Data to Examine Consumption Poverty and Inequality in the U.S.: 1960-2008

CE Survey Data Users' Needs Forum
June 22, 2010

Bruce D. Meyer
University of Chicago and NBER

Based on work with
James X. Sullivan
University of Notre Dame

I. Introduction

- Question: How have poverty and inequality changed over the past five decades?
  - We look at both income and consumption based measures of well-being
  - We emphasize the importance of measurement issues for understanding poverty and inequality patterns
  - We refine the methods to convert expenditure data into consumption data

I. Income v. Consumption: Conceptual

- Meyer and Sullivan (2003, 2007)
- Conceptual issues favor consumption.
  - Permanent income (Cutler and Katz 1991; Poterba 1991)
  - Public and private insurance
  - Access to credit

II. Income v. Consumption: Data Quality

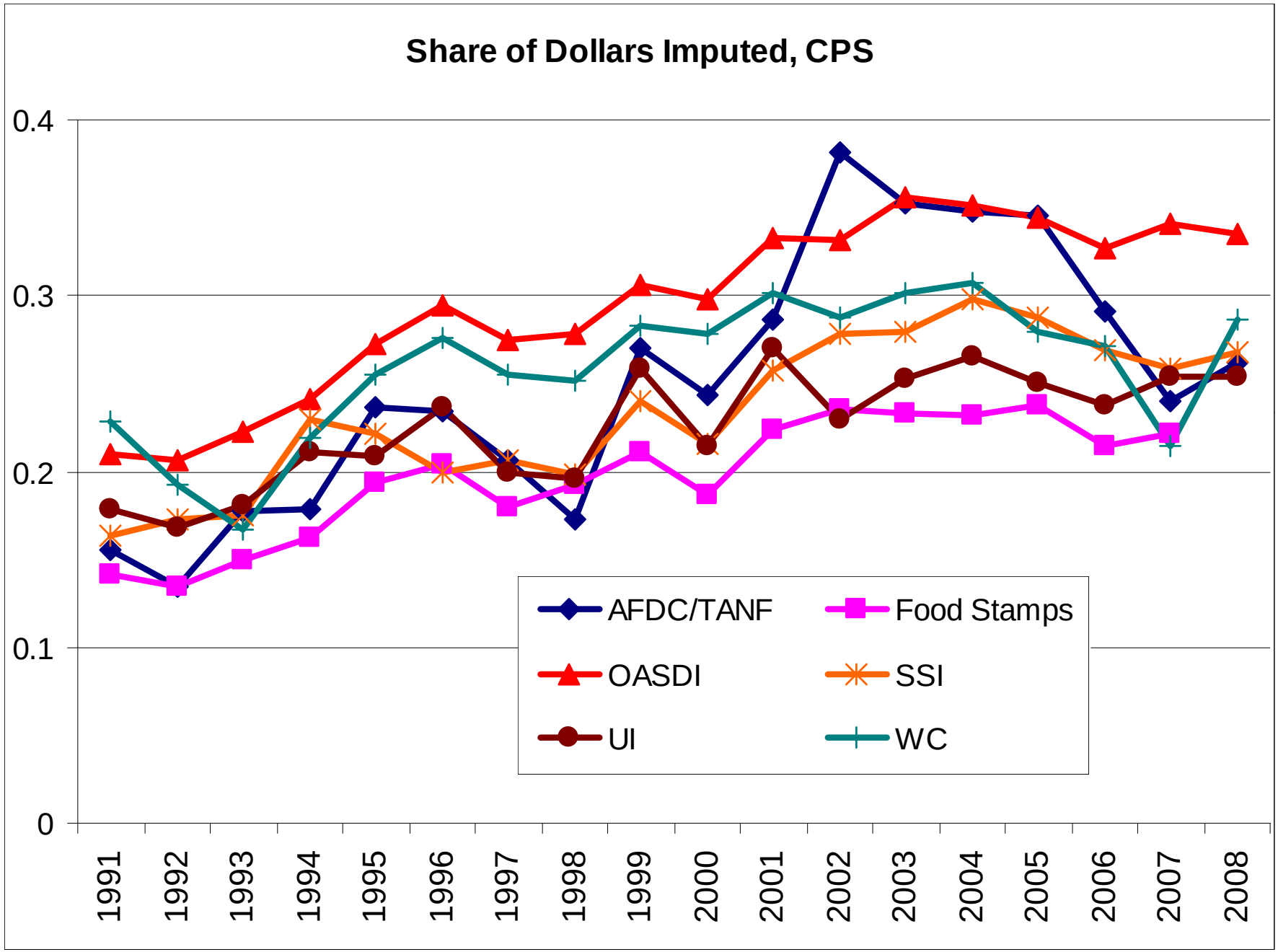
- Reporting issues are split between income and consumption
  - Ease of reporting v. sensitive topics
  - Nonresponse
  - Under-reporting
- Low percentiles of expenditures greatly exceed low percentiles of income

