



Lessons from Panel Microdata

Rachel Brasier

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Wage Growth

U.S. Census Bureau

*Results are very preliminary. Please do not repeat or circulate.



Wage Growth




- ▶ Wage growth is an indicator of the degree of slack or tightness of labor markets and inflationary pressures
- ▶ Two ways to measure:
 - ▶ Firm level¹
 - ▶ Individual level²
- ▶ Important: median of **individuals' wage growth**, not growth of median wage
- ▶ Hence microdata

1. Establishment Survey, Quarterly Census of Employment and Wages, Texas Business Outlook Surveys (Dallas Fed)
2. Current Population Survey, Panel Study of Income Dynamics (UMich), Survey of Income and Program Participation



Project Overview

- ▶ Atlanta Fed Wage Growth Tracker uses Current Population Survey (CPS)
- ▶ CPS does not track participants whose place of residence changes
- ▶ Is there a non-mover bias?
- ▶ Replicate Wage Growth Tracker using survey that follows respondents to new residence



Survey of Income and Program Participation (SIPP)

- ▶ Intermittently covers 1983–2013
- ▶ Mission is to provide nationally representative sample for evaluating:
 - ▶ Annual and sub-annual income dynamics
 - ▶ Movement into and out of government assistance programs
 - ▶ Effects of changing family and social situations for individuals and households
- ▶ Sampling to match the purpose

History

Panel Year	First Interview	Last Interview	Households	Waves
1984	Oct. 83	Jul. 86	20,897	9
1985	Feb. 85	Aug. 87	14,306	8
1986	Feb. 86	Apr. 88	12,425	7
1987	Feb. 87	May 89	12,527	7
1988	Feb. 88	Jan. 90	12,725	6
1989	Feb. 89	Jan. 90	12,867	3
1990	Feb. 90	Sep. 92	19,800	8
1991	Feb. 91	Sep. 93	15,626	8
1992	Feb. 92	May 95	21,577	10
1993	Feb. 93	Jan. 96	21,823	9
1996	Apr. 96	Mar. 00	40,188	12
2001	Feb. 01	Jan. 04	50,500	9
2004	Feb. 04	Jan. 08	51,379	12
2008	Sep. 08	Dec. 13	52,031	16
2014				



Datafiles

- ▶ https://thedataweb.rm.census.gov/ftp/sipp_ftp.html
- ▶ Wave X Core Data File
- ▶ Core SAS Input Statements
- ▶ Core Data Dictionary



“Replicating” Atlanta Fed’s Process

- Exclude

- **top-coded earners**, i.e. $\$150,000/52 \text{ weeks} = \$2,885 \text{ per week}$
- **BLS-imputed** earnings or usual hours worked
- individuals whose hourly pay is **below current federal minimum wage** for tip-based workers (\$2.13)
- individuals employed in **agricultural occupations**
- individuals who **did not have at least one job**, either full- or part-time, at any point during reference period
- individuals who reported **usual hours as “0” or “varied”**

