Welfare Programs and Survey Misreporting: Implications for Income, Poverty and Disconnectedness

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Preliminaries

- This is part of a larger project in which we will examine welfare program participation and work

- The first step is getting the program receipt and income data right

- Our analyses use confidential data; the first set of tables were cleared for disclosure Monday.

Summary

- The CPS, the main official U.S. source of income data is deteriorating; for issues related to poverty, missing gov't transfers possibly the biggest problem

- We link administrative data to the CPS, and find half of SNAP missing in the survey as well as 2/3 of TANF and housing dollars

- Including these benefits sharply changes analyses done with these data: poverty and inequality appear better, program effects are larger, fewer people falling through safety net

Background

- We use household survey data to assess many aspects of the lives of low-income households and the effects of policy
  - Income and poverty status
  - Program effects on the income distribution
  - Disconnectedness: with no work or welfare; people "falling through the cracks"
  - Program participation
  - Employment

Number of Children Living in Poverty Drops Sharply, Census Bureau Reports

By ROBERT PEAR   SEPT. 16, 2014

WASHINGTON — The poverty rate declined last year for the first time since 2006, the Census Bureau reported on Tuesday. But at the same time, it said,

Declining Quality of Survey Data

- Unit nonresponse (when a household is not interviewed; survey nonresponse) has been rising in most surveys

- Item nonresponse (when a question is not answered) has been rising in most surveys

- The error in responses conditional on obtaining one (measurement error) has risen

- We don't really know why: declining public spirit, people are over-surveyed?

- The problems are widespread

- These patterns have implications for much of empirical research and for public policy.

Figure 1
Food Stamp Program/Supplemental Nutrition Assistance Program
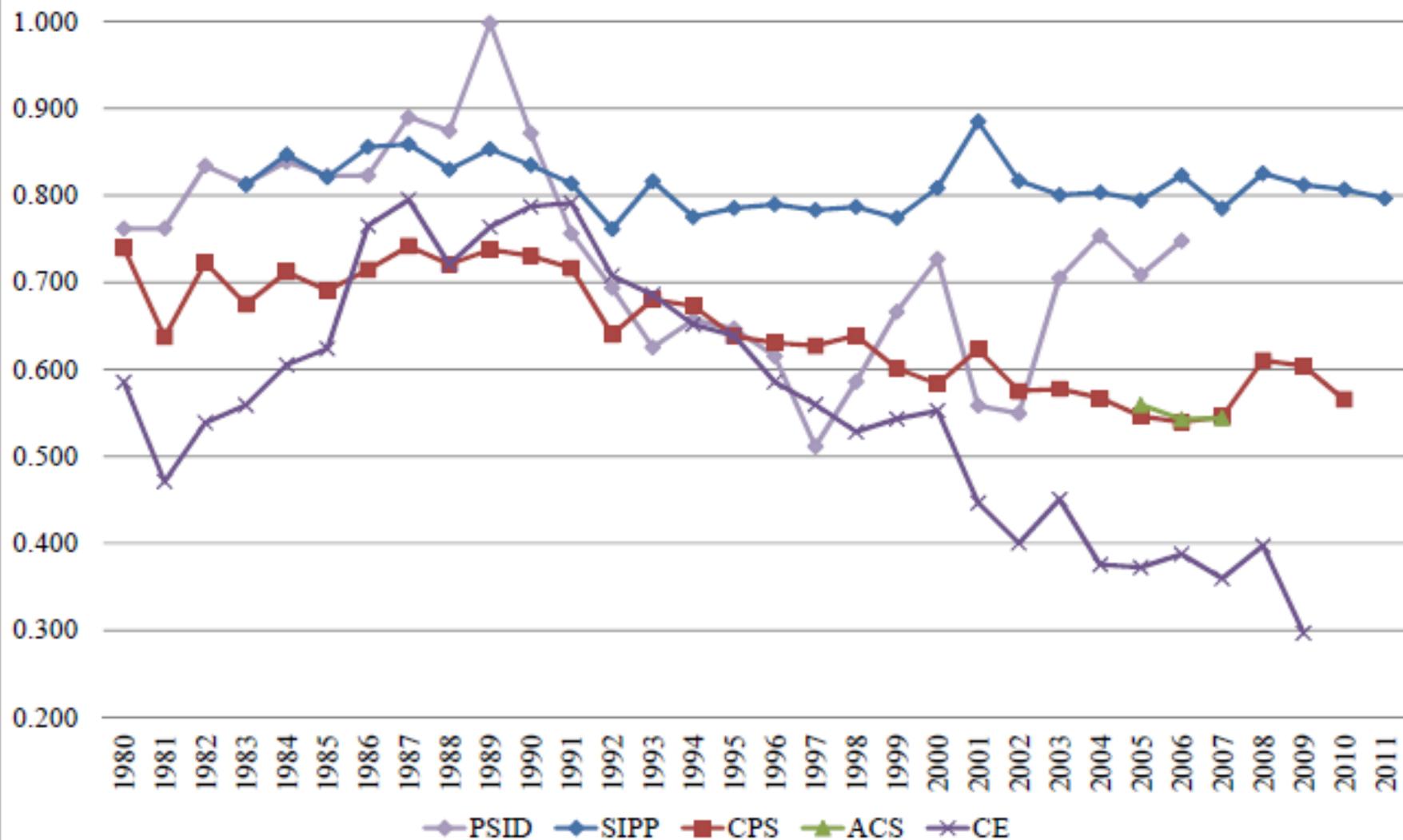**Dollar Reporting Rates**

