Income and Consumption Based Poverty Measures in the HRS

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RAND

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Background

- Official poverty rates are income based.
- But consumption more closely related to well-being
- Particularly relevant for elderly
- Why save during work life if not to dissave after retirement?
  - Prior to retirement: Consumption < income
  - After retirement: Consumption > income

Background (cont.)

- Many prior studies of well-being based on consumption
- Our contribution:
  - Health and Retirement Study both for income and consumption
  - Wealth, income and consumption
  - Many personal and household characteristics

Objectives

- Comparison of income-based poverty measure in HRS with official measure
  - Innovations in HRS in measurement of economic variables
- Relationship between income-based and consumption-based measures in HRS
- Official rates ⇔HRS income⇔HRS consumption
- Relate difference to personal and household characteristics
  - Composition of household
  - Wealth
  - Education

Official Poverty Measure

Annual Social and Economic Supplement to Current Population Survey

A “respondent” answers for all HH members

CPS Income

- Large number of income components
- Respondent answers for each household member about each component
- Considerable opportunity for item nonresponse or error

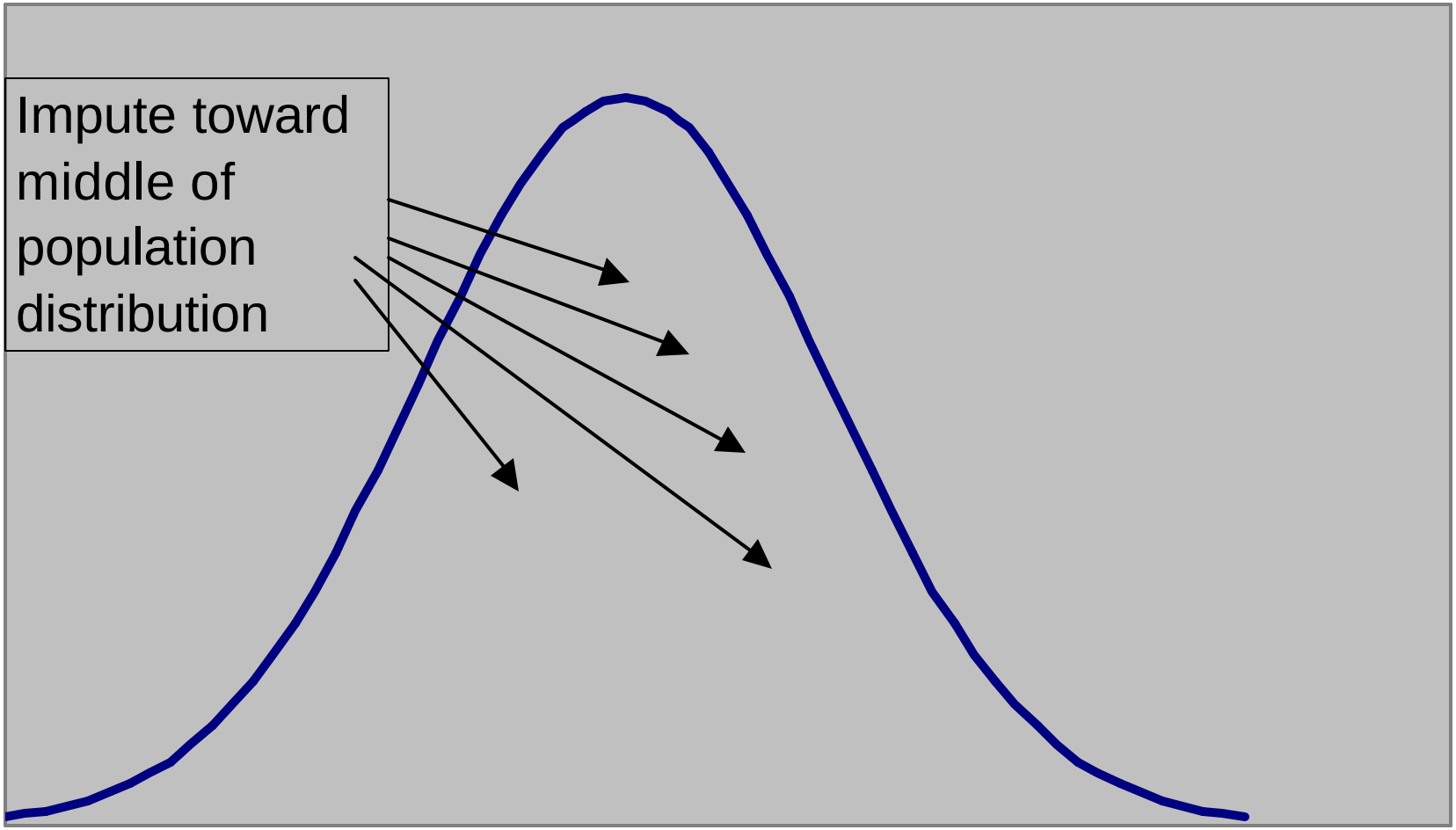
Item nonresponse for income items

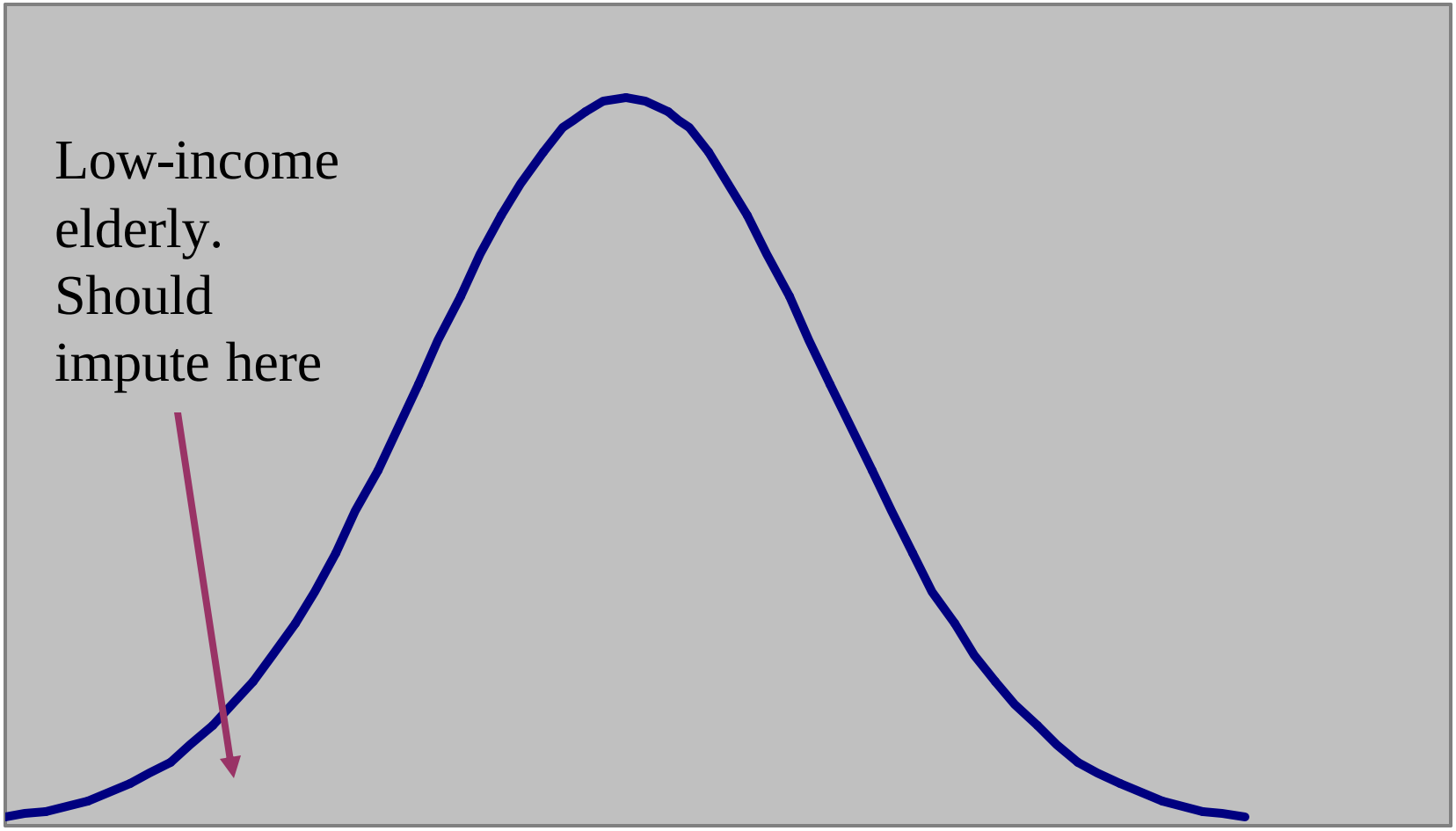
12.4% overall but much higher for some items

