Can the economy explain the explosion in the SNAP caseload?

An assessment of the local-level approach

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- This paper has benefited from earlier comments received at:
  - 2013 NAWRS (this is a major revision)
  - Abt Journal Author Support Group

Related Research Questions

	Question	Answer
1	• What caused the "explosion" in the SNAP caseload?	• 2007-2011 "it's all the economy" • So caseload should return to "normal levels" as economy improves
2	• How should we answer that question? • Is there a benefit to using sub-state data—on caseloads and on the economy?	• Lags matter • EPR/Employment-to-Population Ratio is better than UR/Unemployment Rate • Sub-state data make things worse!

Outline

- Policy and Analytic Challenge
- Results
- Discussion

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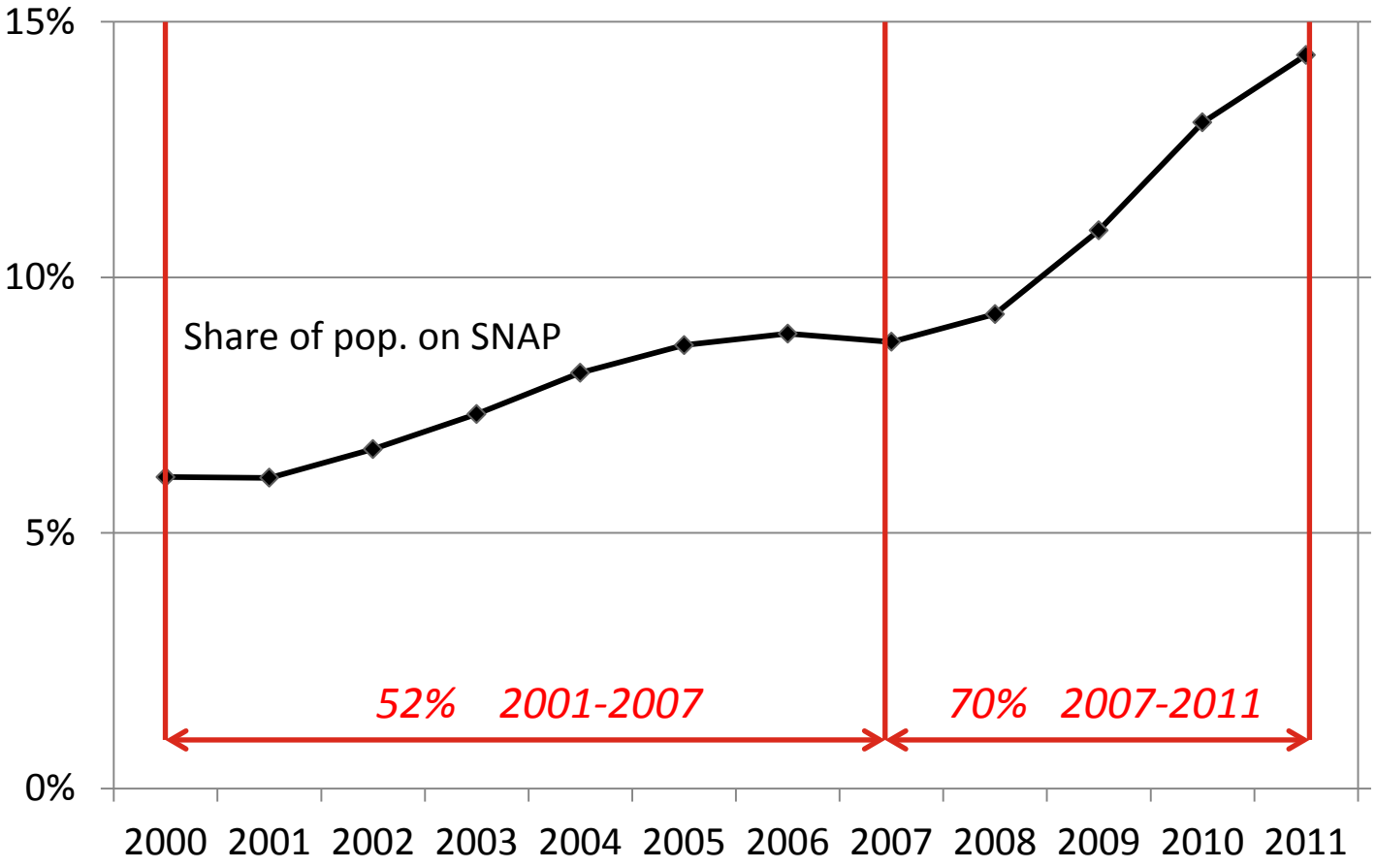
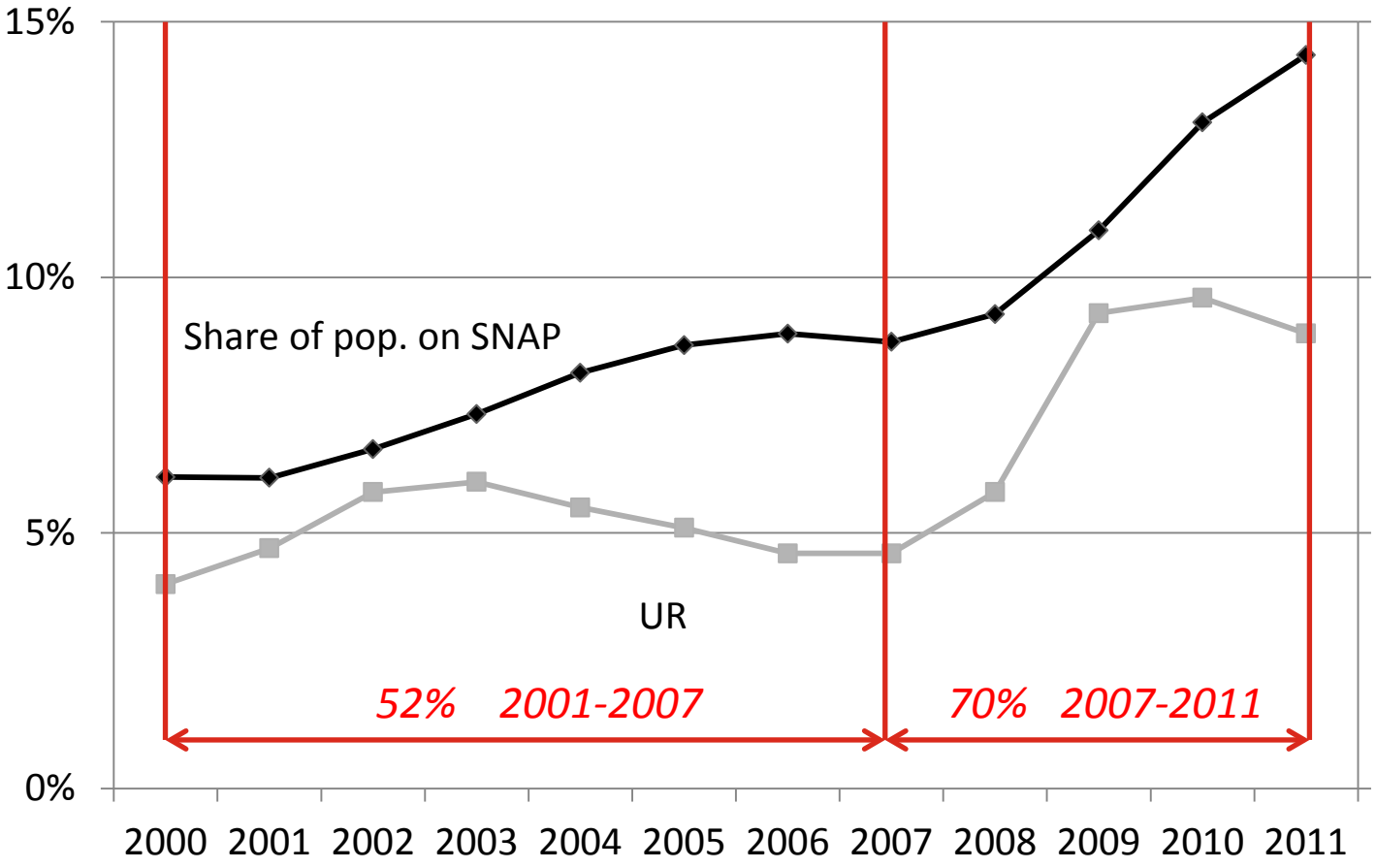
SNAP Caseload Has Exploded