Figure 2
Food Stamp Program/Supplemental Nutrition Assistance Program
Month Reporting Rates

PSID SIPP CPS

Figure 3
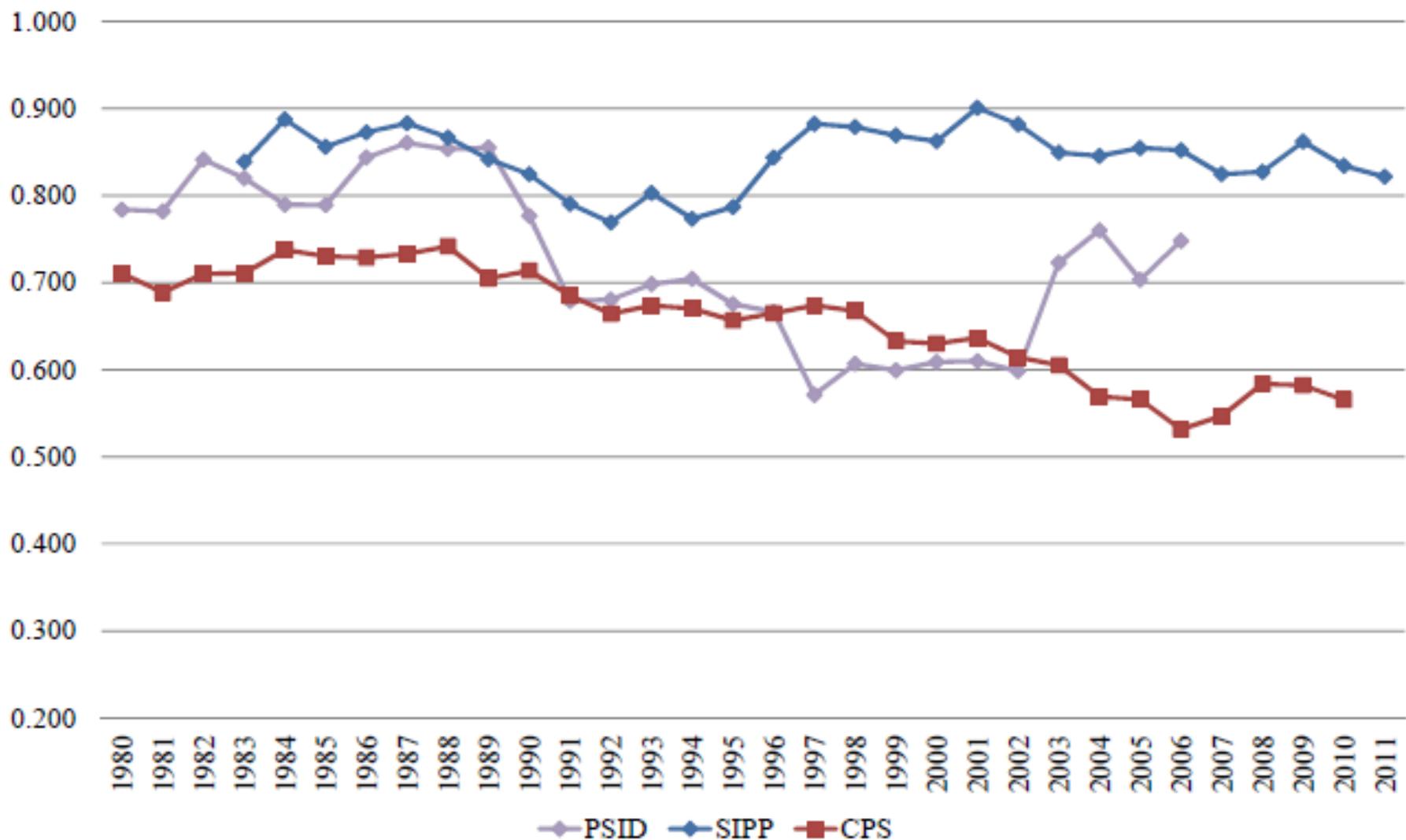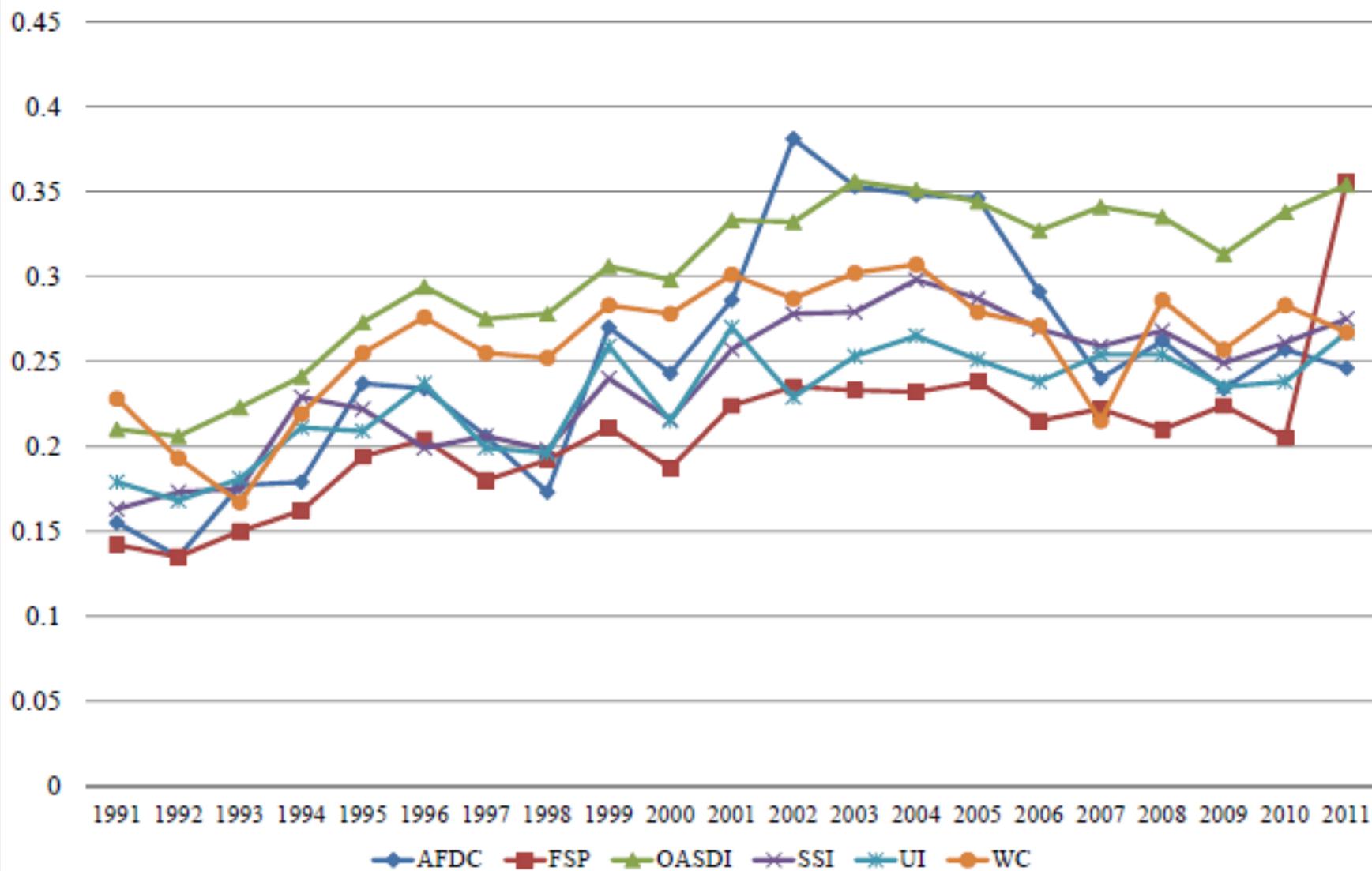**CPS-ADF/ASEC Share of Dollars Imputed**