Nonresponse Rates

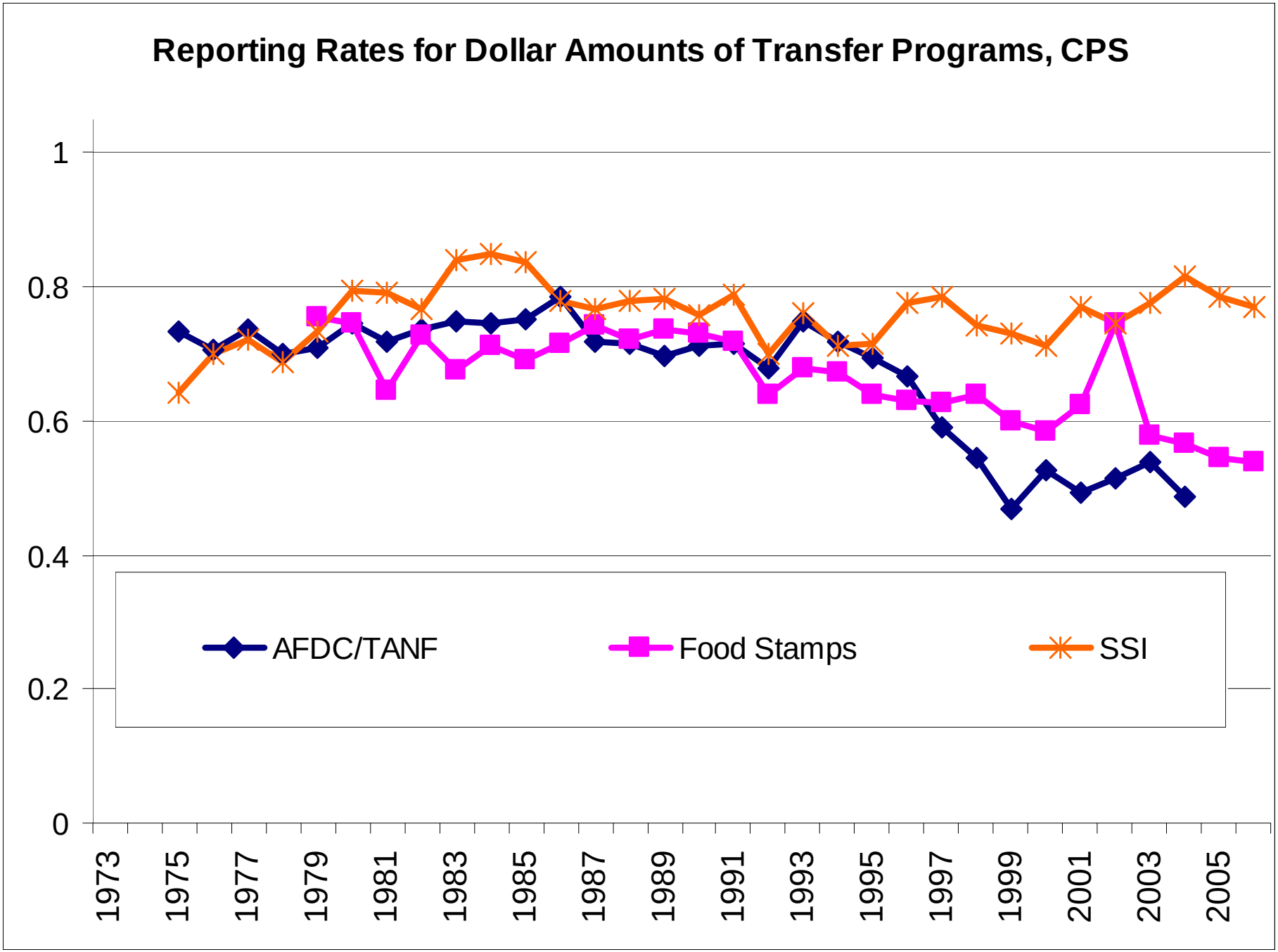
Table 5

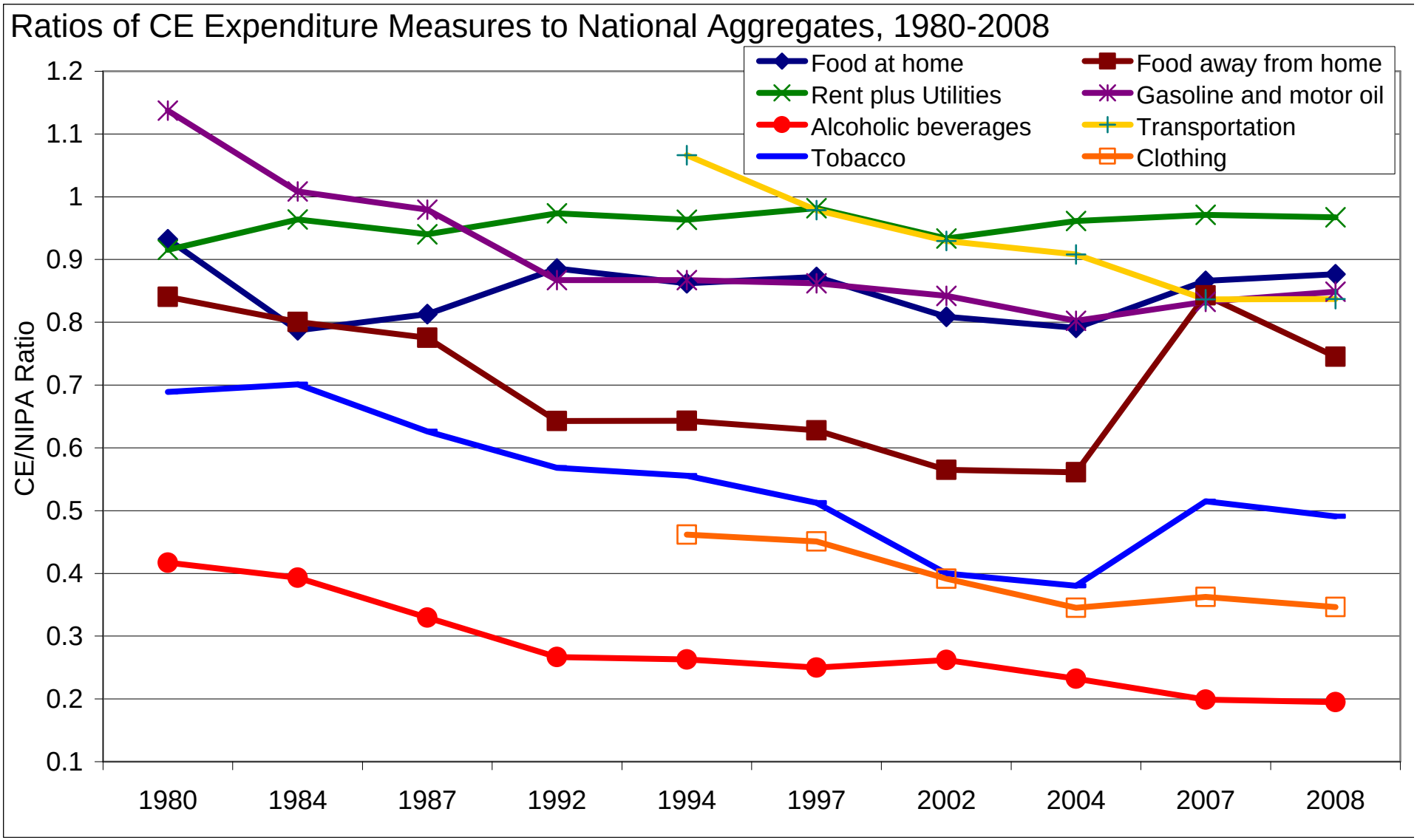
Survey Nonresponse and Imputations Rates, CPS and CE Interview Survey, 1993-2007