In Part Due to Weak Economy



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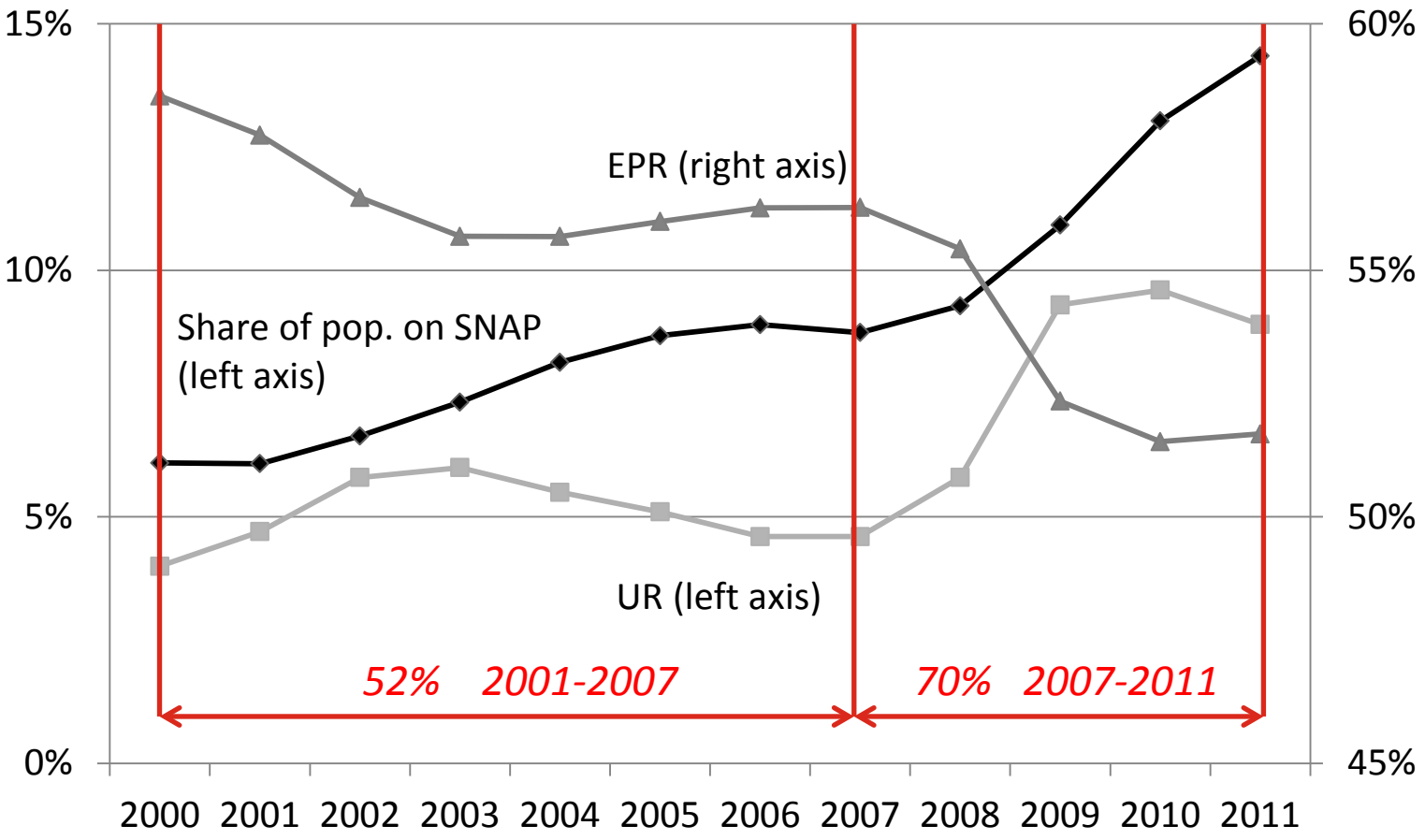
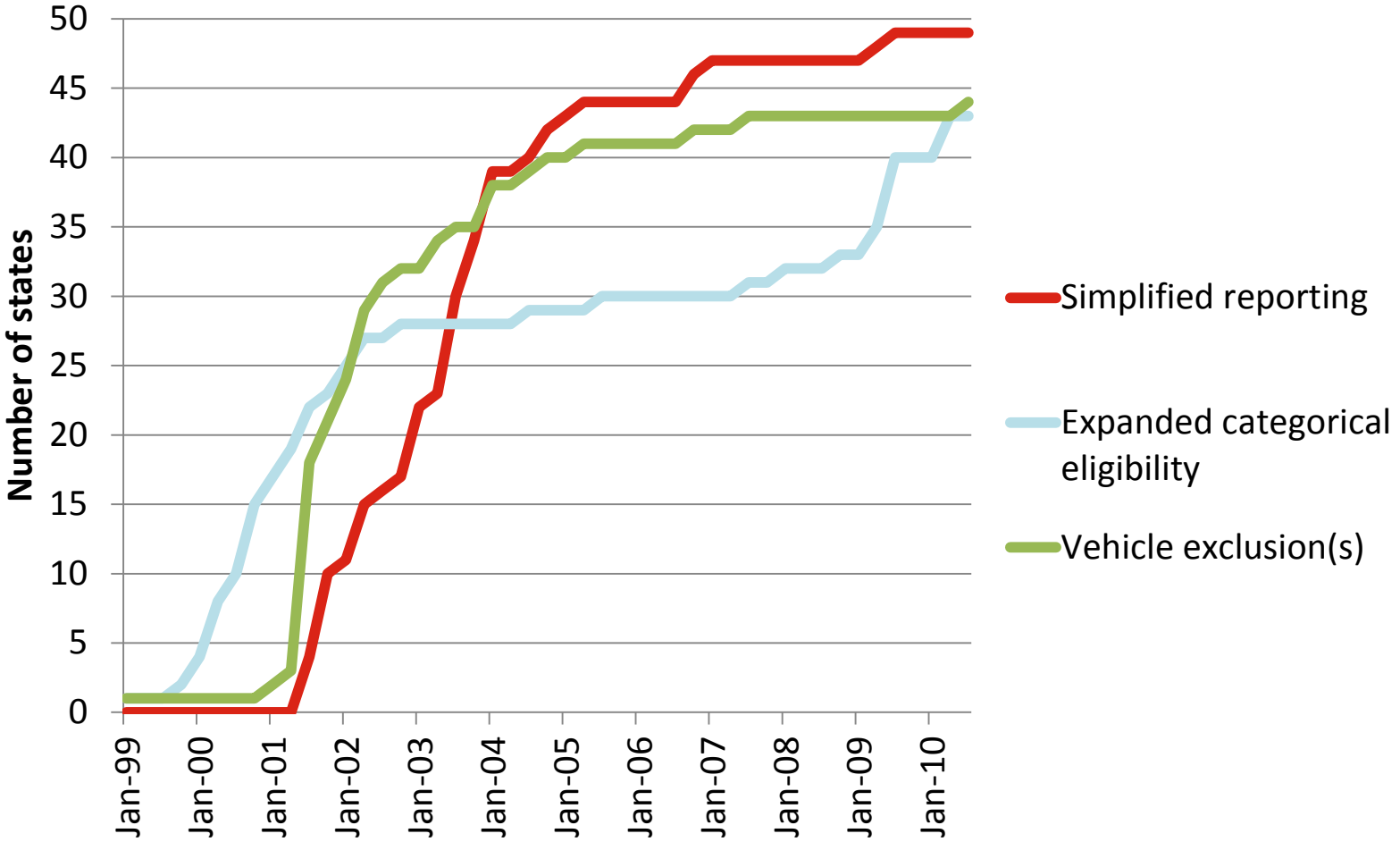