Does it matter, i.e. what is the bias?

- Depends on focus; consider income and poverty
- The nonresponse rate most common measure of survey quality, but not informative
- Unit nonresponse not a large source of bias for the CPS outcomes examined? (Bee, Gathright, Meyer).
  - Link tax records to addresses of non-respondents
  - No differences between distributions until top percentiles
  - Difference in link rates times nonresponse rate under half a percent: upper bound on poor households missed
- Item nonresponse and consequently errors in imputation important (Bollinger et al. papers)
- We will see that measurement error very important

Data

- ## Household Survey Data
  - 2008-2013 CPS ASEC (income data for 2007-2012)
- ## Cash Welfare and Food Stamp Data
  - 2007-2012 NY OTDA
  - SNAP, TANF, GA
- ## Public and Subsidized Housing Data
  - 2009-2012 HUD PIC and TRACS (gives housing in 2008-2011)

Methods

- Link the data sources using a Protected Identification Key (PIK) attached to each source

- The admin data has a PIK attached more than 99 percent of the time

- The CPS has a PIK attached at the individual level just under 90 percent of time, well over 90 percent at household level (most relevant)

- Use IPW to account for the probability a household has a PIK (doesn't affect results much)

Substitute Admin Data for Survey Data

- Not a new idea but rare for transfer programs
- Way of the future
  - CNSTAT advocating
  - BLS and Census talking about
- We show how it can be done on a timely basis; our CPS data most recent until new release two weeks ago

Methods and extent of misreporting

- Half of SNAP unreported; up to another 20 percent is imputed depending on the year
- Two-thirds of TANF/GA unreported; we combine into PA because there is some program substitution and program confusion
- One-third of housing assisted households missed, but a much larger share of dollars because rental value under-imputed
  - We calculate rental value as gross rent minus tenant payment at household level
  - Because subsidized housing coverage incomplete we rely on survey report if not in admin files

