1.470	-0.1280	-0.0936	-0.0758	+0.0731
Uncompleted high school	+1.318	-0.0883	-0.1395	-0.0947	+0.0927
Completed high school	+1.944	-0.1764	-0.1414	-0.0098	+0.1006
College or higher	+1.553	-0.1265	-0.1027	-0.0464	+0.0444
Single parent	+1.985	-0.1425	-0.1530	-0.0932	+0.0812
Single	+1.037	-0.0775	-0.0852	-0.0607	+0.0390
Couple	+1.511	-0.1201	-0.0898	-0.0547	+0.0603
Other	+1.090	-0.0842	-0.0665	-0.0101	+0.0015

#### Aggregate decomposition of the change in the duration distribution of poverty episodes over time



#### Detailed break-down of the contribution of the 'structure of poverty' to the overall shift in the duration distribution of poverty episodes



### CONCLUSIONS

Albeit the official poverty rate was relatively constant between the early 1980s and late 2000s, the duration of poverty has increased.

This increase was not the same for everyone – individuals living in single families, families where the head is young, black or uneducated person have experienced a disproportionately large increase in the amount of time spent below the poverty line.

The observed changes in the duration distribution of poverty episodes are induced mainly by the changes in the structure of poverty (above all, duration dependence and the effects of unobservables) rather than the characteristics of the poor.

### CONTRIBUTION

- 1) The paper provides new evidence about the change in the duration distribution of poverty episodes in the US and its underlying forces
- 2) We propose a methodological framework which makes it possible to construct and decompose the entire duration distribution of poverty episodes.

### CONTACT DETAILS

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