Imputations for missing values with covariates

- O.k. for population averages, not very good for tails of distributions.

Distribution of income from asset





Over-estimate income:

Under-estimate poverty

Income Measures in the HRS

- Financial respondent reports for spouse and others in HH
- Important difference from CPS: HRS is a person-based survey not a household survey.
- Especially important in complex households (people living together who are related but not married).

Multi-person households

- Example, elderly widow and her daughter and son-in-law (owner of house)
  - CPS: daughter or son-in-law reports on HH income
  - HRS: widow reports for herself; daughter and son-in-law are other people in HH so widow reports for them.
- CPS format: better household income (but worse about income of widow).

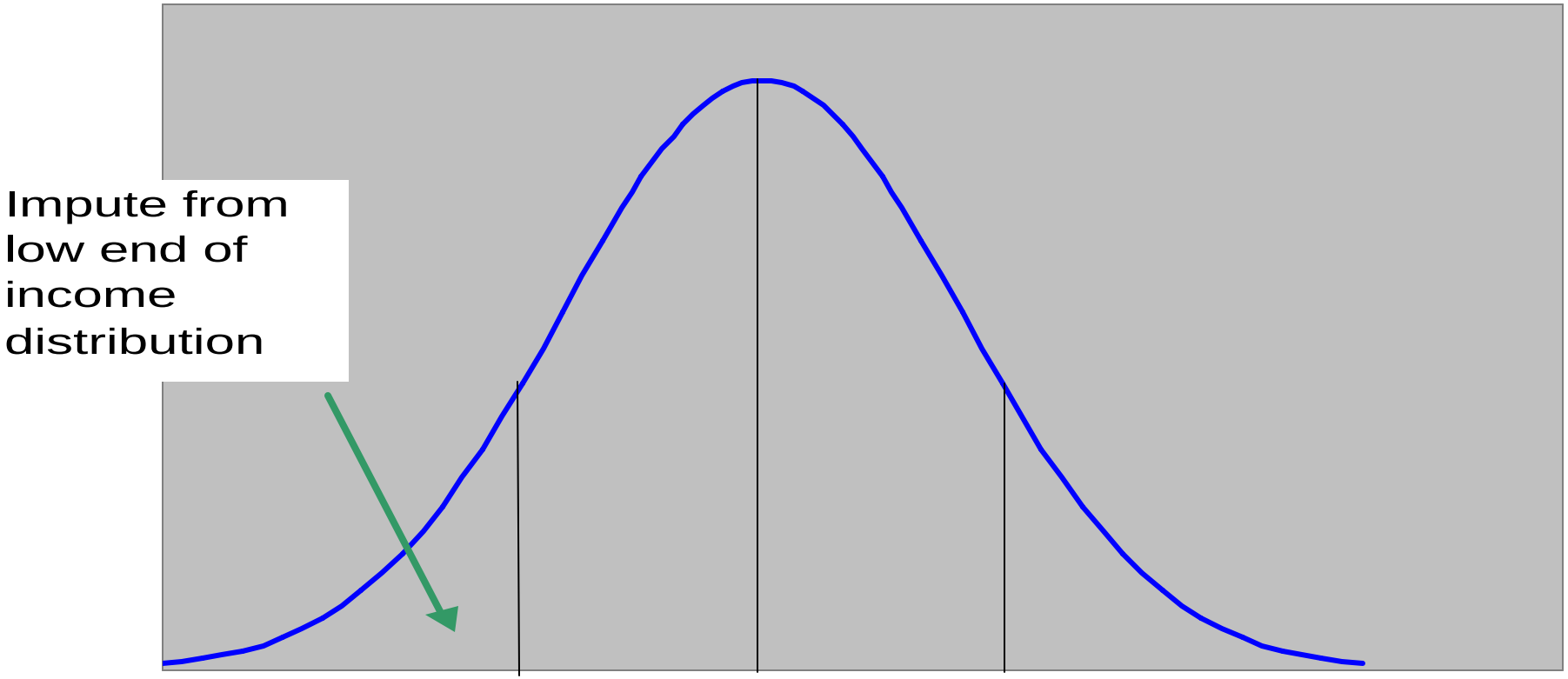
Innovations in survey methods in HRS

- Unfolding brackets for item nonresponse
- Integration of income and asset questions

Unfolding brackets for item nonresponse

- “Would it be less than $1000, more than $1000 or what?”
- Follow-up with additional bracketing questions
- Now possible to impute into lower part of income distribution

Income distribution with brackets



Thus could impute low values in each of several income categories: unlikely without brackets

Lower income, higher poverty rate

Integration of income and asset questions in HRS

- Income from assets: waves 1 and 2 income asked separately from asset amount. From wave 3 on, two questions linked

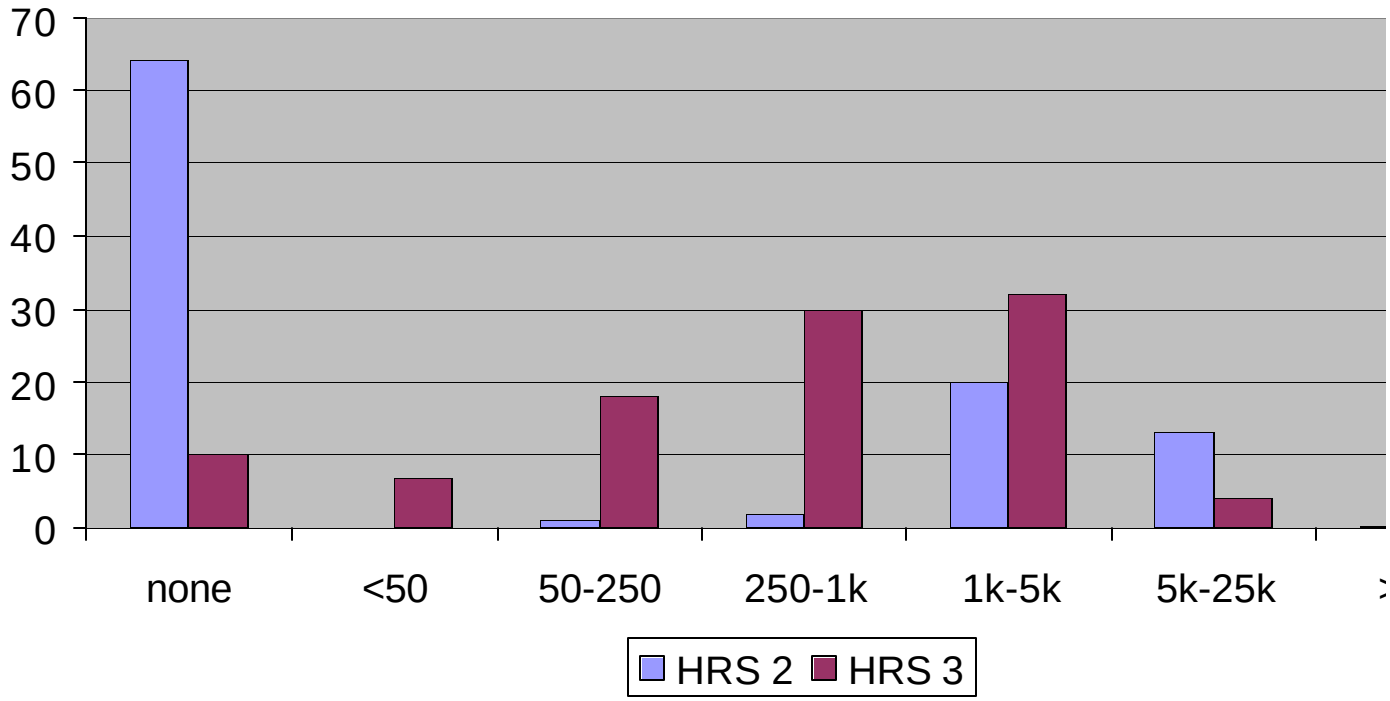
- Example
  - Stock or mutual fund ownership (Y/N)
  - Stock value $
  - Income from those stocks
- Repeated for other asset types