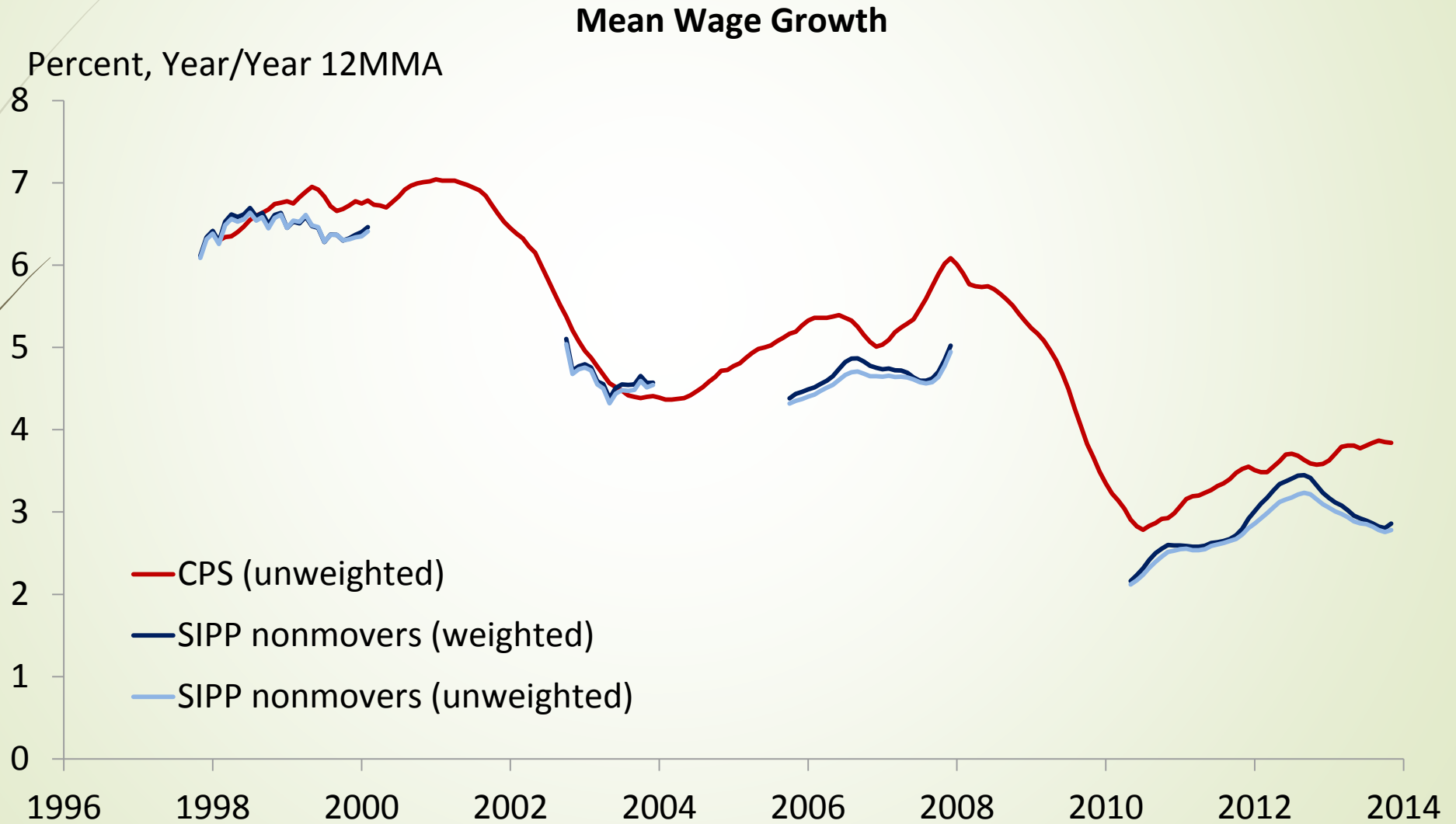


“Replicating” Atlanta Fed’s Process

- ▶ Match criteria:

- ▶ Reported **age** (TAGE) is no more than one year younger and no more than three years older than the age reported a year ago
- ▶ Reported **race** (ERACE) matches race reported a year ago
- ▶ **Sample unit ID** (SSUID) matches sample unit ID entered a year ago

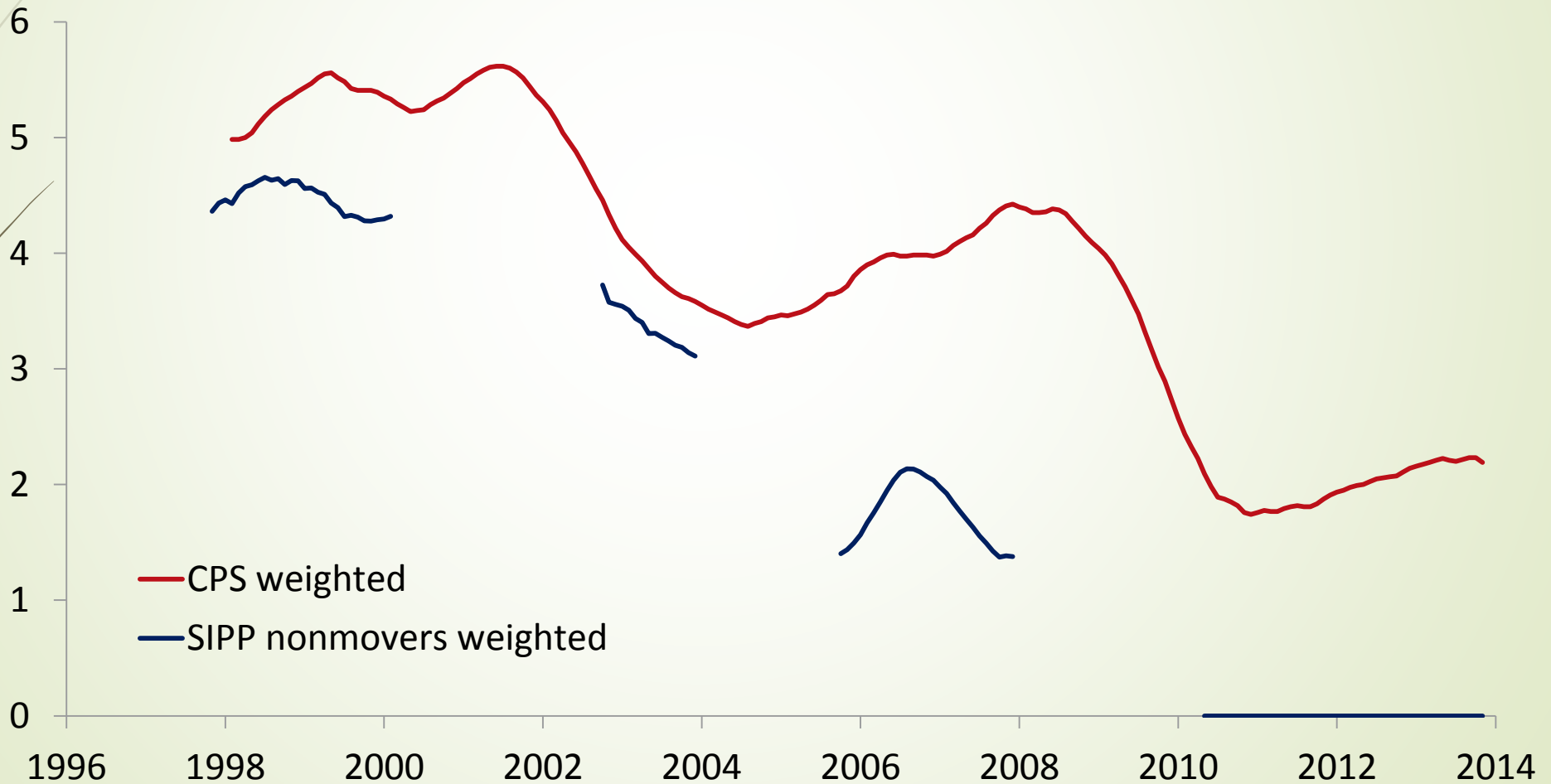
Results: SIPP vs. CPS



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Median Wage Growth

Percent, Year/Year 12MMA





Results: SIPP vs. CPS

- ▶ Why might SIPP yield different wage growth results than CPS?
 - ▶ CPS' primary purpose is not to study income dynamics
 - ▶ Different survey structures
 - ▶ <https://www.frbatlanta.org/chcs/wage-growth-tracker.aspx?panel=2>
 - ▶ Survey weights
 - ▶ Our imputed hourly wage



Unique to SIPP

- ▶ Creating uniform measure of wage
 - ▶ Wage given as **hourly** earnings (TPYRATE1) and/or **monthly** earnings (TPMSUM1)
 - ▶ Hours given as **weekly** averages over the reference month (EJBHRS1)
 - ▶ We assume **4.35 weeks per month**, so:
Imputed hourly wage=monthly income/4.35/weekly hours worked