	Survey Nonresponse		Imputation Rates			
	CPS-ASEC/ADF	CE Survey	CPS-ASEC/ADF			CE Survey
			Pre-tax Money Income	After-tax Income[a]	After-tax Income[b]	Total Expenditures
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
1993	0.154	0.156	0.153	0.252	0.444	0.104
1994	0.154	0.167	0.156	0.259	0.456	0.104
1995	0.154	0.194	0.180	0.295	0.496	0.104
1996	0.157	0.211	0.190	0.316	0.518	0.125
1997	0.144	0.199	0.204	0.344	0.548	0.128
1998	0.161	0.201	0.219	0.375	0.574	0.129
1999	0.144	0.202	0.217	0.382	0.589	0.149
2000	0.159	0.200	0.248	0.428	0.626	0.154
2001	0.162	0.220	0.255	0.434	0.628	0.163
2002	0.150	0.220	0.262	0.422	0.604	0.179
2003	0.160	0.214	0.254	0.389	0.565	0.184
2004	0.174	0.240	0.256	0.401	0.583	0.167
2005	0.167	0.255	0.239	0.373	0.557	0.194
2006	0.171	0.234	0.252	0.403	0.592	0.228
2007	0.156	0.262	0.251	0.398	0.591	0.130



Meyer, Mok, and Sullivan (2009)


Reporting Rates for Dollar Amounts of Transfer Programs, CPS
1
0.8
0.6
0.4
0.2
0
AFDC/TANF
Food Stamps
SSI
1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005


Ratios of CE Expenditure Measures to National Aggregates, 1980-2008
CE/NIPA Ratio
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
1980
1984
1987
1992
1994
1997
2002
2004
2007
2008
Food at home
Food away from home
Rent plus Utilities
Gasoline and motor oil
Alcoholic beverages
Transportation
Tobacco
Clothing

II. Income v. Consumption: Data Quality

- Refinement to income tend to move it toward consumption (alternative poverty, housing, MOOP, etc.)
- CE provides much info to approximate consumption that is missing in CPS (housing and vehicle characteristics, MOOP).
- Consumption is more strongly associated with other measures of well-being

II. CPS Income Data

- Current Population Survey – ASEC/ADF
  - 1963-2008
  - Taxes calculated using TAXSIM
  - Census has imputed noncash benefits since 1980.
  - These imputed benefits have some drawbacks

III. CE Consumption and Income Data

- Consumer Expenditure (CE) Interview Component
  - 1960/61, 1972/73, 1980-1981, 1984-2008
  - 1982-1983 only urban consumers; also because summary measures of aggregated expenditures are not provided it makes it difficult to use
  - Recent improved timeliness of data releases is welcome; talk of speeding up releases further?

III. CE Consumption and Income Data

- Consumer Expenditure (CE) Interview Component raw data
  - Mostly use family files: summary expenditures
  - Also use detailed expenditure files: vehicles, debt, Medicaid enrollment, HI coverage
  - And member files: exact age composition of CU

III. CE Consumption Data

- We modify expenditures to approach consumption
  - We make many improvements in the measurement of consumption at the bottom
  - Rental equivalent for owner-occupied housing
    - We checked that it relates sensibly to reported home values
    - Others have related reported home values to sales prices in other datasets.
  - Impute value of public/subsidized housing using detailed housing characteristics
    - Make adjustment based on PSID info on rental equivalent
    - Adding rental equivalent to survey would be helpful

III. CE Consumption Data

- Flow value of vehicles (based on more than 350,000 purchase prices)
  - Use equations to predict purchase price for those without it
  - Complicated set of regressions to determine implicit prices of vehicle characteristics depending on what information is missing.
  - Use data to determine depreciation that goes into flow value
  - Validated using NADA data
  - Unfortunate that make but not model available beginning in 2006.

III. CE Consumption Data

- Medical care, health insurance
  - Subtract out MOOP. Imputed in CPS in proposed Supplemental Poverty Measure.
  - Use information on Medicaid, Medicare, and Private HI coverage.