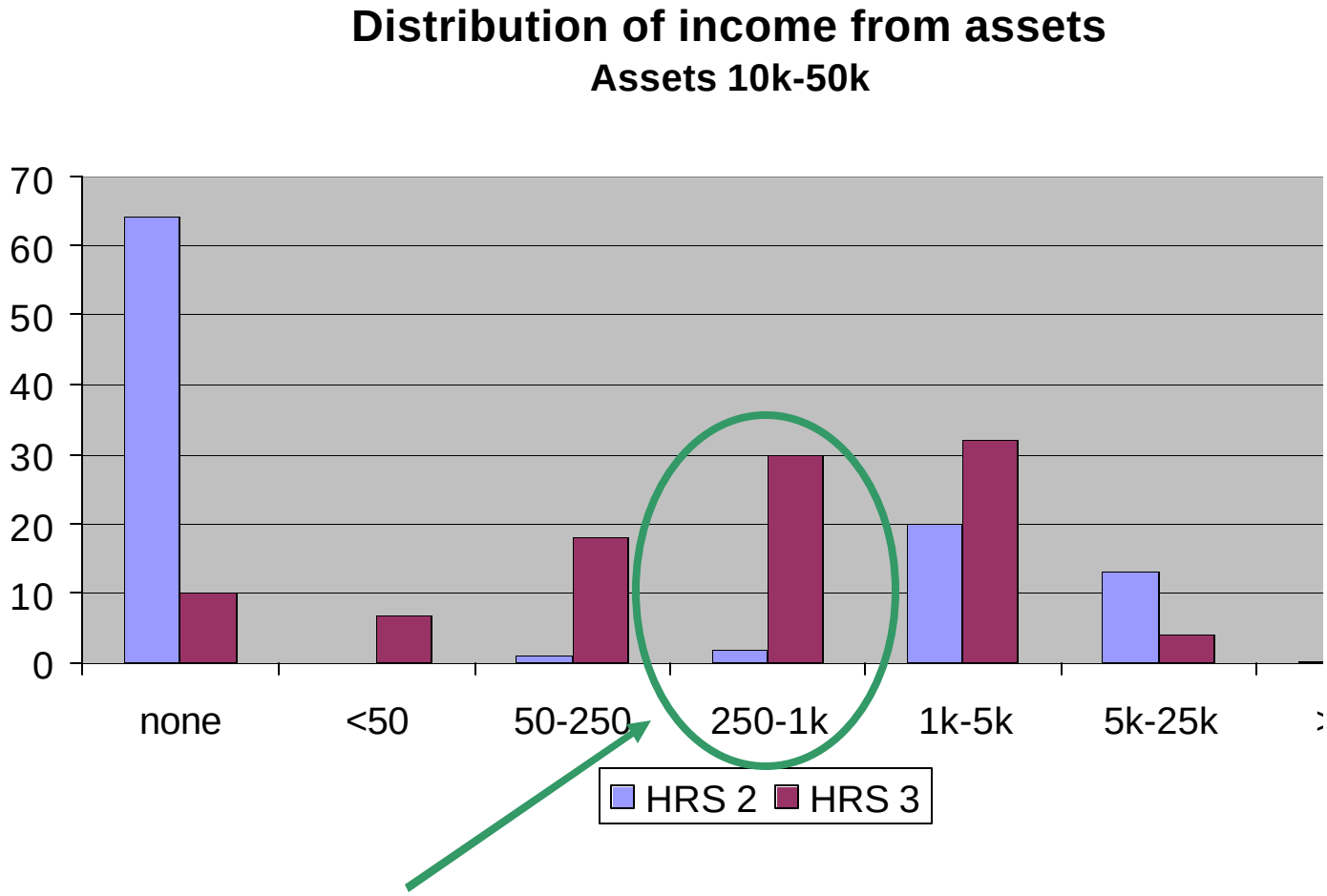
Integration of income and asset questions in HRS (cont.)

- Substantially increased income from assets HRS wave 2 to wave 3, especially four financial assets
  - Mean interest and dividends more than doubled
  - Wave 2: 81% had at least one of the four financial assets
    - 35% of owners had some interest or dividend income
  - Wave 3: 81% ownership
    - 76% of owners had some interest or dividend income

Distribution of income from assets

Assets 10k-50k





Among asset values of $10k-$50k, 30% had income of $250-$1,000 in HRS 3

Integration of income and asset questions in HRS (cont.)

Could affect reported income of even those with incomes near poverty line: e.g. elderly widows with little income beyond Social Security but with some assets.