Unique to SIPP

- ▶ Identifying movers
 - ▶ EOUTCOME: interview status code for household
 - ▶ TMOVRFLG: mover recode; indicates whether respondent moved during a wave (four-month period)
 - ▶ SHHADID: household address ID
 - ▶ Differentiates households within sampling zone, i.e. households spawned from original sample household

EOUTCOME

- U All persons in households
- 201 .Completed interview
- 203 .Compl. partial- missing data; no TYPE-Z
- 207 .Complete partial - TYPE-Z; no further follow-up
- 213 .TYPE-A, language problem
- 216 .TYPE-A, no one home (noh)
- 217 .TYPE-A, temporarily absent (ta)
- 218 .TYPE-A, hh refused
- 219 .TYPE-A, other occupied (specify)
- 234 .TYPE-B, entire hh institut. or temp. ineligible
- 248 .TYPE-C, other (specify)
- 249 .TYPE-C, sample adjustment
- 250 .TYPE-C, hh deceased
- 251 .TYPE-C, moved out of country
- 252 .TYPE-C, living in armed forces barracks
- 253 .TYPE-C, on active duty in Armed Forces
- 254 .TYPE-C, no one over age 15 years in household
- 255 .TYPE-C, no Wave 1 persons remaining in household
- 260 .TYPE-D, moved address unknown -SPAWN
- 261 .TYPE-D, moved within U.S. but outside SIPP -SPAWN
- 262 .TYPE-C, merged with another SIPP household**
- 270 .TYPE-C, mover, no longer located in FR's area -PARENT**
- 271 .TYPE-C, mover, new address located in same FR's area -PARENT**
- 280 .TYPE-D, mover, no longer located in FR's assignment area -SPAWN

TMOVRLG

U All persons in households

-1 .Not in Sample (Not in universe yet)

0 .New to sample

1 .Nonmover

2 .Moved, same county

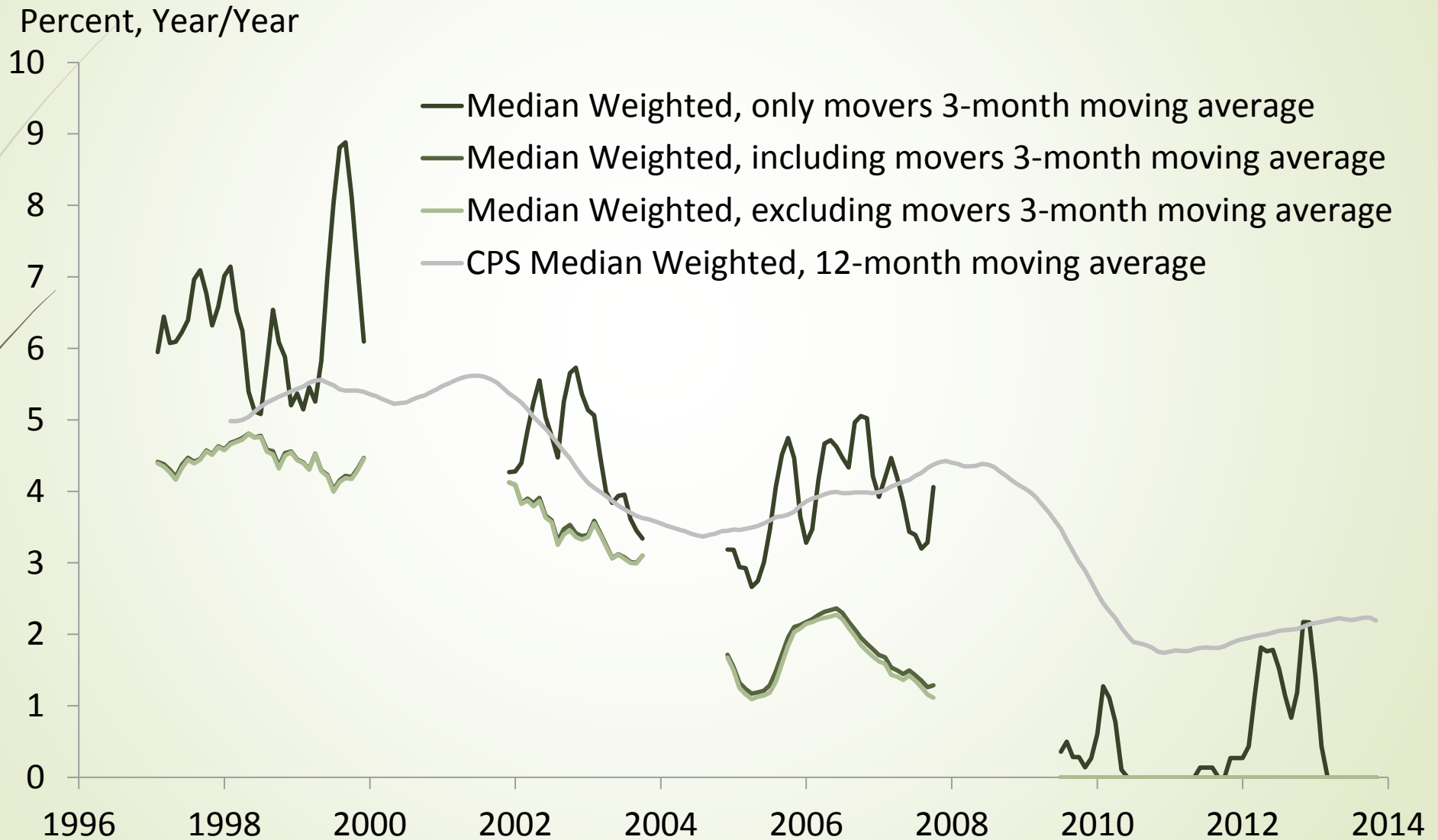
3 .Moved, different county within same state