Income measures

- We use two alternative base income measures
  - official pre-tax cash income, or
  - Supplemental Poverty Measure (SPM) type income that is after-tax and includes in-kind transfers

Prototypical Analyses I

- Income distribution: poverty rate, income of bottom vingtiles, deep poverty rate, poverty gap
  - Census (2014) finds poverty rates and poverty gaps high, and both have mostly risen recently though the rate fell last year
  - Burkhauser et al. (2014) find that incomes at bottom have risen as much as those in other income ranges since early 1990s; large role for in-kind transfers
  - Blank and Schoeni (2003) find fall in income at low percentiles over earlier period

Deep poverty rates are highest for rural children

Percent

Legend: Rural population — Urban population — Rural children — Urban children
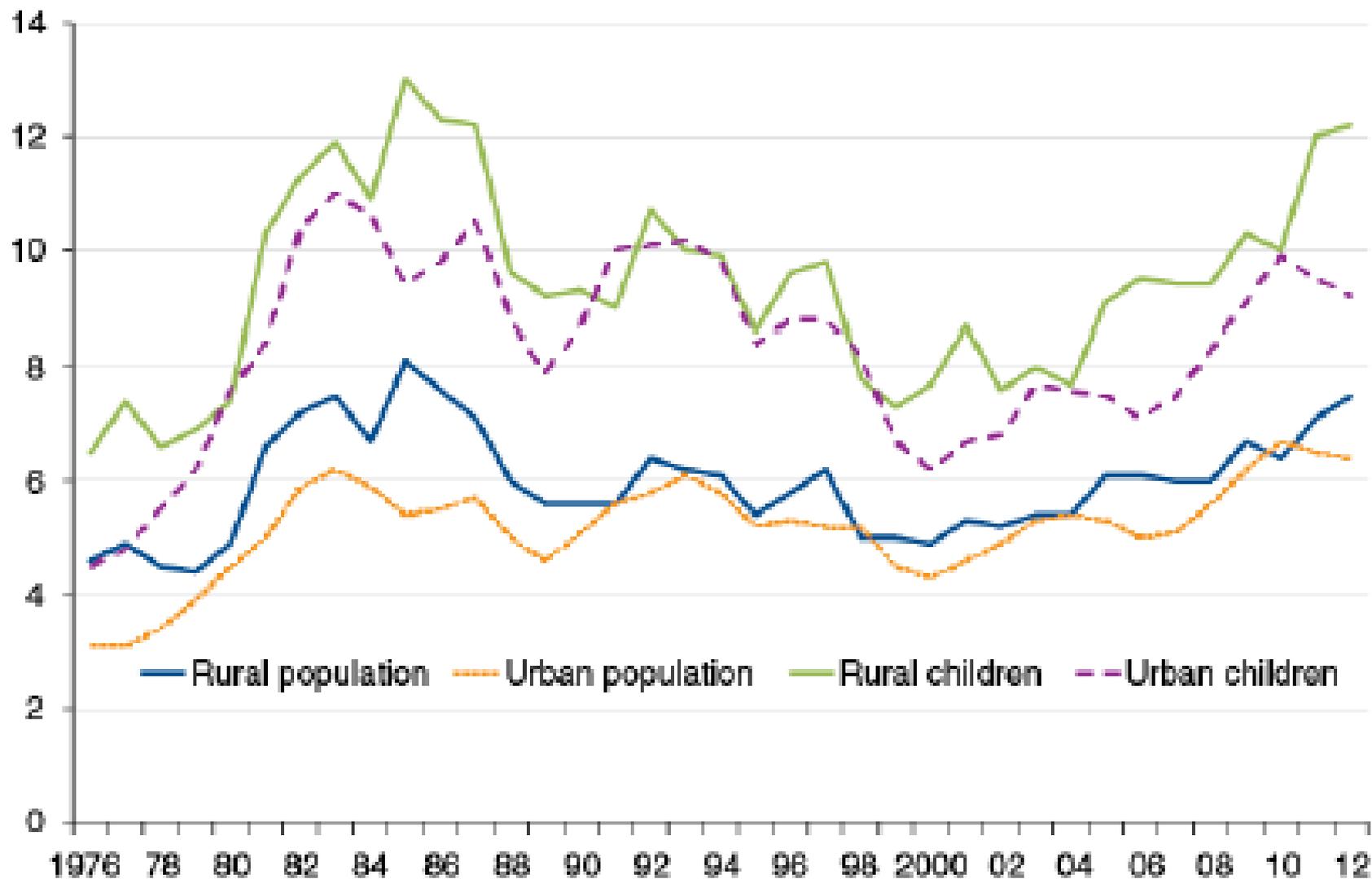
Prototypical Analyses I continued

- ## Income v. Consumption
  - Meyer and Sullivan (many years) find that consumption poverty and consumption percentiles show a different pattern than those using income, one that is much more favorable, especially over the last 15 years or so.
  - We conjecture that much of the difference between income and consumption at the bottom is unreported government transfers

Figure 2. Official and Alternative Income Poverty Rates and Consumption Poverty Rate, 1960–2010[a]