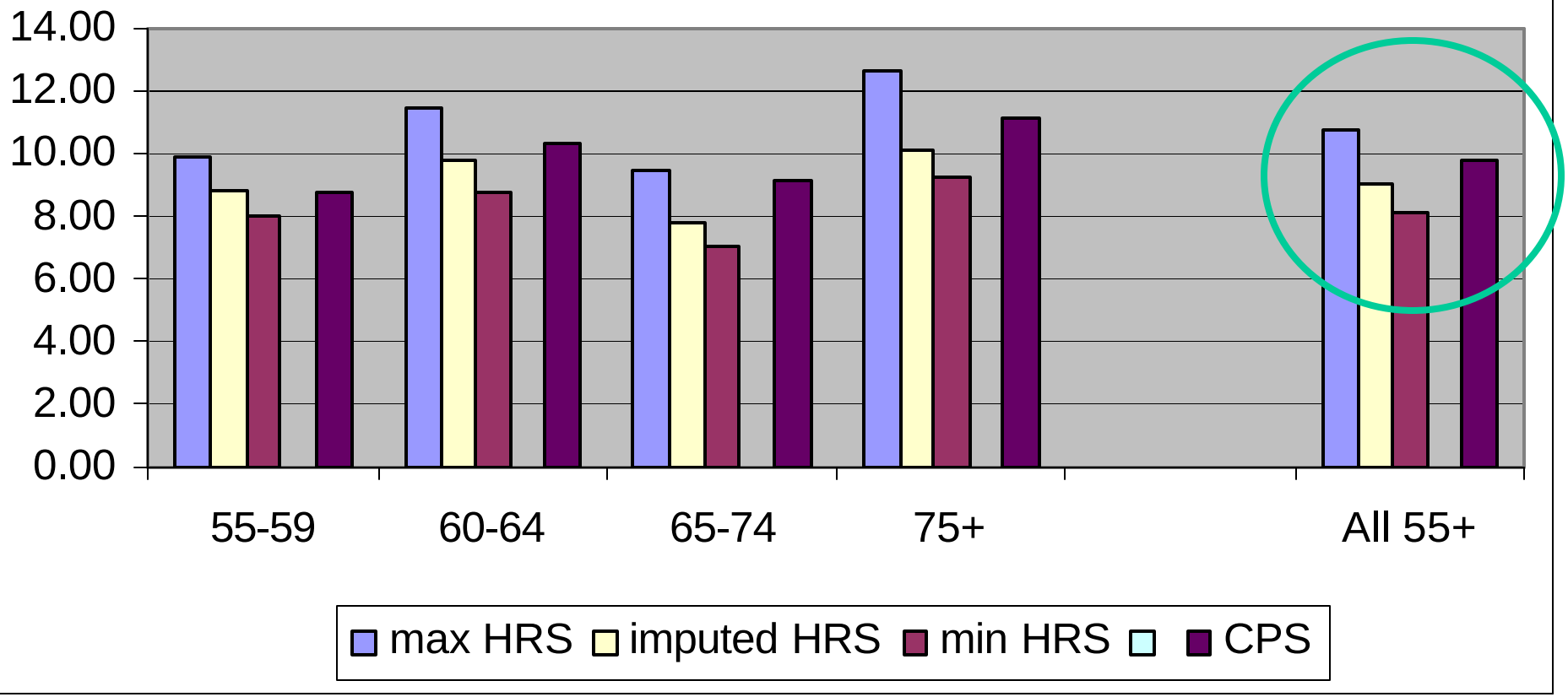
Summary: Innovations in survey methods in HRS

- Bracketing: expected to increase measured poverty
- Better income from assets: expected to reduce measured poverty
- Overall? Likely to vary by age.
  E.g. elderly widows may well have some assets

Measurement problem in HRS (and CPS): composite households

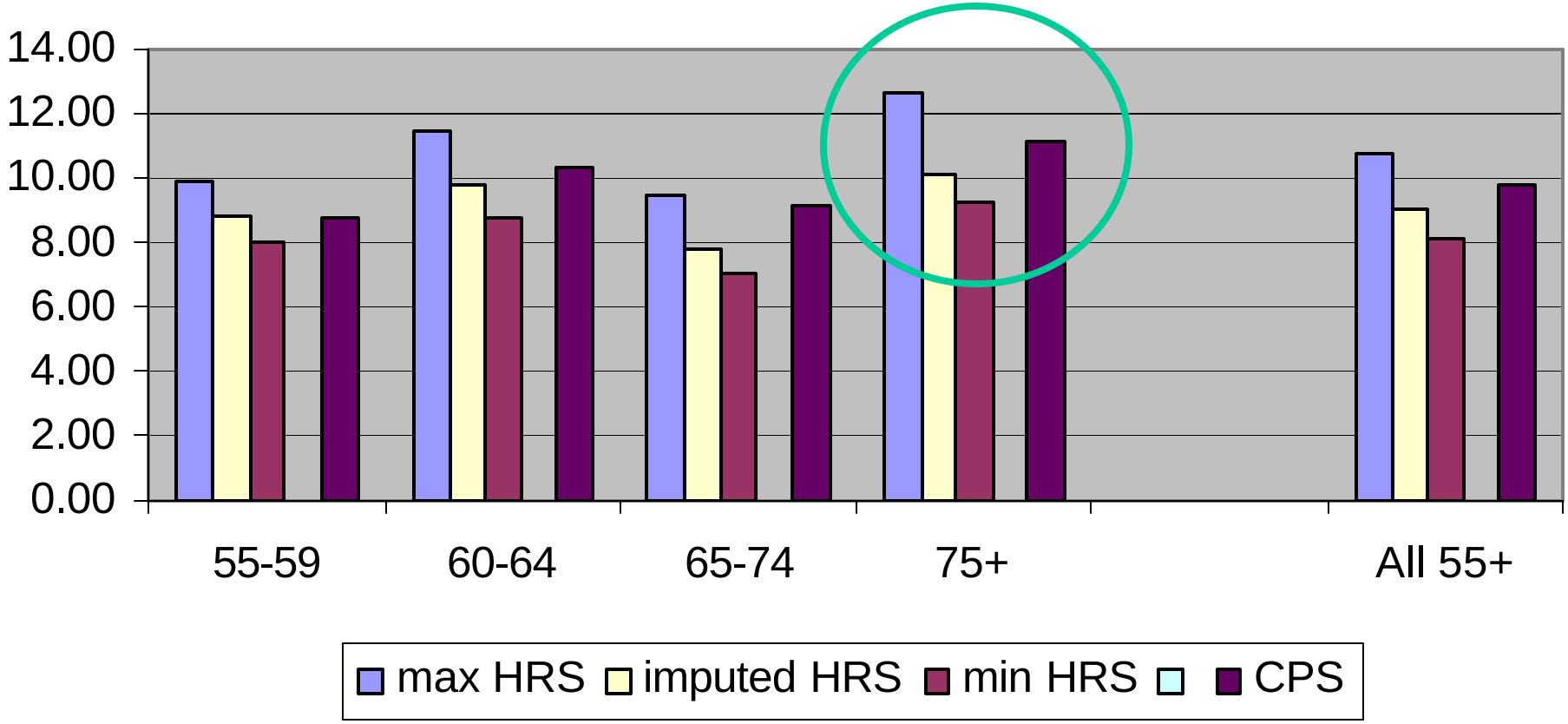
- Financial respondent in HRS (respondent in CPS) reports income of non-core HH members
  - Item nonresponse
  - Some bracket information but not complete bracket information
  - Can bound poverty rate, however:
    - Assume minimum in bracket: how many not in poverty
    - Assume maximum in bracket: how many in poverty
  - Also impute using brackets

Poverty rates (%): CPS and HRS (weighted)