4 .Moved, different state

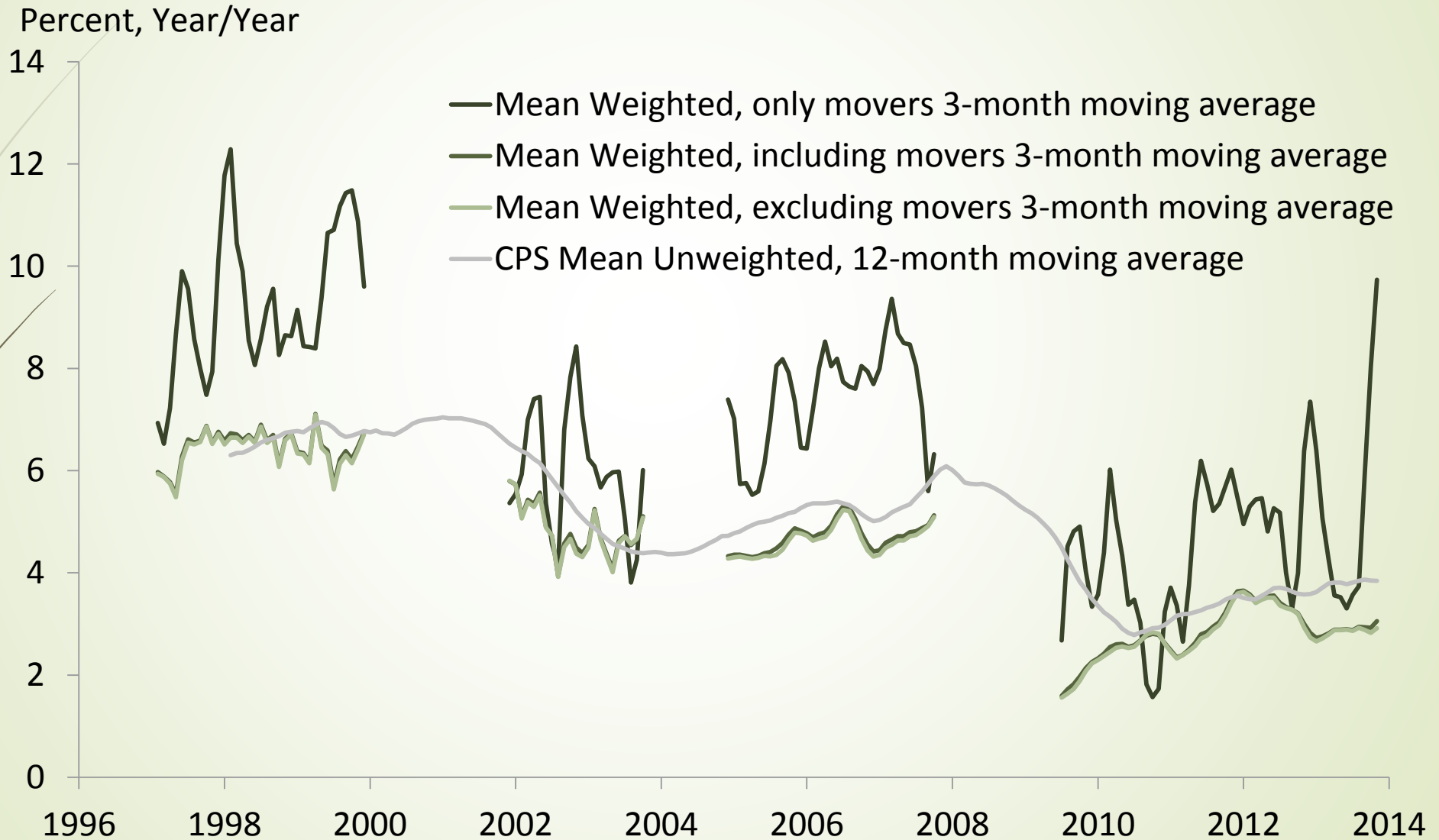
5 .Moved, unable to follow (Type D)

6 .Moved, out of scope (Type C)