Widespread Policy Changes



Previous Literature

- Earlier studies model the economy using state-level unemployment rates
  - Currie and Grogger (2001); Kornfeld (2002); Kabbani and Wilde (2003); Hanratty (2006); Ratcliffe, McKernan, and Finegold (2008); Mabli, Martin, and Castner (2009); Klerman and Danielson (2011)
- All find that an increase in the unemployment rate raises SNAP participation
- Klerman and Danielson (2011) consider caseload increase from 2000-2009
  - 25% due to the economy
  - 15% due to SNAP policy changes broadening and easing eligibility
  - ***… leaving much unexplained***

Role of Economy Matters

- If it's the economy, then as the economy improves the caseload should go back down
  - Concern about "dependency" is unnecessary
- If it's a more structural shift—e.g., to changes in SNAP policy—then caseload is likely to stay high
  - Perhaps, raising concerns about "dependency"

This Paper Address each Critique

Critique: Perhaps …	Response
1. Earlier studies did not have enough data after reforms easing SNAP eligibility	• Update earlier DiD models with three more years of data
2. UR is the wrong proxy (e.g., discouraged workers)	• Explore using Employment to Population Ratio (EPR)
3. State is too gross a proxy for local labor markets	• Use county level caseload counts and sub-state proxies for the economy
4. State *x* time unobservables bias DiD estimates	• Estimate DiDiD models

Counteracting Biases

- Intra-state variation in the labor market favors sub-state proxies
  - Measurement error in state-level proxies biases point estimates down (in absolute value)
- Measurement error favors state-level measures (Griliches and Hausman, 1978)
  - Fixed effects/DiD—and even more so, DiDiD—sweep out much of the “signal”
  - Leaving all of the “noise”
  - Increasing attenuation bias; i.e., biasing sub-state point estimates down (in absolute value)

Outline

- Policy and Analytic Challenge
- ***Results***
  - State DiD/Difference-in-Differences
  - Sample Selection
  - Sub-state DiD
  - Sub-state DiDiD
  - Simulations
- Discussion

Results: State Level

- Policy does not matter
  - At least once state-specific time trends are included
  - This approach is slightly less powerful than earlier paper; policy impacts were not strong there
- The UR matters
  - and a lot more when you include lags
- With time trends, EPR matters more than UR
  - Opposite of situation w/o time trends
- UR helps even with EPR and lags
  - Magnitude 7.9 percent per 1 percentage point of UR equivalent

State Level: Policy does not Matter

DV	IV	w/o lags			w/lags		
		UR	EPR	Both	UR	EPR	Both
State	State						

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State Level: Economy Matters

DV	IV	w/o lags			w/lags		
		UR	EPR	Both	UR	EPR	Both
State	State	3.3	4.2	4.8	6.0	7.0	7.9

- The UR matters
  - Magnitude 3.3% per 1 p.p. (percentage point) of UR equivalent

- Table entries are sum of all economic coefficients in UR units
- EPR normalized to UR by 1.23 (ratio of s.d., w/dummy variables)

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State	State	3.3	4.2	4.8	6.0	7.0	79

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- The UR matters
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- EPR matters more than UR

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Pure Sample Selection Effect

DV	IV	w/o lags			w/lags		
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State	State	3.3	4.2	4.8	6.0	7.0	7.9
County	State	4.8	4.9	6.5	8.6	9.8	11.0

- Impact is larger in reporting counties

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- Impact is larger in reporting counties
- Otherwise, similar patterns:
  - UR matters

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Sub-State Proxies Don't Help

DV	IV	w/o lags			w/lags		
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State	State	3.3	4.2	4.8	6.0	7.0	7.9
County	State	4.8	4.9	6.5	8.6	9.8	11.0
County	LMA	1.8	2.0	2.2	3.5	3.0	4.8
County	Both	4.8	5.2	5.0	8.6	10.2	11.4

- LMA/Labor Market Area alone does horribly

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- LMA/Labor Market Area alone does horribly
- Adding LMA to State does little

- Table entries are sum of all economic coefficients in UR units
- EPR normalized to UR by 1.23 (ratio of s.d., w/dummy variables)

DiDiD Makes Things Worse

DV	IV	w/o lags			w/lags		
		UR	EPR	Both	UR	EPR	Both
State	State	3.3	4.2	4.8	6.0	7.0	7.9
County	State	4.8	4.9	6.5	8.6	9.8	11.0
County	LMA	1.8	2.0	2.2	3.5	3.0	4.8
County	Both	4.8	5.2	5.0	8.6	10.2	11.4
DiDiD		0.9	1.5	1.7	2.0	2.1	3.1