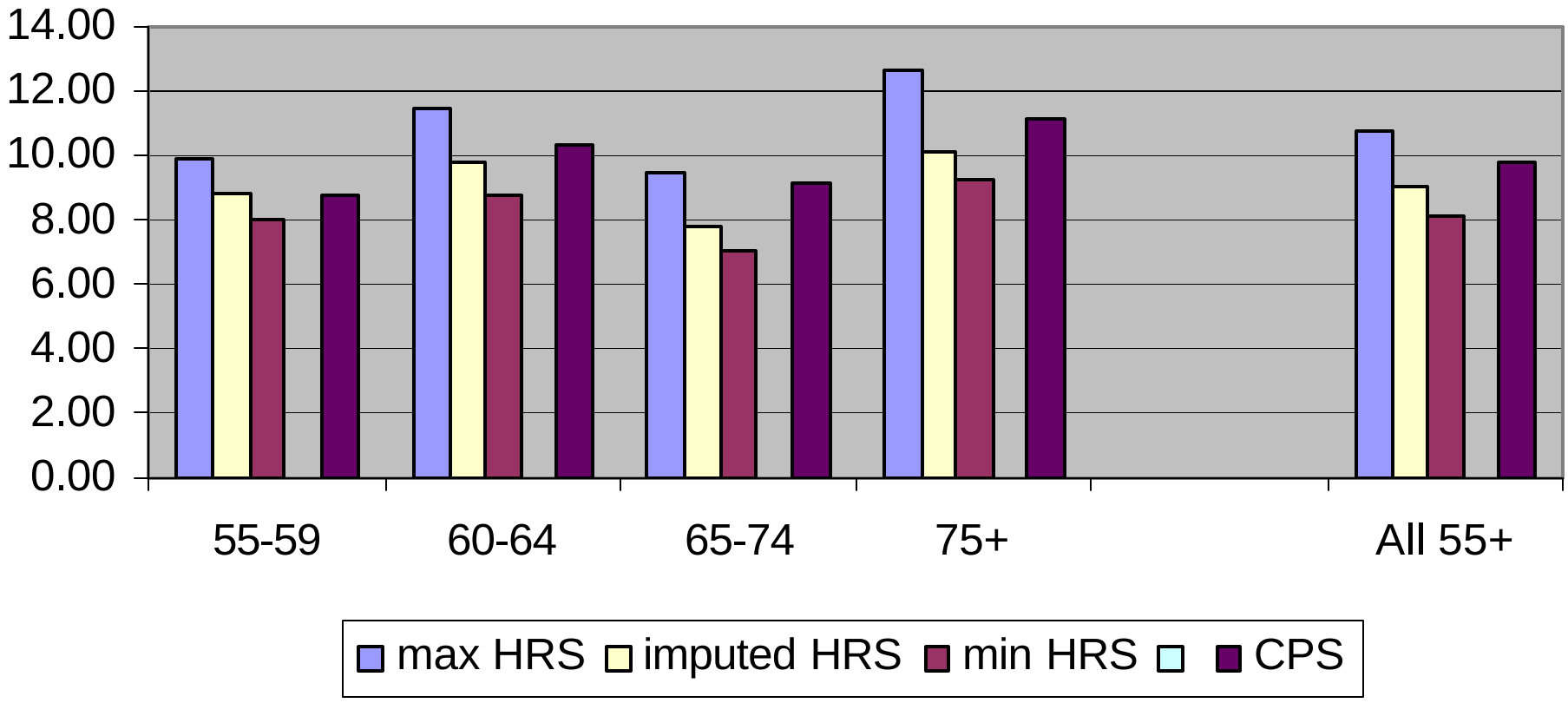
- Imputed HRS lower than CPS: All 9.0% versus 9.8%

Poverty rates (%): CPS and HRS (weighted)



- Considerable uncertainty: e.g. 75+ 9.3% to 12.7%

Poverty rates (%): CPS and HRS (weighted)

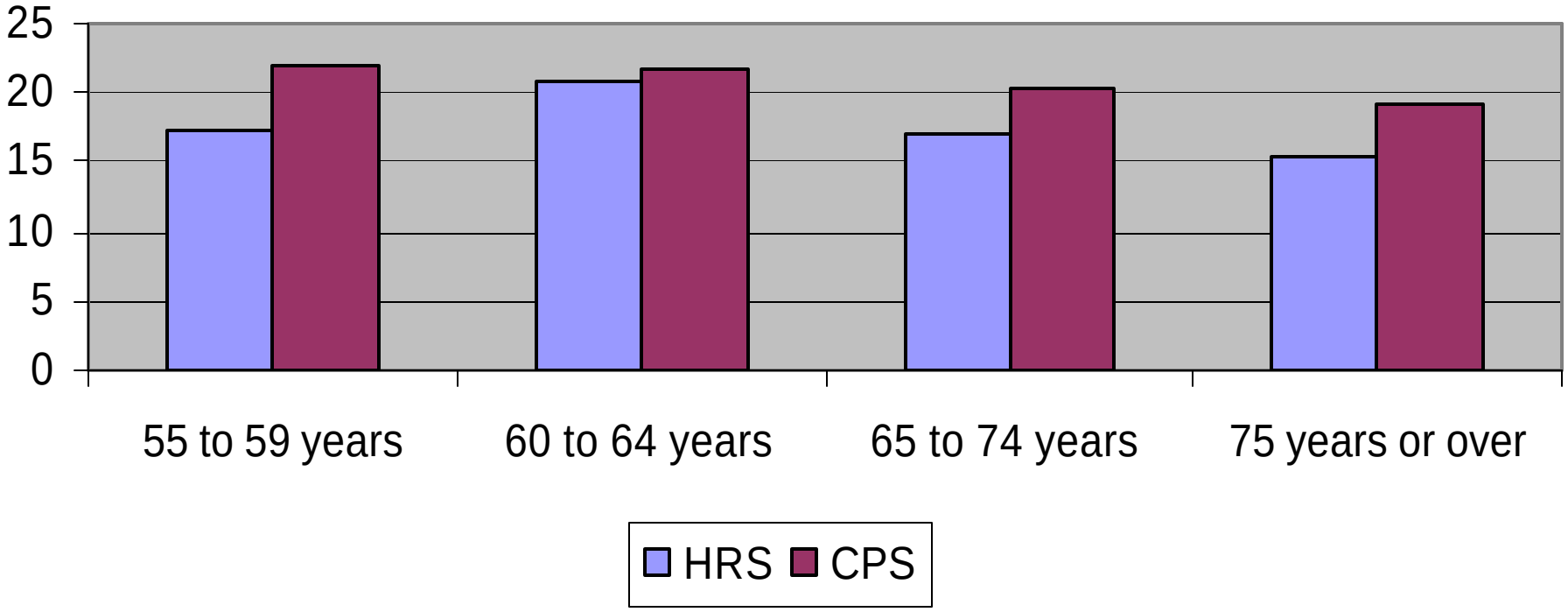


- Age pattern same as CPS

Most direct comparison between HRS and CPS

- Unrelated individuals: Single people living alone.
- Abstract from complexities of
  - household composition and difficulties of reporting income for other household members
- Only need self-reports of income.

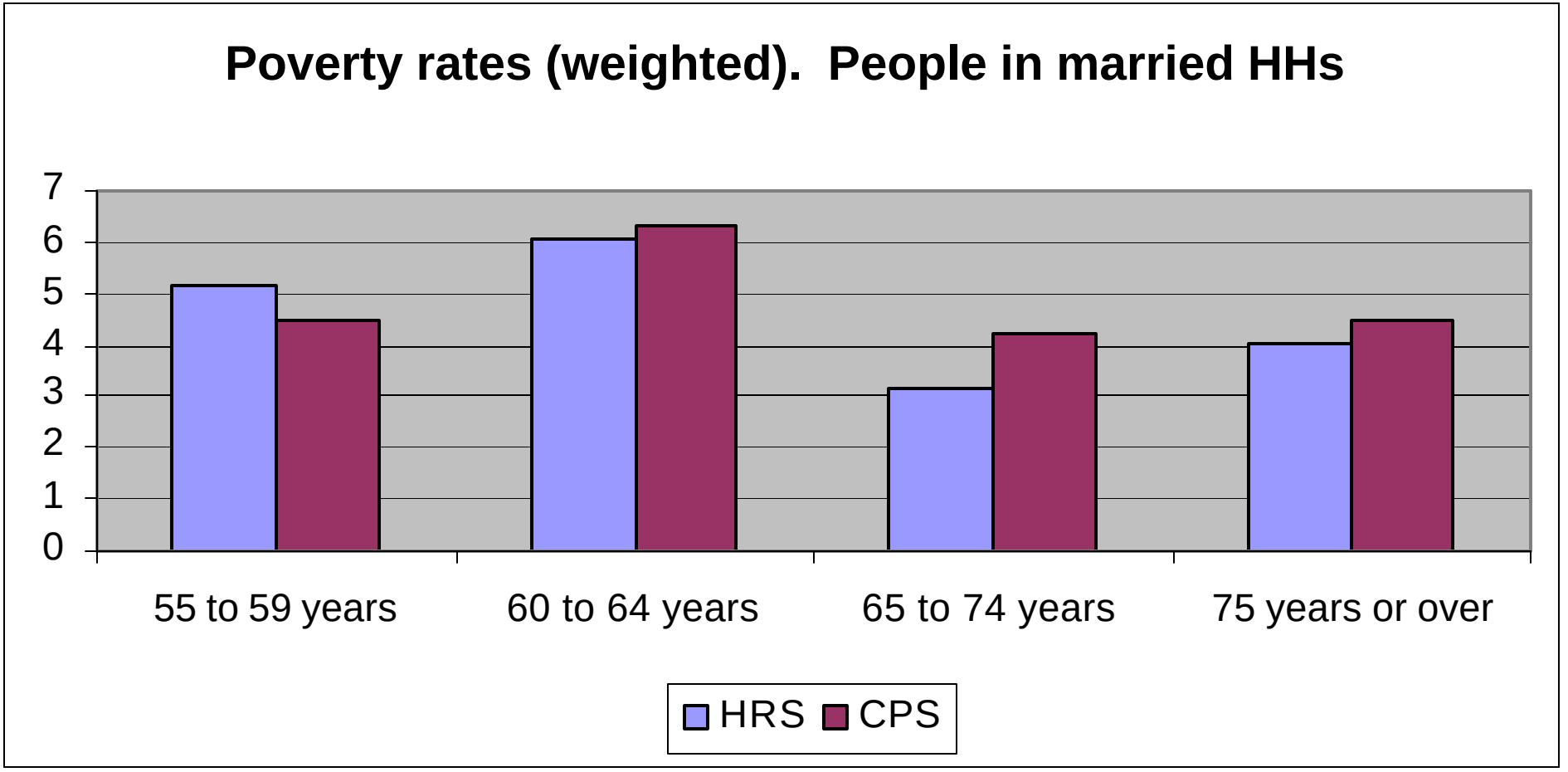
Poverty rates (weighted). Unrelated individuals