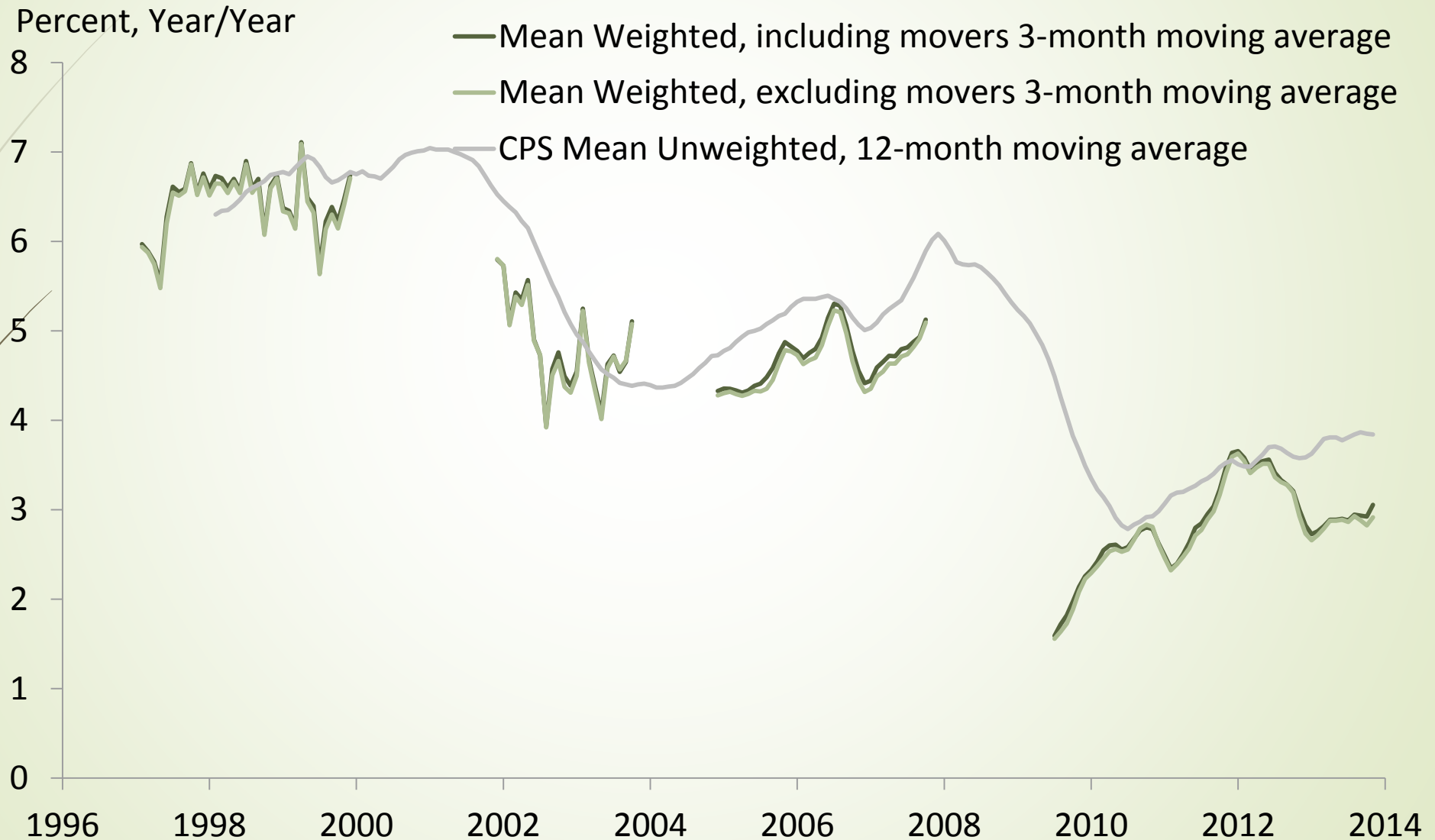
Results: Movers vs. Nonmovers



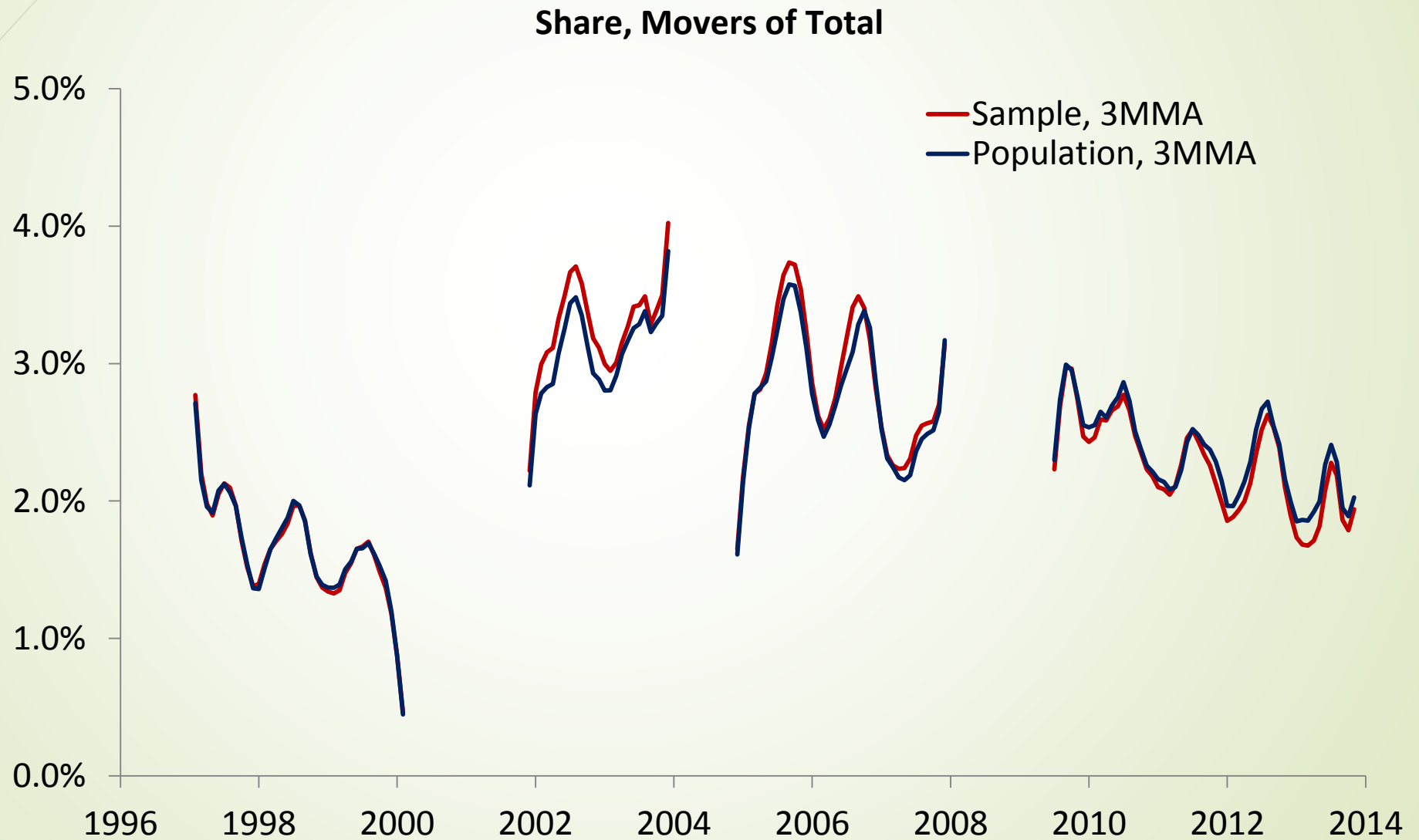
Results: Movers vs. Nonmovers



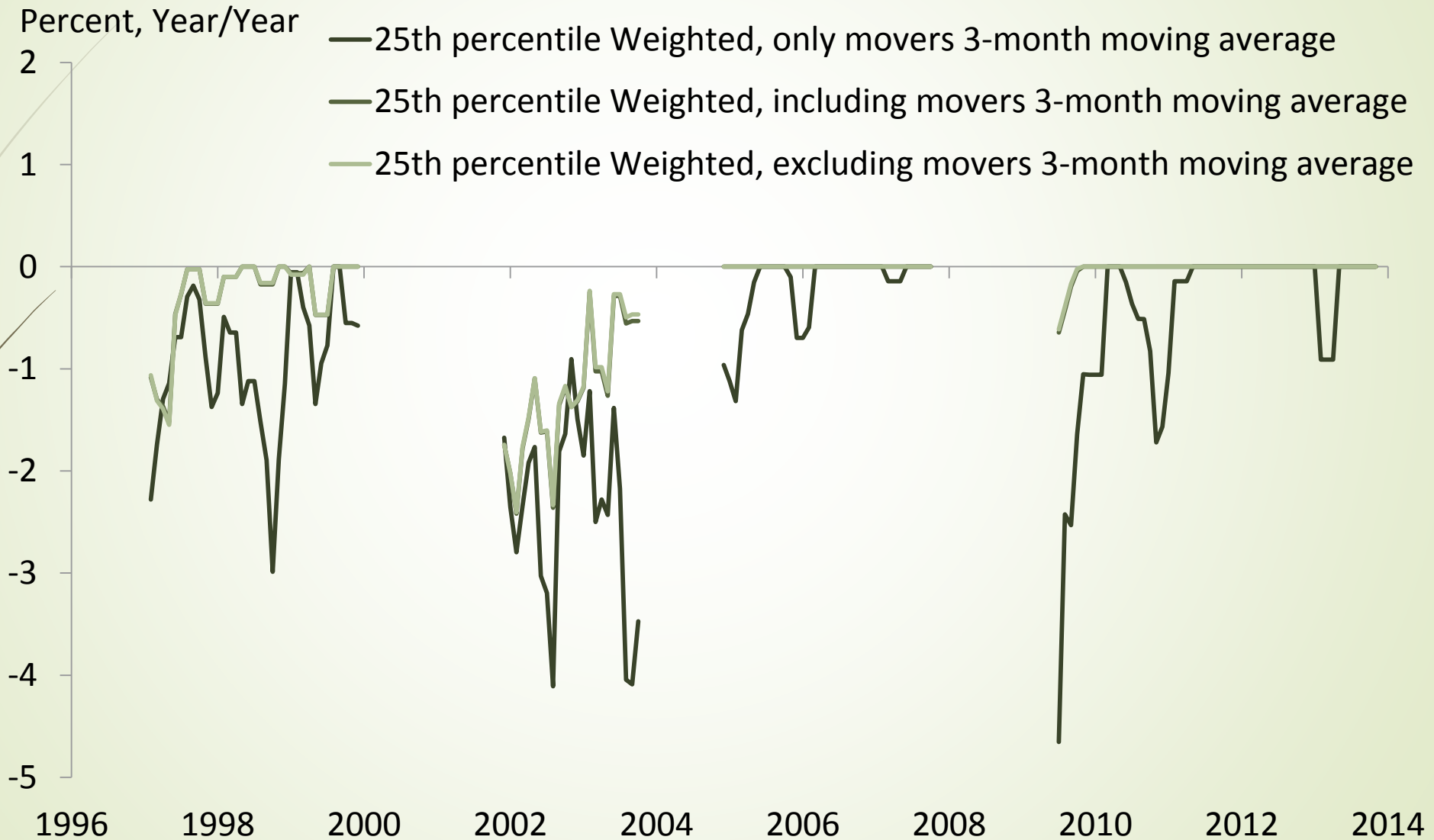
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Results: Movers vs. Nonmovers