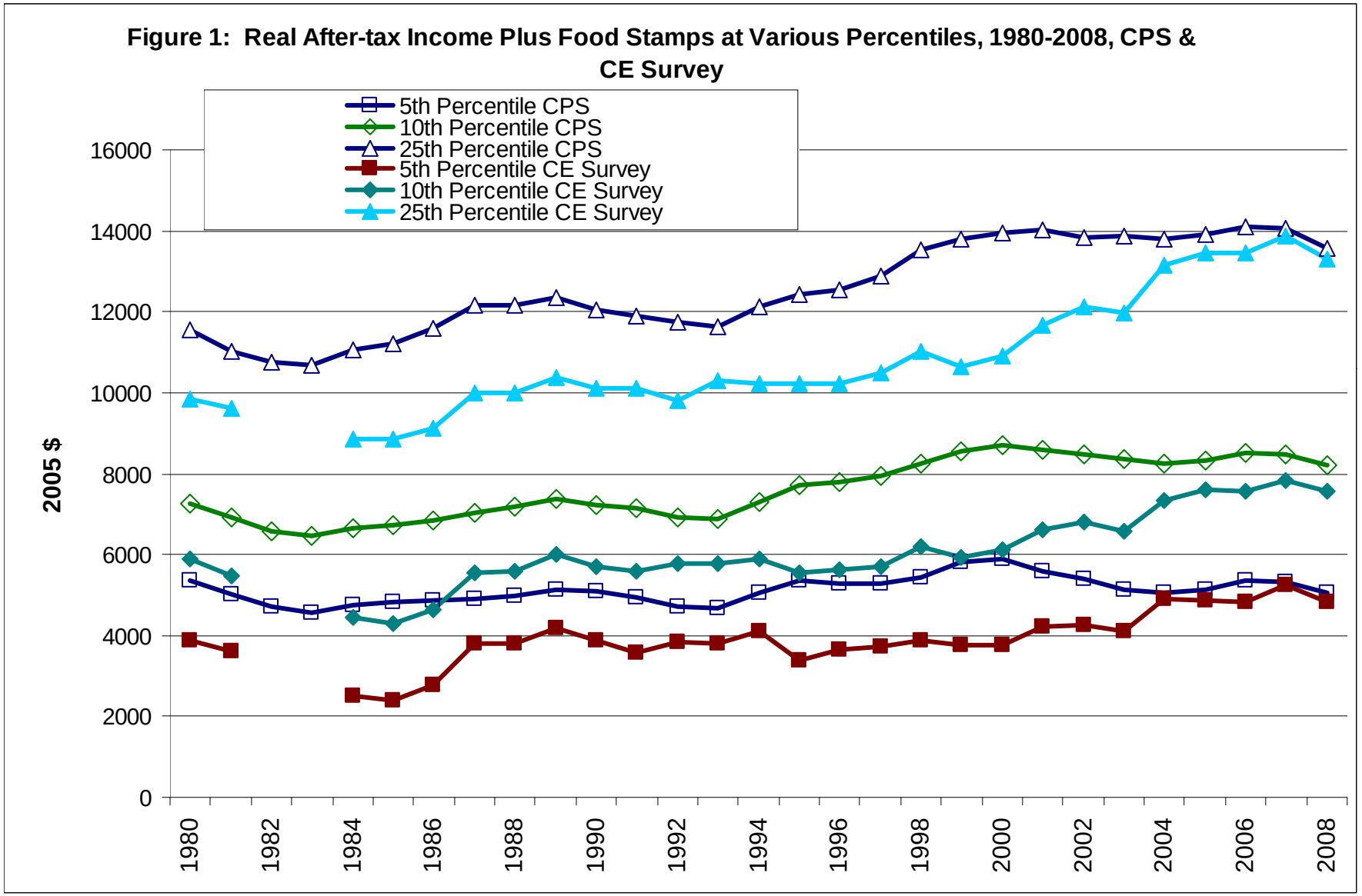
III. General Issues in CE

- We use annualized quarterly data
- We have compared one quarter to four, and there is some understatement of dispersion inherent in relying on one quarter.
- This problem is likely to be much more severe if one relies on two weeks of expenditures to infer consumption in the diary data.
- Comparisons of one week of diary data to two weeks shows differences in the distribution of expenditures.