HRS rates considerably lower at advanced old age, mostly widows.

For people in married households

Impute income when necessary using brackets



But note: poverty rates very low

Consumption based poverty rates

Differ from income-based

- Taxes
- Saving/dissaving
- Income-in-kind
- Durables
- Housing services

Difference between income and consumption poverty rates

- Likely to vary with age
- Implications for age-related welfare judgments
  - Tax rates decline with age
  - Dissaving at old age
  - Consumption in kind: Medicare
  - Durables: age related depreciation
  - Housing: small age decline

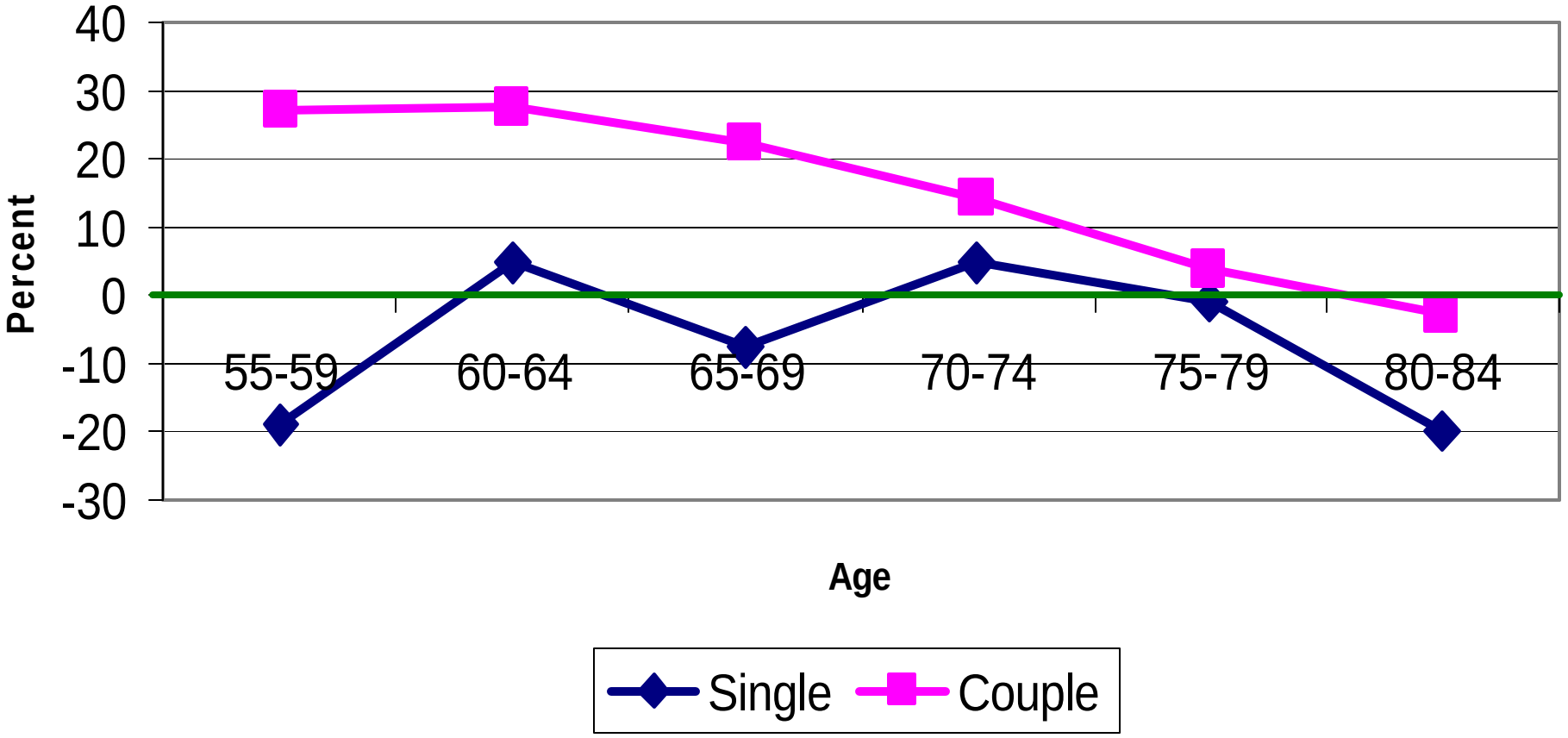
Consumption and Activities Mail Survey (CAMS)

- October, 2001, CAMS wave 1
- 5,000 HRS households (random selection)
- Couples: one of two spouses at random.
- 3,866 returned questionnaires: unit response rate of 77.3 percent.
- Spending measure close to spending in Consumer Expenditure Survey