Percent of population

After-tax income poverty rate[c]
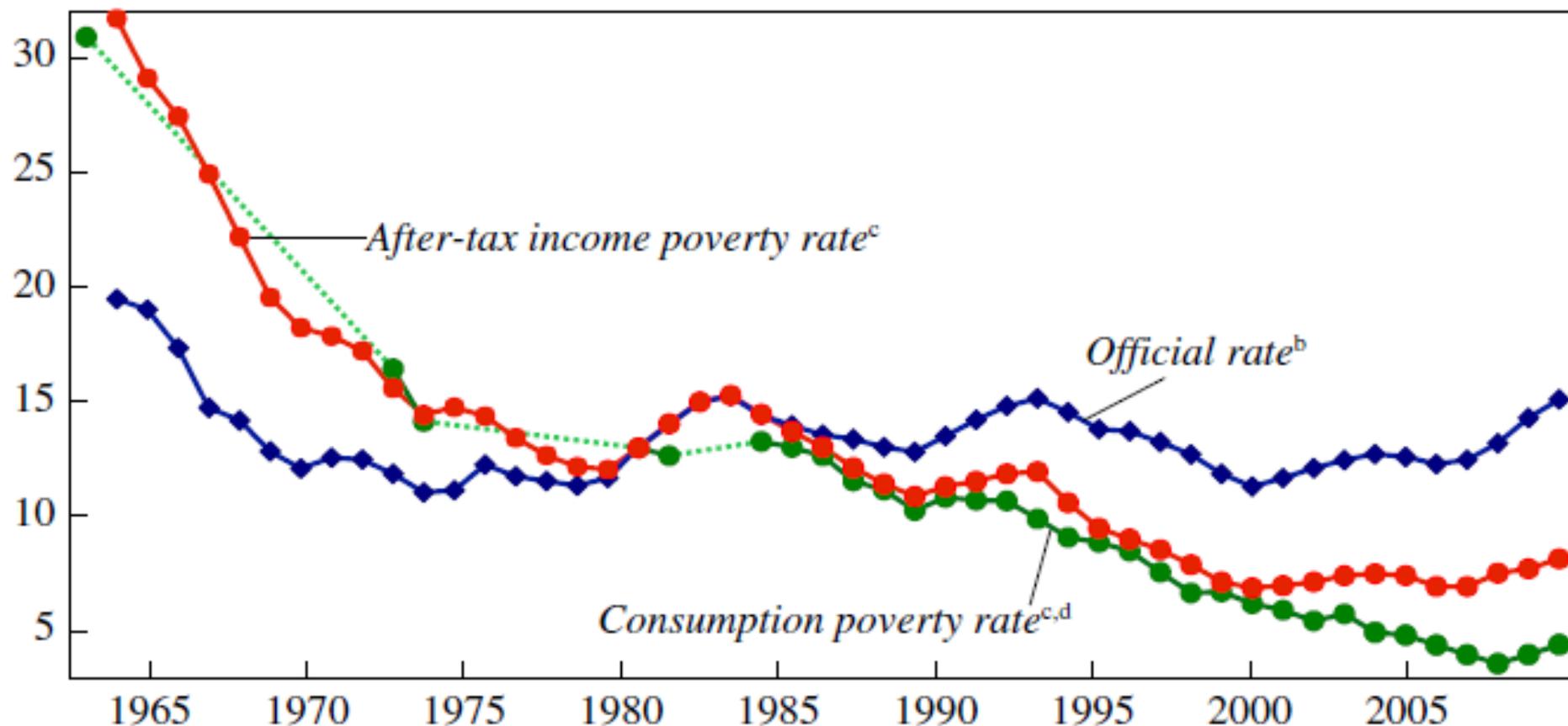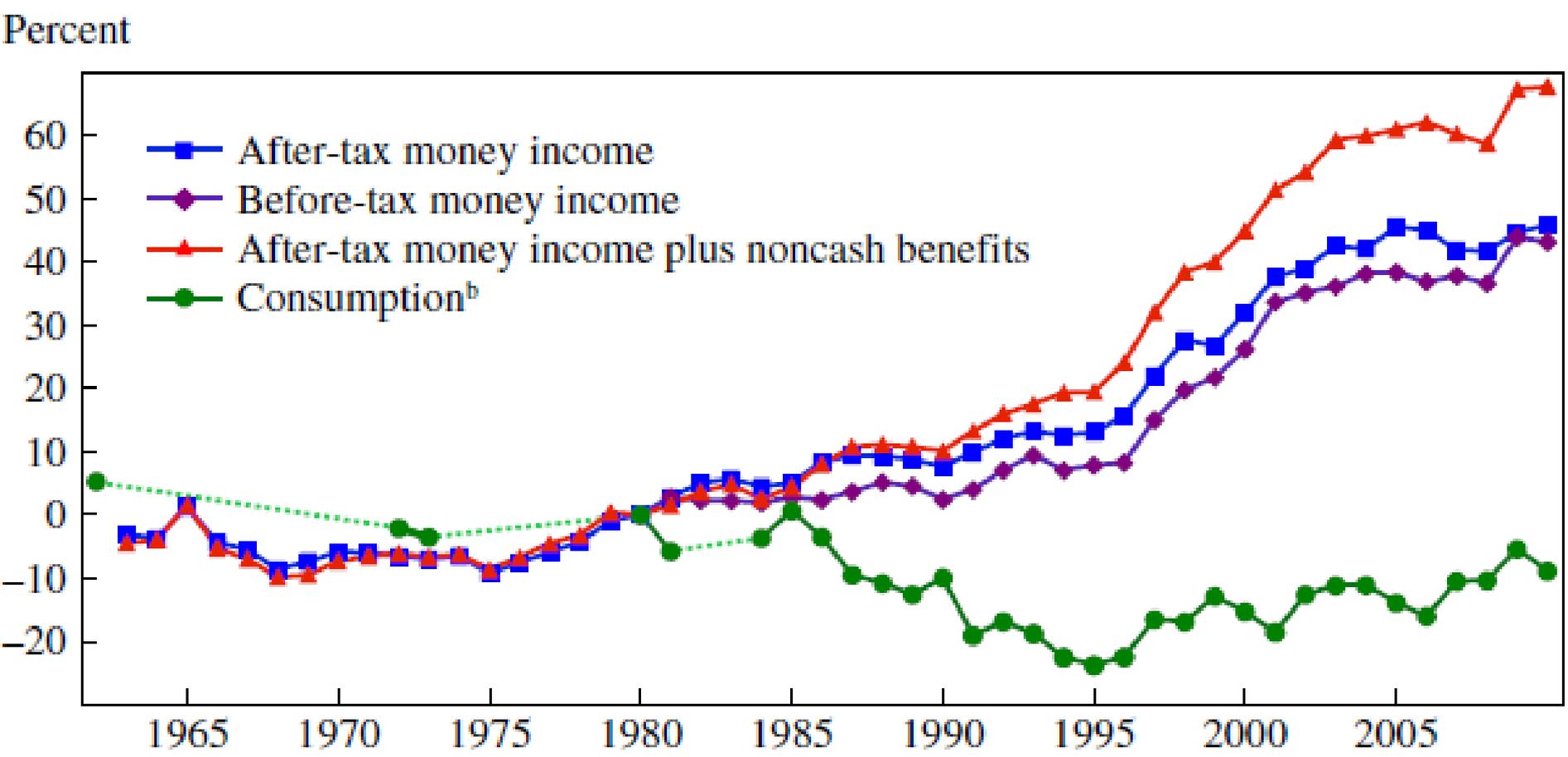
Official rate[b]