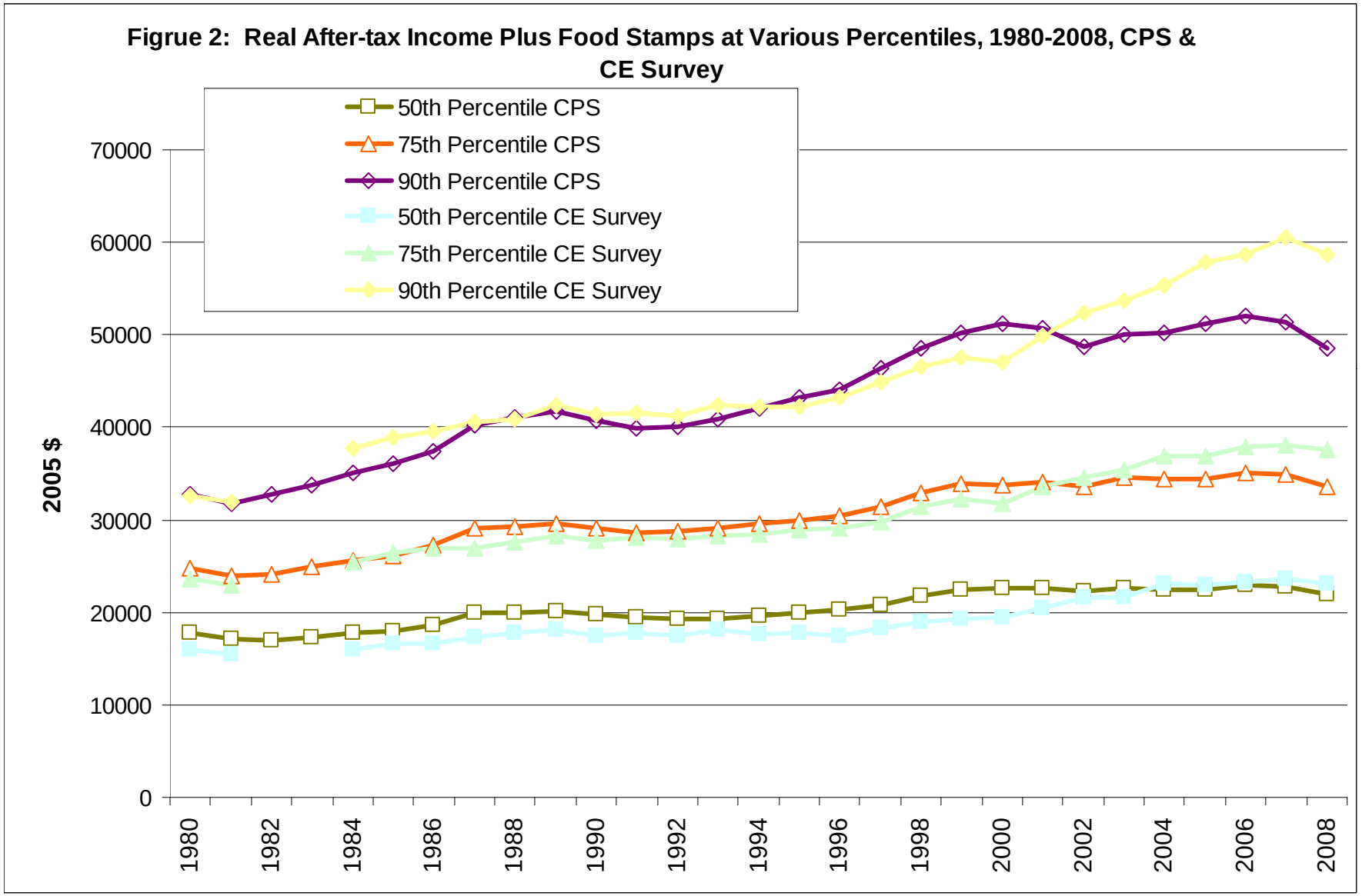
III. CE Income Data

- We use TAXSIM as reported income tax payments are very different from estimated taxes.
  - NBER willing to supply code to implement in CE
- State IDs missing for 16 percent of the sample we used from the 1990s in our AER paper.
- Imputation of income began in 2005.
- Could reconciliation of income and consumption be brought back?

Figure 1: Real After-tax Income Plus Food Stamps at Various Percentiles, 1980-2008, CPS & CE Survey



Figrue 2: Real After-tax Income Plus Food Stamps at Various Percentiles, 1980-2008, CPS & CE Survey



VI. Core Consumption

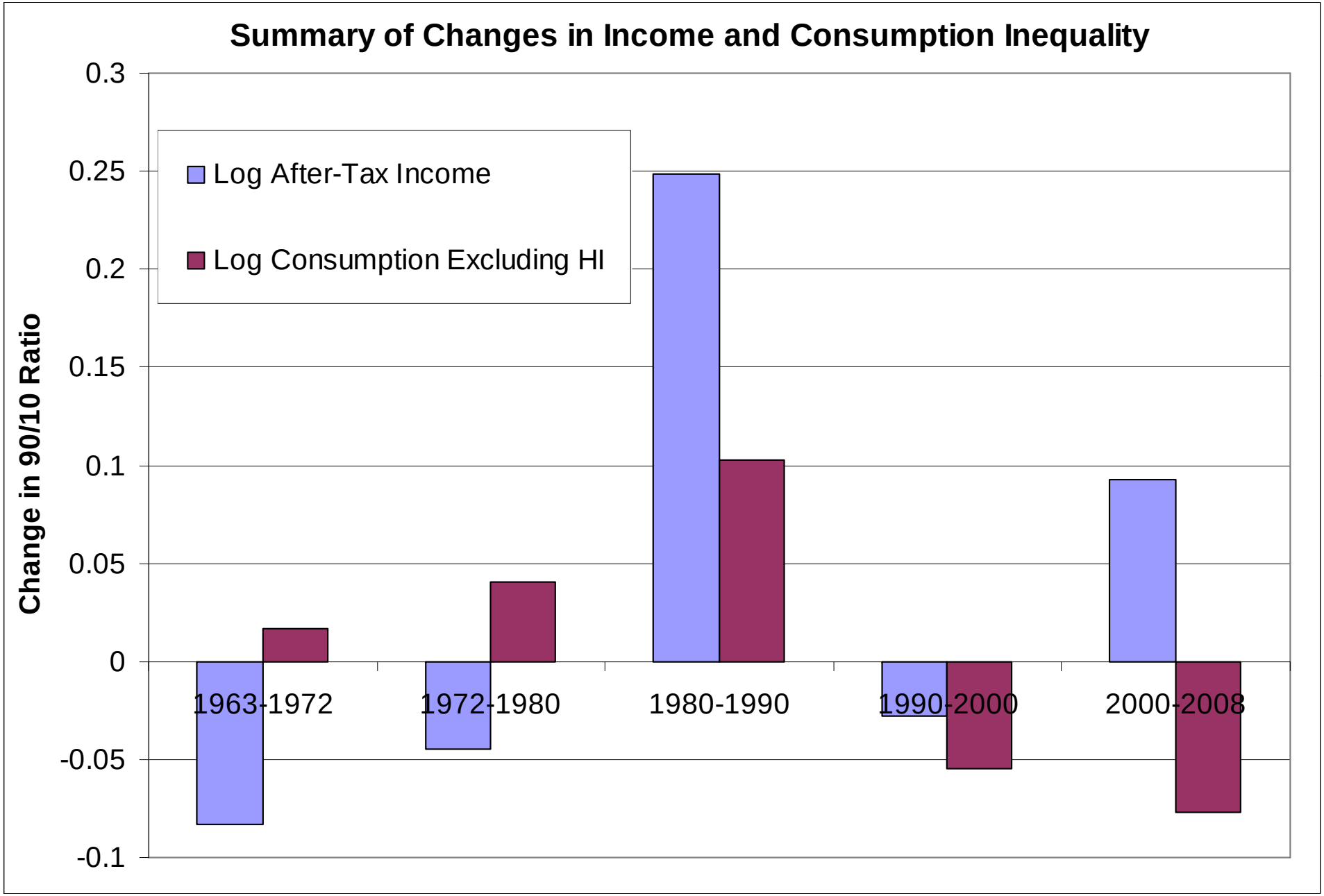
- We look at a subset of total consumption that includes important spending categories that tend to be well reported:
  - Housing
  - Food at home
  - Transportation
- For those near the poverty line, Core is 80% of non-medical consumption in early 1980s
- Information is needed to compare CE totals to NIPA aggregates. Knowing which categories of expenditures line up well with NIPA would be helpful. An earlier Garner et al. paper did this, but NIPA categories have changed.

VII. Predicted Consumption

- We regress total consumption measures on a cubic in core consumption, a cubic in the age of the head, education of the head dummies, family type dummies, and race dummies.
- We use data from 1980-81, because total expenditures in the CE Survey compare more favorably to NIPA in the early 1980s than in recent years.
- Coefficients from this regression are then used to predict a value of the consumption measures for each consumer unit in all years.
- R-squared = 0.72

VIII. Results

- Do income and consumption poverty and inequality differ?


