



Methodological Issues in Local Area Application of the American Community Survey

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The Difficulties in Comparing Quality Measures between the Census and the American Community Survey

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PROCEED AT YOUR OWN RISK!



- ↖ Comparing two data sets purported to measure the same concept should be approached with the same care you would use in a mine field
- ↖ No matter what you do someone is bound to say
 - you are comparing apples and oranges
- ↖ And if you are trying to compare data quality someone will say
 - you are not being fair!

Do Your Homework



↩ What you don't know can cost you "big time"!

- Understand the sources of the data
- Identify where similarities exist
- Determine what differences are insurmountable
- Learn the jargon

↩ Some comparisons should never be made!

Stuff Happens



↖ Even when two surveys are designed to measure the same things using the same questions and similar methods, the results are not always comparable

ACS versus Census

more like Granny Smiths and MacIntoshes



- ↖ The questions are the same, but the reference dates are different
- ↖ The mailout phase is similar, but the followup phases are different
- ↖ The criteria used to decide if a sample response is usable are different, but the difference can be measured
- ↖ The content edits are similar, but imputation rates reflect differences in data collection operations and processing

Common Comparison Pitfalls



↖ Search for the true meaning of “Response”

- Mail Response vs Mail Return rates
- Self-response vs Enumerator response rates
- Survey Response vs Interview rates

↖ And its opposite

- Nonresponse vs Noninterview rates
- Non-mail vs Followup rates

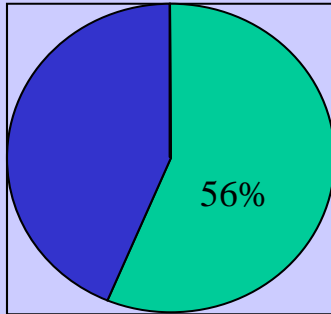
Making “Self-Response” Comparable between the ACS and the Census Long Form



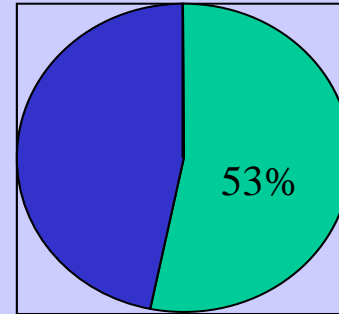
- ↖ Using the proportion of self-response contributing to the final data overcomes operational differences
- ↖ Weighting responses by sampling fraction reciprocals corrects for differences in the sampling rates
 - Areas with larger Census samples may have lower mail return rates due to lower Long Form response
 - ACS has adopted the Census differential sampling, but the impact on mail return rates is not known

Public Cooperation in the Bronx

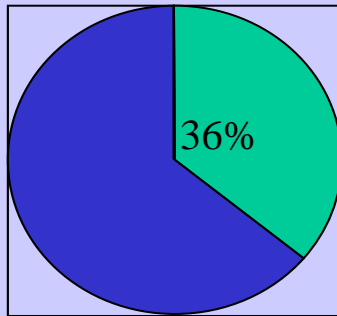
proportion of households interviewed by
self-response collection modes



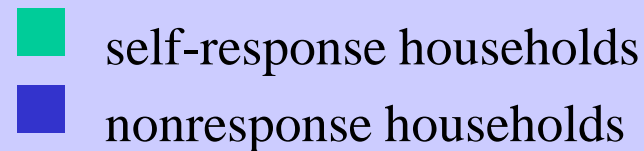
1990 Census Long Forms



2000 Census Long Forms



2000 ACS Test



Self-Response Reality



- ↖ The ACS will never reach the level of self-response accomplished by the Census in most areas
- ↖ In hard-to-enumerate areas like the Bronx, constant emphasis will have to be placed on a quality nonresponse followup

More Common Pitfalls



- ↖ All “Unit Nonresponse” is not the same
- Know your denominators! Are all units interviewed, or only occupied units?
 - Are proxy interviews accepted, or must all interviews be with the sample household?
 - Unit noninterviews occur in all censuses and surveys, even if not officially reported

ACS Unit Nonresponse



↖ What is an ACS Noninterview?

- An “interviewed” household record that has less than the minimum data required to be edited and treated as an interview
- A personal visit case that should have been interviewed but was not (a “Type A” noninterview)
- Both of these are routinely measured

Census Sample Unit Nonresponse



What is a Census Long Form Noninterview?