Consumption poverty rate[c,d]

Figure 4. Change in the Average Poverty Gap Relative to 1980 for Poor Families for Income and Consumption Measures, 1960–2010[a]

Percent

Legend:
- After-tax money income
- Before-tax money income
- After-tax money income plus noncash benefits
- Consumption[b]

Effect of Missing Dollars on Income Distribution

- Accounting for misreporting more than doubles reported cash income per capita for those in deep poverty
    - 28 percent increase due to PA
    - 10 percent increase due to SNAP
    - 71 percent increase due to housing assistance
- Effect on income fades out quickly as income rises
- For those between half the poverty line and the poverty line the increase is
    - Just over 7 percent for PA and SNAP combined
    - 21 percent for housing assistance

Annual Unreported Per Capita Income by Source 2008-2011				
	< 50% FPL		50-100% FPL	
	amount	% of base	amount	% of base
PA	$ 373	28.60%	$ 187	3.42%
SNAP	$ 135	10.32%	$ 214	3.92%
Housing	$ 932	71.40%	$ 1,150	21.02%
All Programs	$ 1,438	110.17%	$ 1,548	28.28%

Missing Dollars Across the Income Distribution

- ## Public Assistance:
  - Due to low net reporting rates at low income levels; often two-third or more of dollars per person missing for very low reported income cells.
  - Missing dollars fall off quickly as income (and reporting rates) rise
- ## SNAP:
  - Missing dollars peak at 100-150% of the poverty line
  - Remain substantial at higher income levels
- ## Housing Assistance:
  - Missing dollars spread out across lower parts of the income distribution