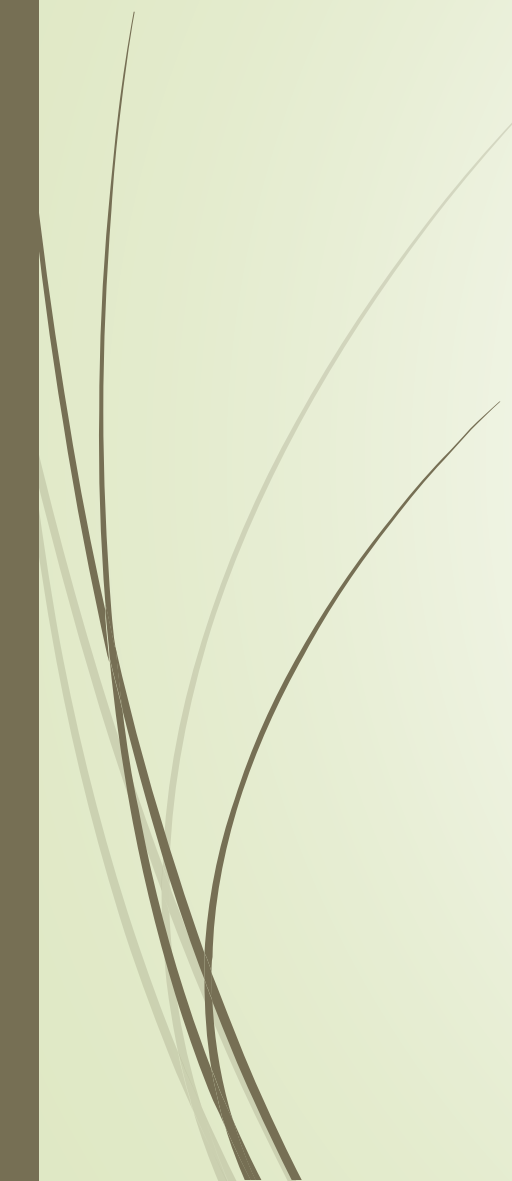


Results: Movers vs. Nonmovers





Future Applications

- ▶ Zero wage growth
 - ▶ Demographics
 - ▶ Household dynamics
 - ▶ Institutionalization
 - ▶ Inequality
- 



Disaster Relief

Federal Emergency Management Agency (FEMA)