Taxes

Use NBER TAXSIM

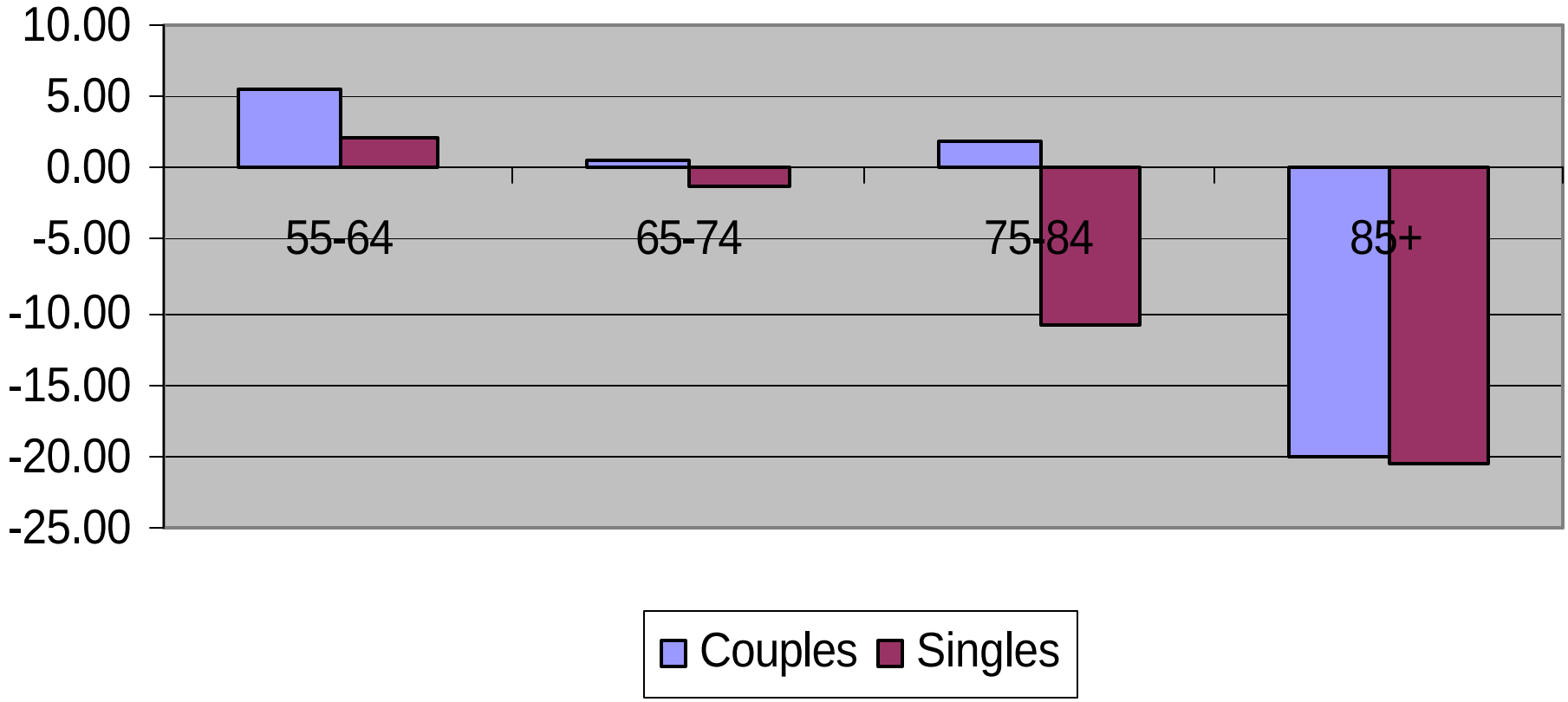
After-tax income saving rates (%)



Couples save until advanced old age. Singles save little or dissave.

- How does this compare with panel wealth change?
- Use panel wealth change
  - 1995-1998
  - 1998-2000
  - 2000-2002
- Average two-year percentage real wealth change.

Two-year change in median real wealth (%): average of 3 panels



Mean wealth has same pattern

From spending to consumption

- Durables, housing and automobiles
  - Estimate service flow
- Income/consumption in kind
  - Medicare is the big one, but won't do anything about it
  - Similarly for health care consumption financed by others (employers)