Deep poor subgroups

- For single mothers, unreported transfers even more of an issue
- Disabled, problem about average
- 65+, problem less important
- But, we don't have administrative data on key programs for disabled and aged
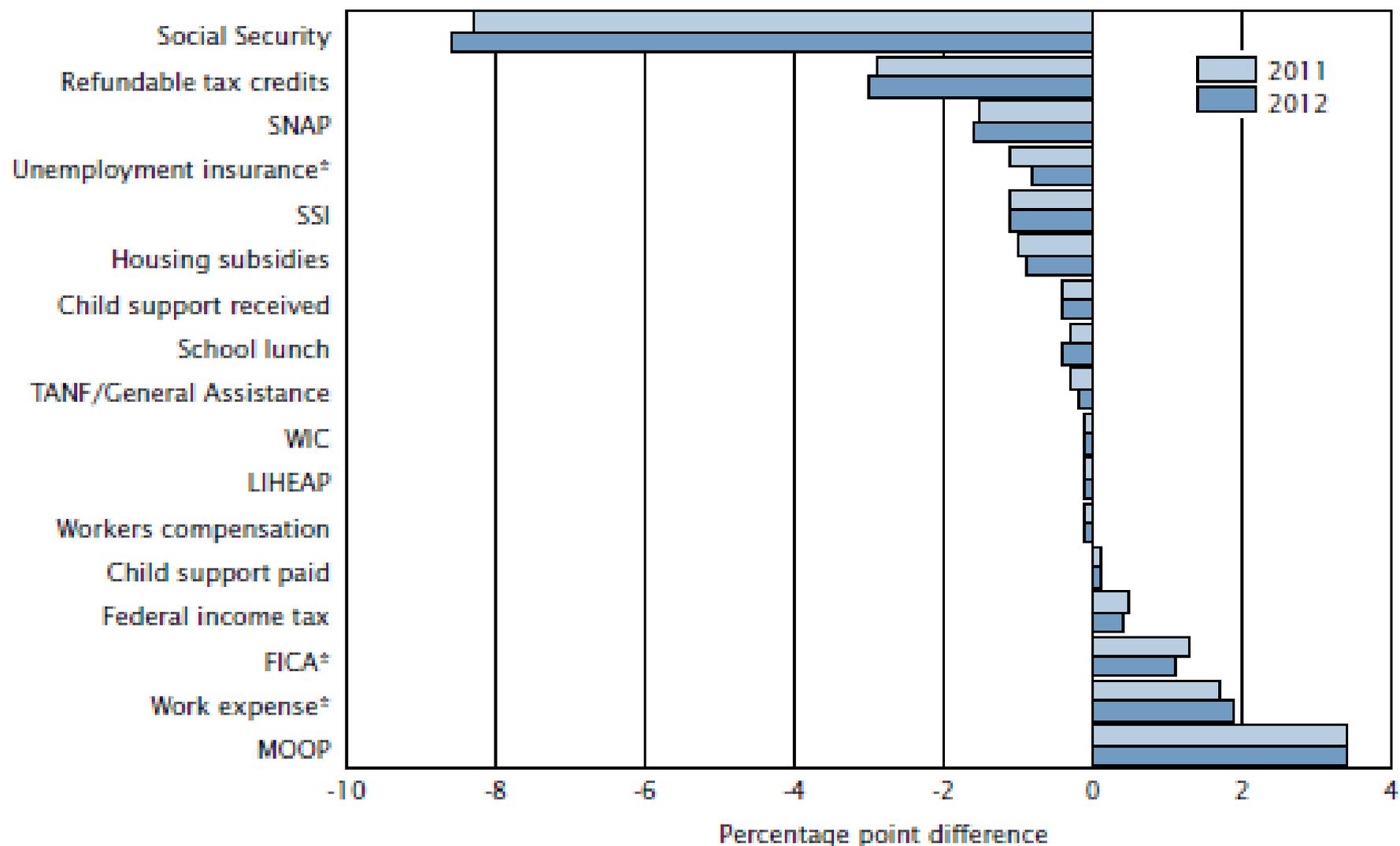
Comments

- We are reporting only the role of *missing* benefits; the role of all SNAP and housing benefits is greater.

- However, we are also not including SNAP and housing assistance in our base income

- We do include these benefits in our base in alternative estimates where base income is a version of SPM income (after-tax plus non-cash benefits as imputed in CPS)

Prototypical Analyses II

- Effects of programs on poverty
  - Census (annual) Supplemental Poverty Measure (SPM) report
  - Scholz, Moffitt and Cowan (2009), Ben-Shalom, Moffitt and Scholz (2012)
  - The latter papers find an important change in redistribution from the very poor to the near poor and from single mothers to the elderly, disabled, and childless. Assumes no behavioral responses

Figure 5.
Difference in SPM Rates After Including Each Element: 2011 and 2012

Legend: 2011, 2012

Categories (top to bottom):
Social Security, Refundable tax credits, SNAP, Unemployment insurance*, SSI, Housing subsidies, Child support received, School lunch, TANF/General Assistance, WIC, LIHEAP, Workers compensation, Child support paid, Federal income tax, FICA*, Work expense*, MOOP

X-axis: -10, -8, -6, -4, -2, 0, 2, 4
Percentage point difference

*Statistically significant change between 2011 and 2012.
Source: U.S. Census Bureau, Current Population Survey, 2012 and 2013 Annual Social and Economic Supplements.

Assumes no behavioral response

- Assumes no behavioral response
  - Scholz, Moffitt and Cowan (2009): "...low-income individuals respond to these incentives, but that the magnitude of the response is small…"
  - Moffitt et al. (2012) bears out above conclusion in simulations.