Project Overview

- Motivation: What conclusions can we draw from OpenFEMA microdata?
- 



OpenFEMA Data

➤ Datasets:



Individual Assistance grant program: provides survivors with assistance for **housing, damages, etc.** related to a disaster



Public Assistance grant program: assists with state, local, tribal and territorial government costs for **public works projects**



Hazard Mitigation grant program: helps communities **reduce/eliminate long-term risk** to people and property from natural hazards

Matching FEMA Publications

Harvey Individual Assistance Grows Modestly, Public Assistance to Double in 2018

	Actual obligations through March 31, 2018 (in millions)	Projected totals through Sept. 30, 2018 (in millions)
Individual assistance	\$2,804	\$2,969
Public assistance	\$638	\$1,269
Hazard mitigation	\$17	\$43
Operations	\$188	\$264
Administrative	\$1,477	\$1,806
Total	\$5,124	\$6,351

SOURCE: Federal Emergency Management Agency May 2018 Disaster Relief Fund Report.

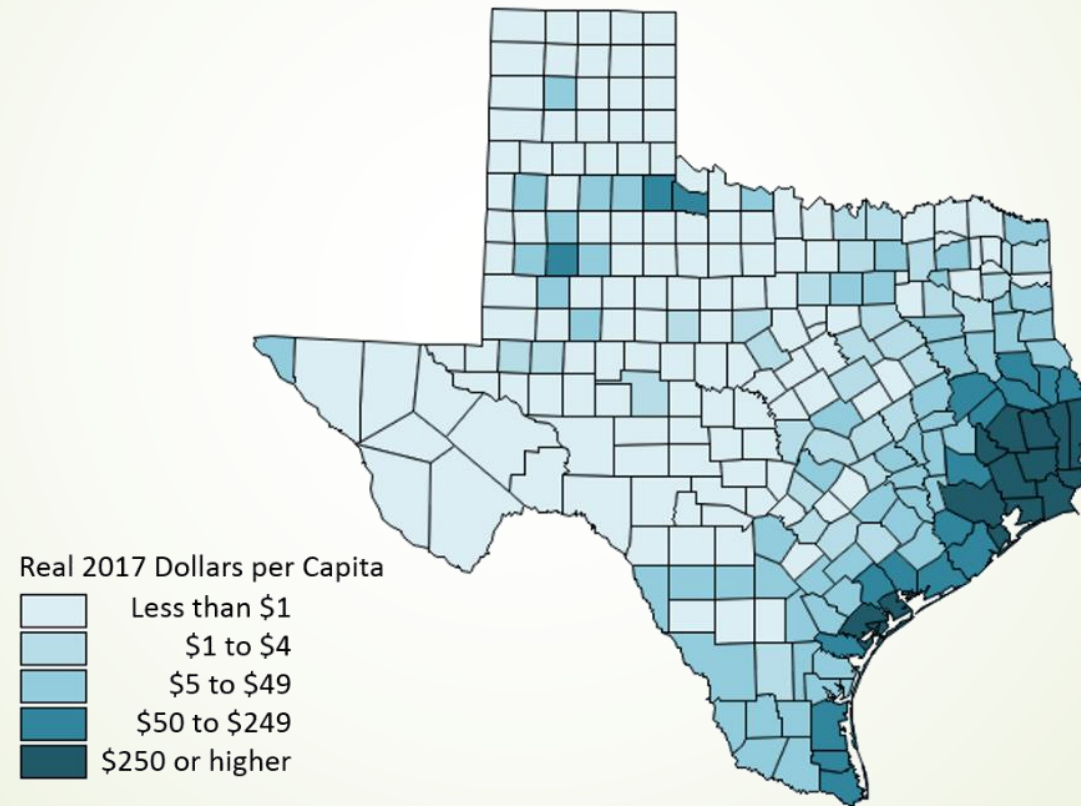


CPI-Deflating Grant Amounts

- ▶ Partly because NOAA Billion-Dollar Disaster estimates are in real 2017 USD
- ▶ Also to give common currency for comparisons between states, disasters