- LMA/Labor Market Area alone does horribly
- Adding LMA to State does almost nothing
- DiDiD exacerbates measurement error

- Table entries are sum of all economic coefficients in UR units
- EPR normalized to UR by 1.23 (ratio of s.d., w/dummy variables)

Simulations

DV	IV	w/o lags			w/lags		
		UR	EPR	Both	UR	EPR	Both
Earlier Period: 2001-2007 (+52%)							
State	State	7%	8%	9%	11%	11%	13%
County	State	6%	20%	38%	22%	19%	37%
County	LMA	2%	7%	10%	7%	7%	13%
County	Both	5%	20%	39%	21%	19%	38%
DiDiD		1%	6%	7%	5%	4%	9%
Later Period: 2007-2011 (+70%)							
State	State	35%	41%	47%	65%	68%	76%
County	State	45%	54%	74%	39%	80%	86%
County	LMA	19%	24%	25%	16%	38%	46%
County	Both	45%	55%	75%	41%	80%	87%
DiDiD		10%	15%	18%	15%	24%	31%

- Simulation results w/in panels are similar to impact results
  - But, remember pure sample selection effect!
- Across panels, the economy explains a lot more in the later period
  - Same parameters

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- ***Discussion***

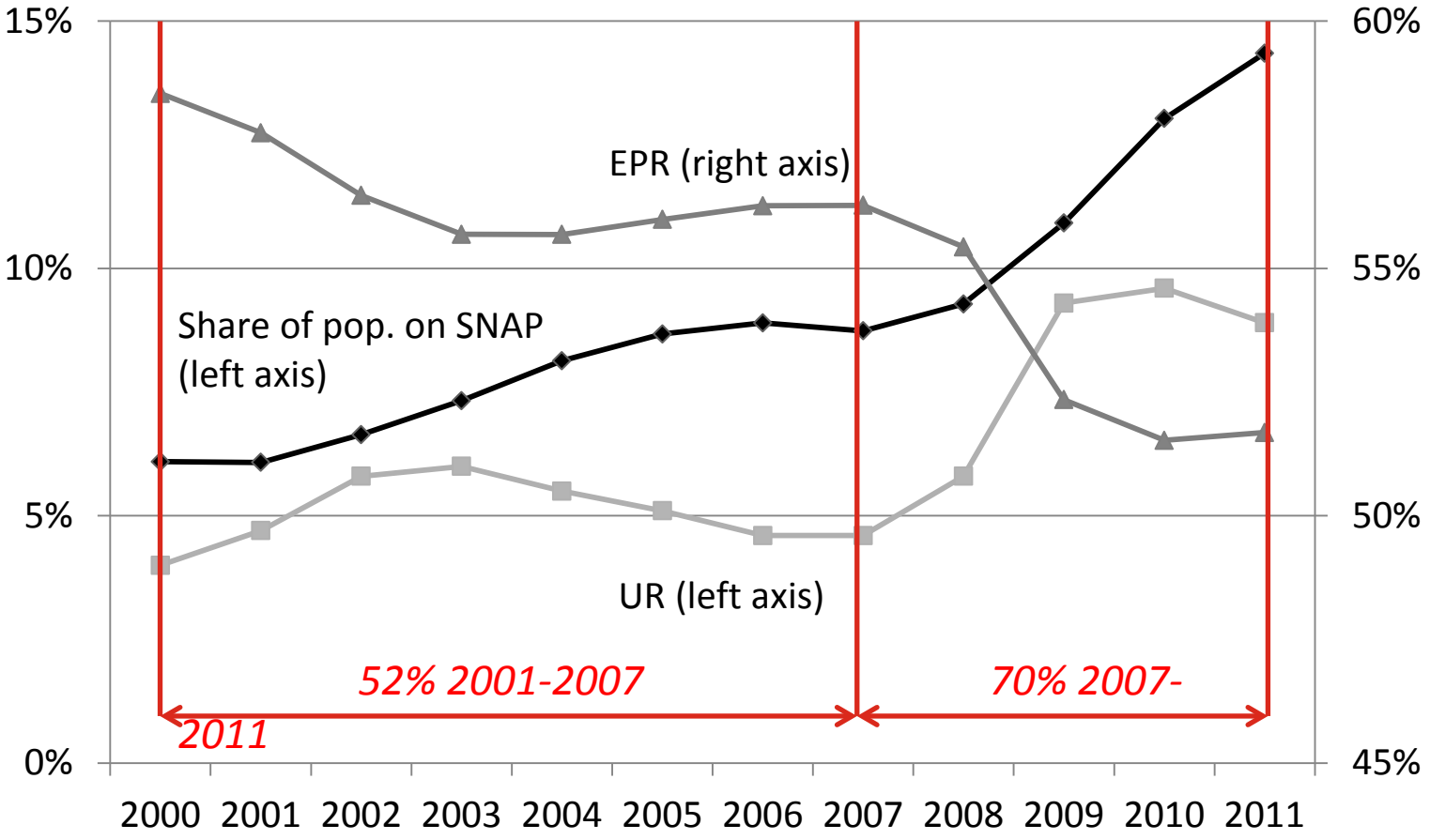
Findings: Modelling

- Conventional model is (i) contemporaneous; (ii) UR; (iii) at state level
- Sample selection matters
  - Relative to all counties, impact of economy is larger (~25%) in counties that report
- Proxies for the economy
  - EPR is moderately (~15%) better than UR
  - Both are a little better (~5%) than EPR alone
  - Only small contribution of including sub-state proxies
- DiDiD models do much worse
  - Apparently due to measurement error

Findings: Substance

- Policy (the ones we measure) matter almost not at all
- The economy matters a lot
  - Especially in the later period
- Strong policy implication
  - Caseload should go back down as the economy improves
  - At least in later period, little evidence of a structural shift/Increase in “dependency”

So Caseload Should Come Down as Economy Improves



Outline

- Policy and Analytic Challenge
- Results