Summary of Changes in Income and Consumption Inequality
Change in 90/10 Ratio
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.1
Log After-Tax Income
Log Consumption Excluding HI
1963-1972
1972-1980
1980-1990
1990-2000
2000-2008

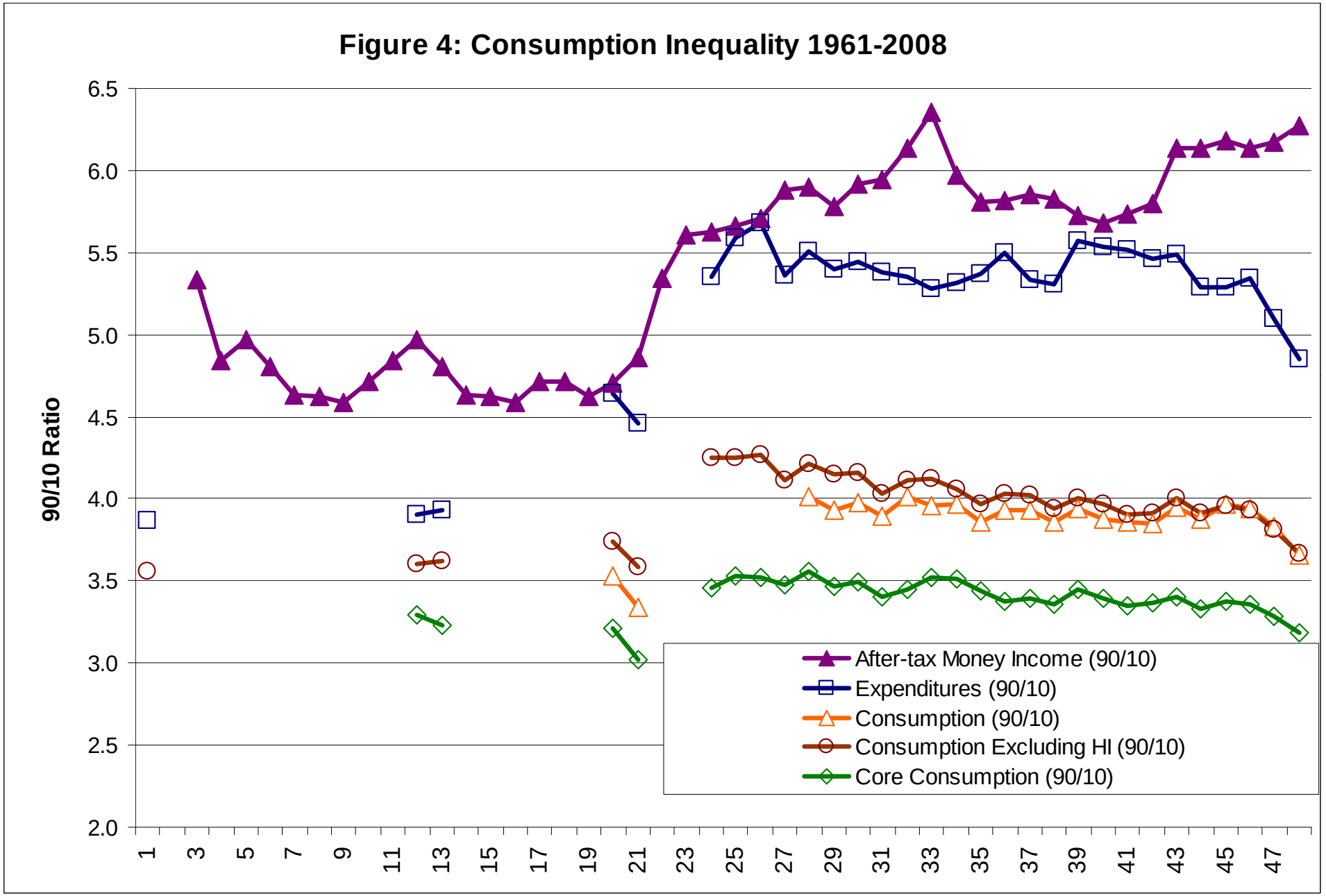


Figure 4: Consumption Inequality 1961-2008
90/10 Ratio
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37
39
41
43
45
47
After-tax Money Income (90/10)
Expenditures (90/10)
Consumption (90/10)
Consumption Excluding HI (90/10)
Core Consumption (90/10)