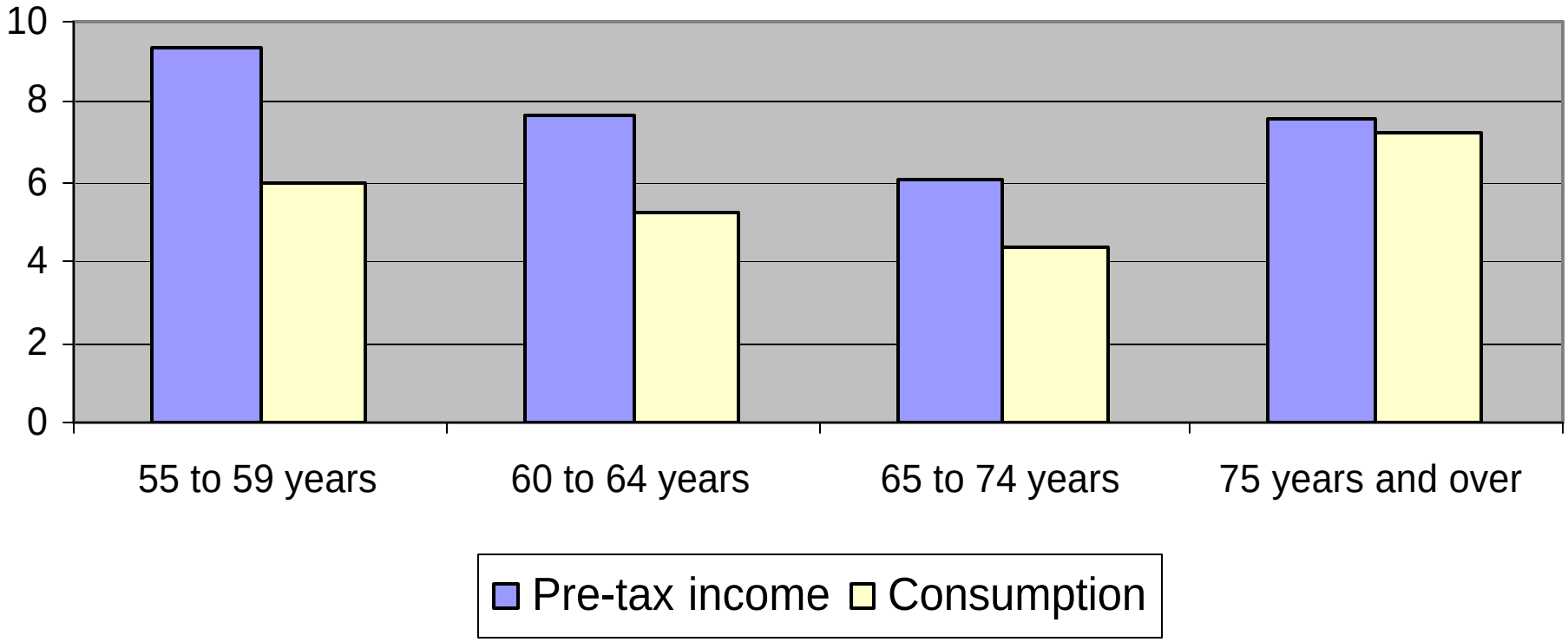
Total Consumption

Sum of

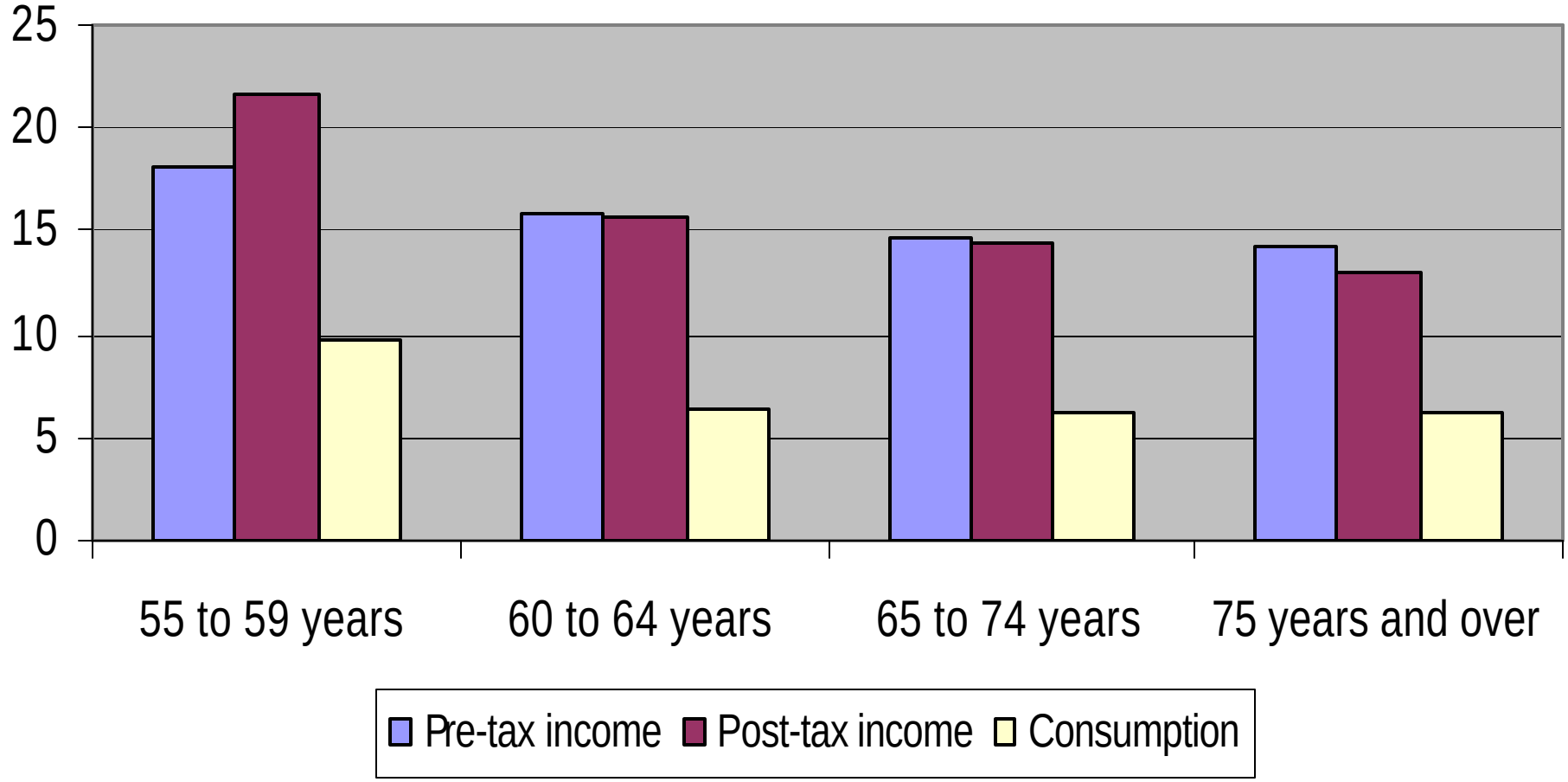
- Nondurables
- Five durables
- Automobiles
- Housing

Compare with official income poverty thresholds.

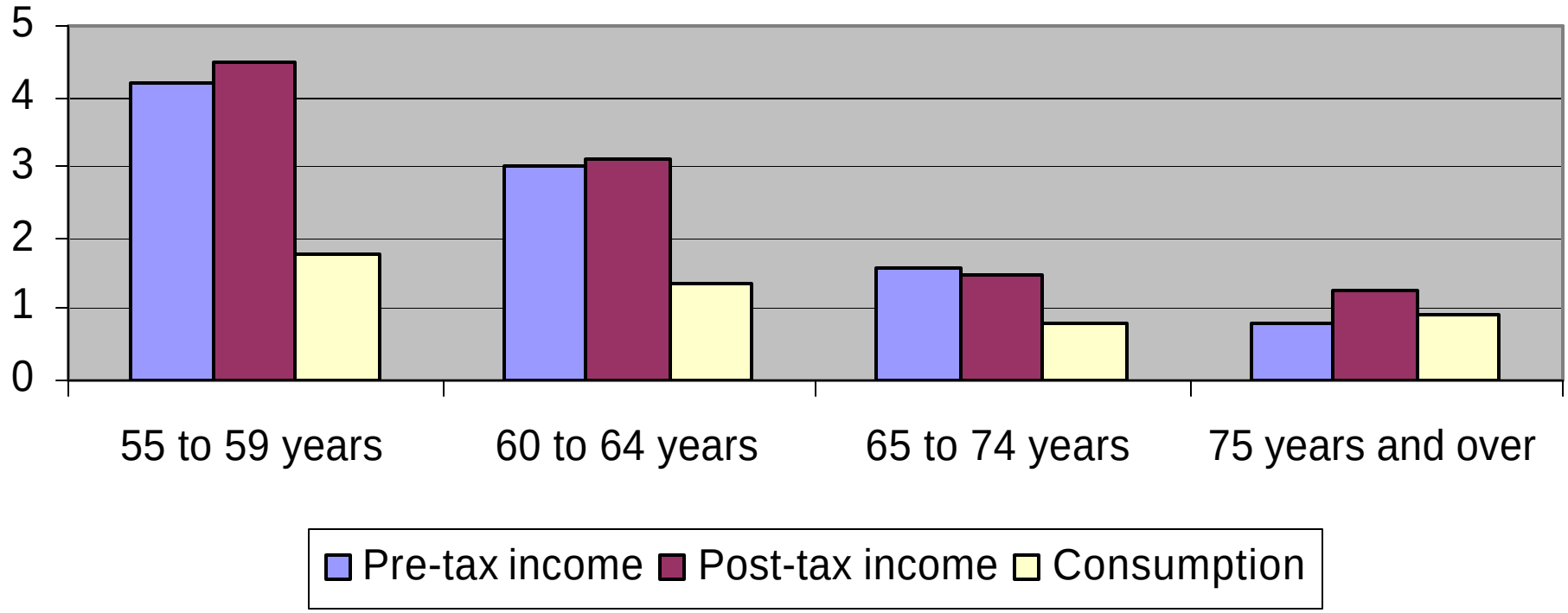
Poverty rates (%). CAMS. All



Poverty rates (%). Unrelated individuals



Poverty rates (%). 2-person married households



Correspondence between two poverty measures

Percent distribution of poverty status (weighted)
One and two-person households
N = 3651

	Consumption-based definition		
Income-based definition	No	Yes	All
No	92.5	1.4	93.8
Yes	4.7	1.5	6.2
All	97.2	2.9	100.0

About 24% of those classified into poverty on an income basis are also classified into poverty on a consumption basis

Relationship between definitions of poverty

- Divide those in poverty based on income into two groups:
  - those also in poverty according to consumption,
  - those not in poverty according to consumption.

- What are the wealth differences between these two groups?

Distribution of non-housing wealth (thousands) among those in poverty according to income. N = 226

		Percentile				
Poverty status (cons. based)	Mean	10	25	50	75	90
Yes	0.2	-1.9	0.0	0.0	1.5	4.0
No	158.2	0.0	0.0	1.6	16.5	105.0

What are characteristics that lift households out of poverty when measured by consumption?

Among households in poverty defined by income

- Estimate probability of not being in poverty when defined by consumption
- Show odds ratio from logistic estimation

Probability of not in poverty according to consumption (N = 239 in poverty according to income)		
	Odds ratio	P-value
Sex = female	2.01	0.11
Single	0.31	0.02
Home ownership	1.83	0.10
Less than high school	0.65	0.28
High school	--	--
some college	3.78	0.11
College	1.14	0.87
Non-housing wealth quartile lowest	--	--
2	0.91	0.83
3	1.59	0.28
4	6.91	0.00

Age not important

Conclusions

HRS suitable for assessing poverty in the elderly population

- Matches up quite closely to CPS
- Possibly more reliable for some types of households (simple HHs)
- Not necessarily inferior for composite households
  - Bracketing
  - Better design of income section

But CPS likely gets better income of household when elderly person lives with children

Conclusions (cont.)

- HRS only data set where income, wealth and consumption are available
- Internally consistent relationships:
  - dissaving in wealth change and
  - dissaving as evidenced by after-tax income minus consumption
- Consumption based poverty rate considerably lower than income based, especially for single people.

Conclusions (cont.)

- Housing plays a role
- But even low income people may have wealth
- Consumption can exceed income

The End