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BOLD
THINKERS
DRIVING
REAL-WORLD
IMPACT

Outline

- Policy and Analytic Challenge
- ***Data and Methods***
- Results
- Discussion

Conventional Approach and Four Critiques

- Conventional approach (ours and others)
  - Difference-in-differences at the state level
  - Proxy for the economy with state-level unemployment rate (UR)
- With four possible critiques
  1. Perhaps earlier studies did not have enough data post-reforms broadening SNAP eligibility and lowering paperwork burden
  2. Perhaps the UR is the wrong proxy (e.g., discouraged workers)
  3. Perhaps state is too gross a proxy for local labor markets
  4. Perhaps there are state x time unobservables that bias DiD estimates
- Small sub-state literature: Ganong and Liebman (2013) considers only the third critique; Lindo (2013) considers the second and third critique (for the question of health outcomes)

Data

- Required at both the state and the sub-state level:
  - SNAP caseloads – FNS/National Data Bank
  - Unemployment rates / employment counts – BLS/LAUS and QCEW
  - Population estimates – Census
- State SNAP policies – Danielson, Klerman, Andrews and Krimm (2012)
  - State-level policies probably an approximation
  - “Local control” not a prominent feature of SNAP
  - National policies (and change in “spirit”) only captured in time dummy variables

Methods: 3 Specifications

- Standard approach is state-level difference-in-differences (DiD):

$$y_{s,t} = \log\left[\frac{M_{s,t}}{N_{s,t}}\right] = \alpha + X_{s,t}\beta + Z_{s,t}\delta + \tau_t + \mu_s + \eta_s t + \varepsilon_{s,t}$$

- We extend to sub-state data (c/county, l/LMA):

$$y_{c,t} = \log\left[\frac{M_{c,t}}{N_{c,t}}\right] = \alpha + X_{s,t}\beta + X_{l,t}\gamma + Z_{s,t}\delta + \tau_t + \mu_c + \eta_c t + \varepsilon_{c,t}$$

- Finally, we estimate DiDiD models:

$$y_{c,t} = \log\left[\frac{M_{c,t}}{N_{c,t}}\right] = \alpha + X_{l,t}\gamma + \mu_c + s*\tau + \varepsilon_{c,t}$$