XI. Conclusions

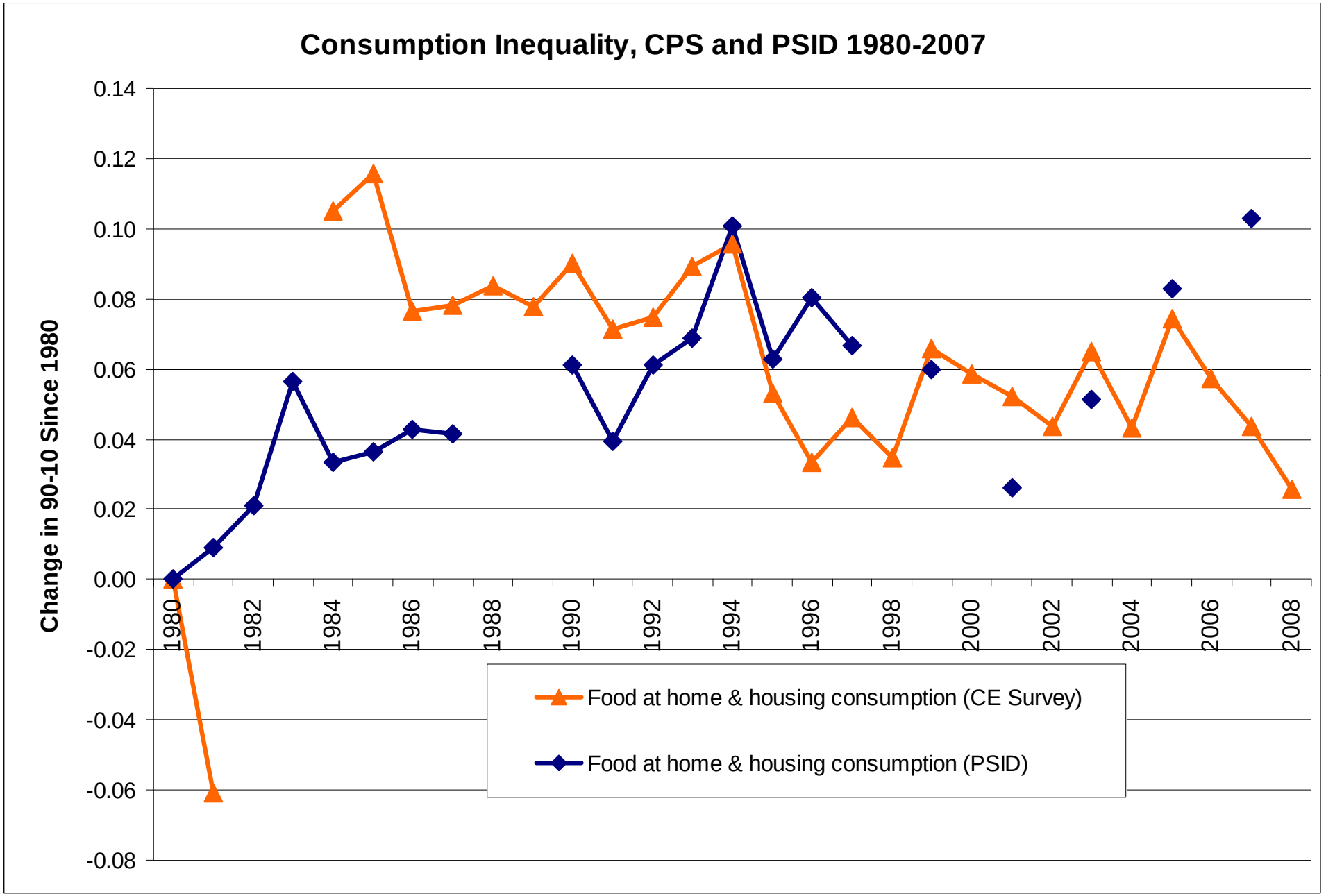
- Consumption data extremely useful to look at measures of well-being.
- Consumption poverty and inequality are quite different from their income cousins.

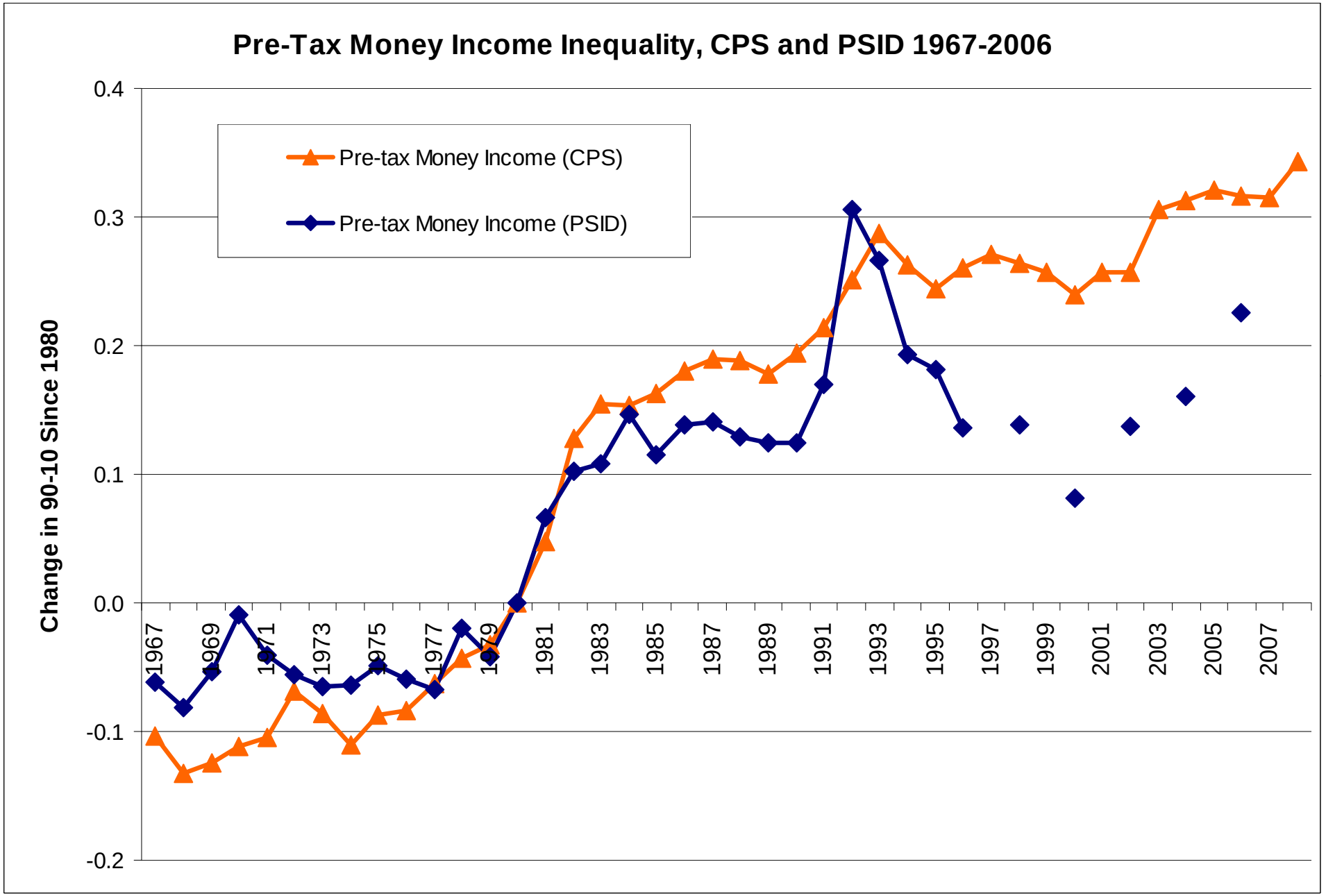
XI. Conclusions: Data Suggestions

- Recent improvements helpful
  - Imputation of income
  - Improved timeliness of data release
- Opportunities for improvement
  - Information on categories compatible with NIPA or more regular comparisons to NIPA totals
  - Suppression of vehicle model starting in 2006
  - High fraction of units with suppressed or recoded state id
  - Make data available at RDC?
  - Use TAXSIM?
  - Reconcile Y and Expenditures?