Results: Texas by County

Map 1: Hurricane-Related State Aid Funding Saturates Coast

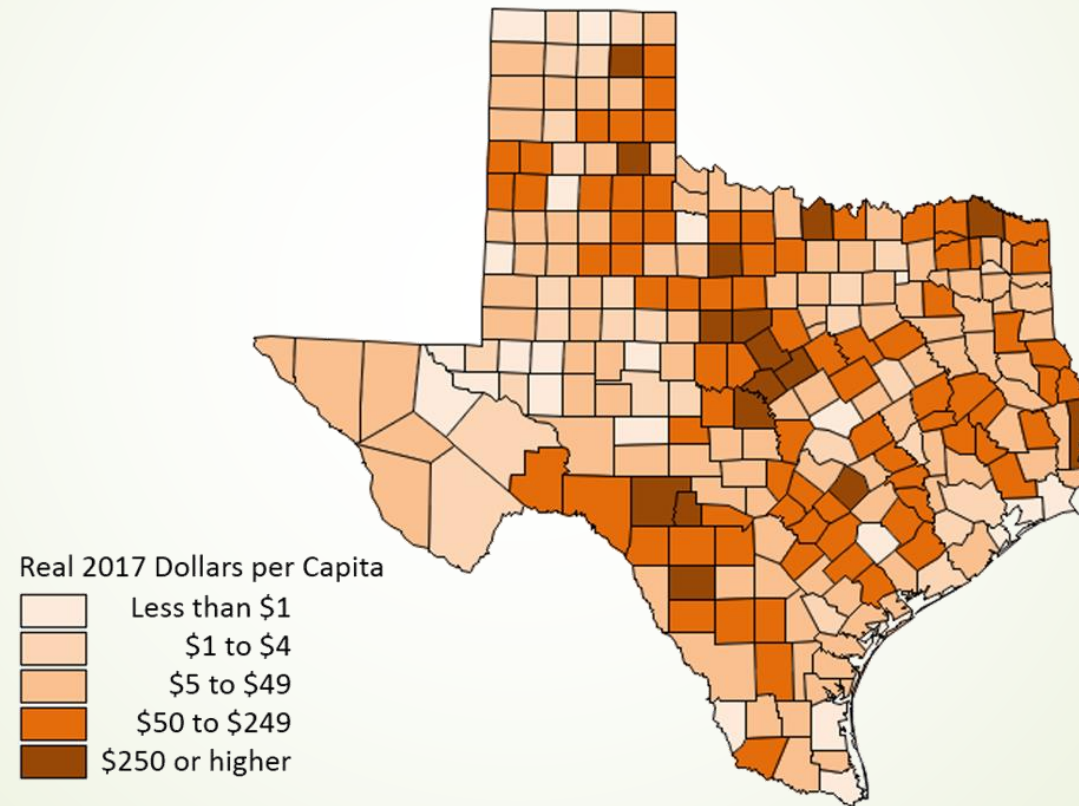


NOTES: Records begin Aug. 1998 and include obligated grants for disasters declared through Dec. 2017; hurricane-related funding includes public assistance grants distributed in response to hurricane and coastal storm events.

SOURCES: Bureau of Labor Statistics; Census Bureau; Federal Emergency Management Agency; authors' calculations.

Results: Texas by County

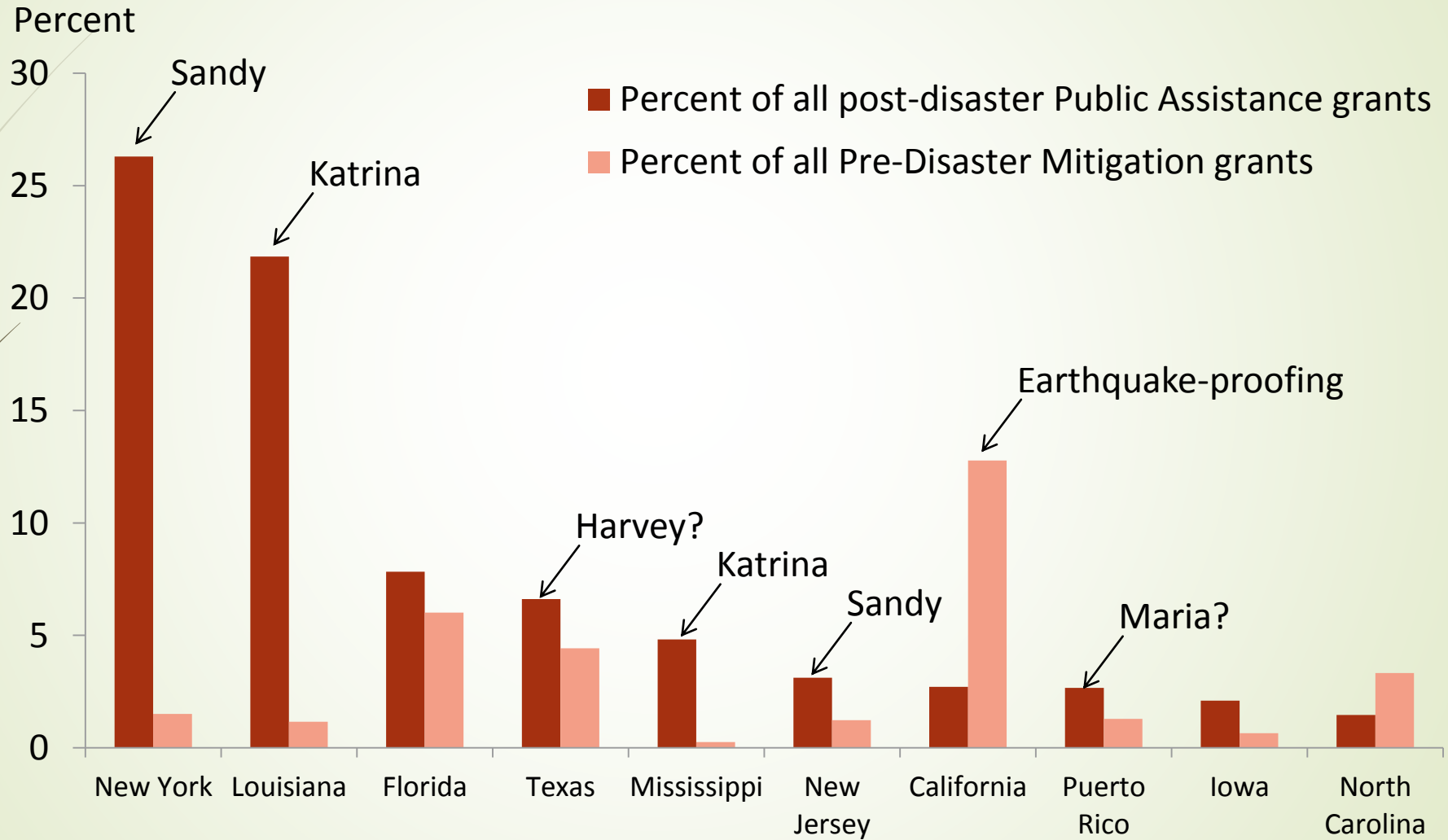
Map 2: Non Hurricane-Related State Aid Funding Dispersed across Texas



NOTES: Records begin Aug. 1998 and include obligated grants for disasters declared through Dec. 2017; non hurricane-related funding includes public assistance grants distributed in response to severe storm, fire, flood, severe ice storm, tornado and other events.

SOURCES: Bureau of Labor Statistics; Census Bureau; Federal Emergency Management Agency; authors' calculations.

Results: Pre- and Post-Disaster



NOTES: Records begin Aug. 1998 and include obligated grants for disasters declared through Dec. 2017; chart shows percent of all FEMA grants (inflation-adjusted) awarded to U.S. states and territories during that period.

SOURCES: Bureau of Labor Statistics; Federal Emergency Management Agency; authors' calculations.



See more in our SWE Q2 article!