Some try to account for misreporting

- Some papers try to account for under-reporting
  - Meyer and Sullivan (2006), Meyer (2010)
  - Scholz, Moffitt and Cowan (2009), Moffitt, Scholz (2010), Ben-Shalom, Moffitt and Scholz (2012)
  - Last set of papers most sophisticated, but
    - Uses observed reports to infer true reporting which is biased; see Meyer and Goerge (2012), Meyer and Mittag (2014)
    - Imputes based on who most likely rather than probabilistically
    - Assumes no false positives

Estimates of program effects on poverty

- The unrecorded part of the 3 transfer programs has an important effect on poverty rates and changes in poverty

- For most of the years 2008 to 2011, the poverty reducing effect of various programs is raised sharply when one includes unreported transfers. For 2011, 55-211 percent

- The rise in the effect of the programs over these years is also 40 percent greater when one includes those transfers missed in the survey data

Poverty Reduction 2011				
	Survey Change	Admin Change	Difference	% of Survey
PA	0.31%	0.49%	0.18%	59.3%
SNAP	1.90%	2.94%	1.04%	54.6%
Housing	0.84%	2.60%	1.76%	210.9%
PA, SNAP	2.24%	3.60%	1.36%	60.6%
All three	3.10%	5.92%	2.83%	91.3%
Note: Baseline Poverty Rate in the Survey is 14.42%				

Estimates by subgroup; poverty gap

- Sharp differences by subgroup; for single mothers a 22 percentage pt. reduction from transfers missed

- You miss almost all of the effect of PA on the poverty rate for single mothers; about half or more of the reduction in the poverty gap

- For all groups combined almost half of poverty gap filled by PA, SNAP and housing benefits
  - 30 percent of this missed by the survey data

Prototypical Analyses III

- Disconnectedness
  - Defined as those without work income or welfare income (in practice those with less than one or two thousand dollars of either)
  - Blank and Kovak (2007, 2009) find high rates and find that rates have risen over time;
  - Bitler and Hoynes (2010), Loprest (2011), Loprest and Nichols (2011) and others have looked at "disconnectedness"

Blank and Kovak

"The preceding analysis has demonstrated the serious need for a more effective safety net for these women and their children, warranting an equally serious response by policymakers."

Estimates of disconnectedness: no work or welfare

- We consider a variety of definitions, varying what programs we include, initially require no earnings, no benefits, but then allow 2K in earnings, 1K in benefits
- Levels of disconnectedness overstated by 30-80 percent, combining all years.
- Numbers fall by 2/3 when include SNAP
- Almost no one disconnected when include all cash programs and SNAP
- Share of people disconnected does rise over time still

Disconnectedness Rates 2008-2011	Survey	Admin	% Overstatement
no PA, no earnings	17.1%	12.8%	33.7%
low PA, low earnings	22.8%	17.1%	33.5%
no PA+FS, no earnings	5.3%	3.2%	67.6%
low PA+FS, low earnings	7.4%	5.1%	46.1%
no PA,FS or HS, no earnings	3.6%	1.7%	112.8%
low PA+FS+HS, low earnings	5.1%	3.0%	70.9%
no cash programs, no earnings	5.4%	3.6%	50.2%
low cash programs, low earnings	9.8%	7.0%	39.6%
low cash programs+FS, low earnings	3.5%	1.9%	82.1%

Caveats

- New York, a big state with a robust welfare system
  - PA, SNAP receipt rates higher and benefits per capita higher in NY
  - Housing assistance twice as common as in rest of U.S.
- Only admin data on a few programs (SSI, OASDI data from survey)
- Only six years; problem getting worse
- Treat admin data as truth; less good with housing data which have been scrutinized less

Conclusions

- Accounting for unrecorded transfers sharply changes our understanding of the income distribution,
  - Particularly at the bottom
  - Particularly for single mothers
- Unreported transfers lead to sharp understatement of program effects
- Unreported transfers lead to an overstatement of the number of those "falling through the cracks"
- Administrative data can be combined successfully with survey data on a timely basis

Extensions

- Role of programs in the recession?
- Don't see large changes in income at bottom; other have argued this (Burkhauser; Sherman), but not widely known
- How do correction methods in past work perform?
  - Simple methods like scaling up benefits, or
  - Complicated ones like imputing recipients until totals match
- More states, more programs?

Acknowledgements

- We thank the Census Bureau and the NY OTDA for providing the data.

- The views expressed are not necessarily those of the U.S. Census Bureau and the New York State Office and Temporary and Disability Assistance

- The Census Bureau and the New York State OTDA have not yet reviewed the results

Extra Slides

More on Multiple Programs In NY

- When report one program, more likely to report a second

- False negative less likely when a true program recipient of another program

- False positives more likely when a true program recipient for another program

- Rate of no program receipt sharply overstated

- Rate of multiple program receipt sharply understated

- Rate of FS nonreceipt by PA recipients greatly overstated

Imperfect Linking and Biases

- Partly PIKed households (14% in ACS, approx. 20% in CPS); state movers follow same argument.

- Let the 2 x 2 matrix of row probabilities be:

  Survey

  p_{00} p_{01}

  Admin

  p_{10} p_{11}

  Row probabilities sum to 1; 0= don't receive, 1=receive.

  Let p_1 be the probability of reporting receipt for people

  affected (moved into the first row) by this issue.

  Let p' be the matrix for those unaffected.

  Then, if $p'_{11} > p_1 > p'_{01}$, false negatives biased down,

  false positives biased up.

- Outright PIKing errors (when information wrong) have different bias. Could lead to overstatement of false negatives.

Hot Deck Imputation Methods

- Match observations with missing data to a donor observation

- CPS: 648 cells, but at national level.