IX. Comparisons Across Data Sets

- How does consumption inequality in the CE Survey compare to that in the PSID?
  - Food and housing
- How does income inequality in the CPS compare to that in the PSID?
  - Pre-tax money income


Consumption Inequality, CPS and PSID 1980-2007
Change in 90-10 Since 1980
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
Food at home & housing consumption (CE Survey)
Food at home & housing consumption (PSID)


Pre-Tax Money Income Inequality, CPS and PSID 1967-2006
Change in 90-10 Since 1980
0.4
0.3
0.2
0.1
0.0
-0.1
-0.2
Pre-tax Money Income (CPS)
Pre-tax Money Income (PSID)
1967
1969
1971
1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007

the ONION
America's Finest News Source

September 6, 2007 | Issue 43•37

In The Know: Are America's Rich Falling Behind The Super-Rich?

Panelists discuss a new study showing the gap between the wealthy and the absurdly wealthy is widening, and how we can help the merely rich catch up.

I. Introduction

- Some previous work has examined income and/or consumption poverty or inequality
  - P60 Series Reports (annual)
  - Gottschalk and Danziger (2005)
  - Burkhauser et al. (various)
  - Johnson, Smeeding, and Torrey (2005)
  - Krueger and Perri (2006)
  - Heathcote, Perri, and Violante (2010)
  - Attanasio, Battistin and Ichimura (2004)

Figure 2: Real Changes in Consumption at Various Percentiles, 1972-2008

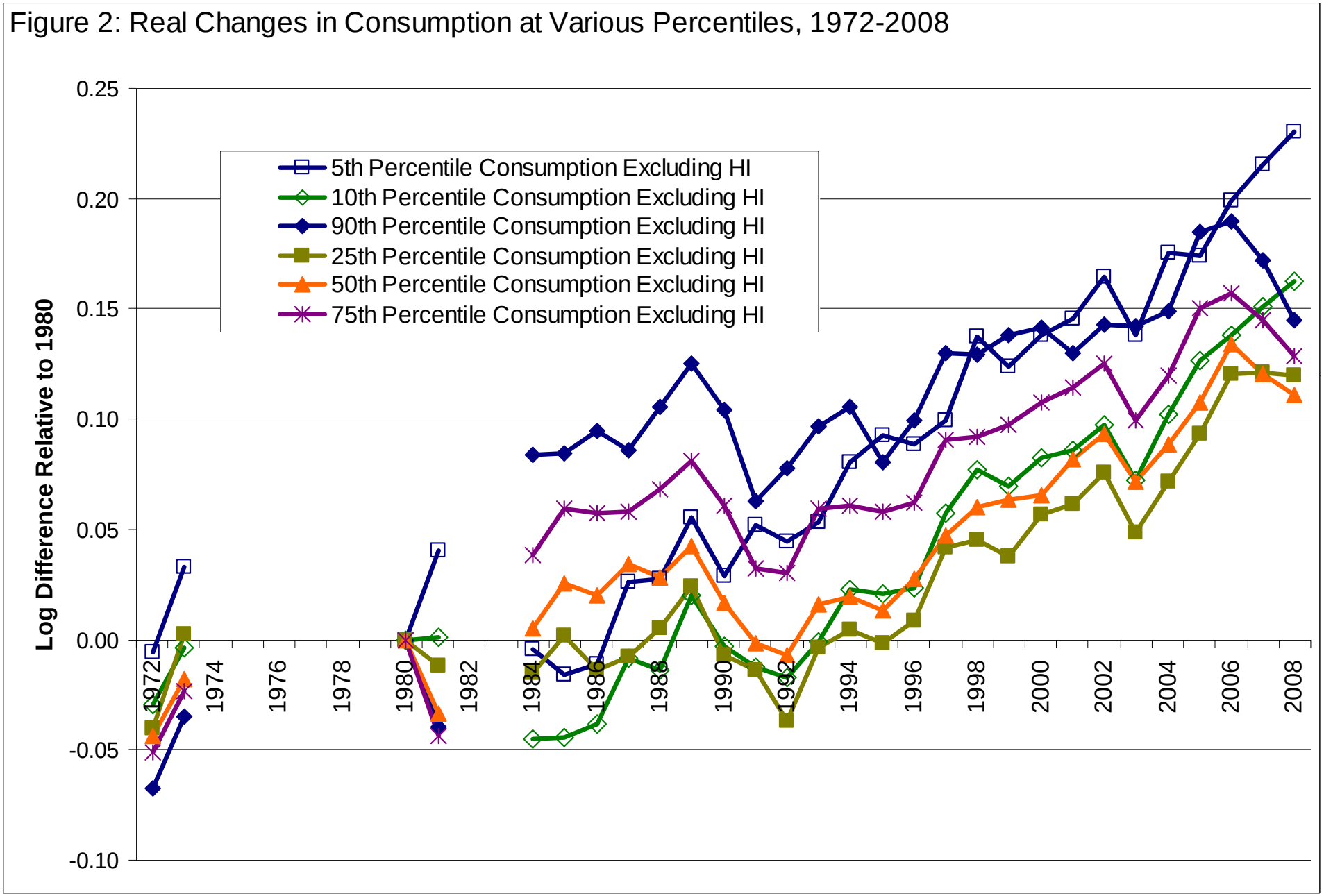


Figure 5: Consumption Inequality 1961-2008