- A Long Form household record that has less than the minimum data required to be in the Census sample
- A proportion of the Census units in an area for which no data were collected equal to the area's Long Form sampling rate
 - ▮ this component of Long Form noninterviews has not been measured

Minimum **Census** Sample Data Criteria



- ↖ For Census sample data processing, each Long Form household record is checked to see if it has **AT LEAST** one person record with two 100% items **AND** two sample items

- ↖ Long Forms that don't meet this minimum criteria are not “Sample Data-defined” and are not placed in the Census sample

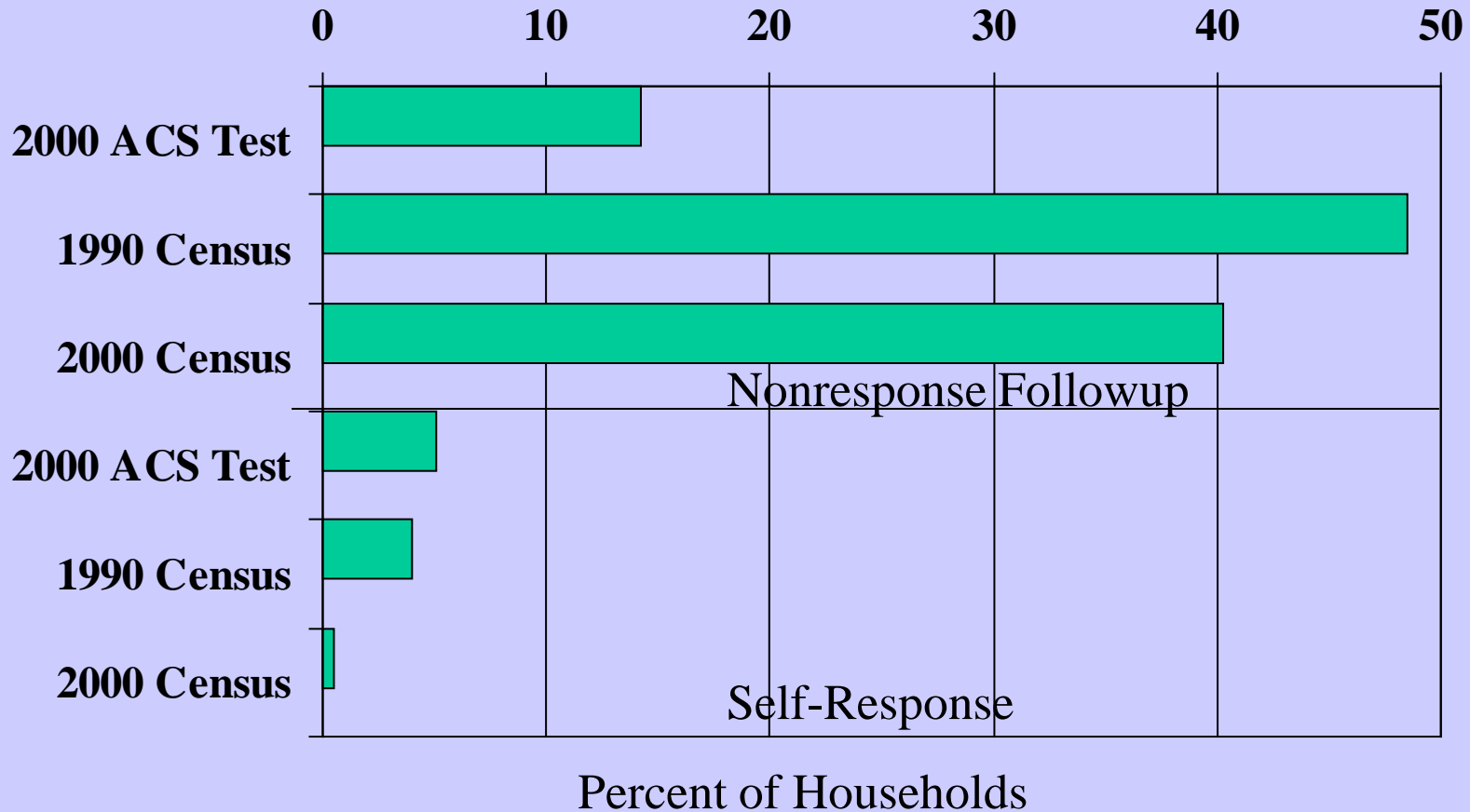
Minimum ACS Data Criterion



- ↖ An Acceptability Index is computed for each “interview” household record
- ↖ This index is the sum of all basic (“100%”) items, with AGE counting as two, divided by the number of people in the household
- ↖ Households with an Acceptability Index of less than 2.5 are considered noninterviews, in addition to the CAPI Type A noninterviews

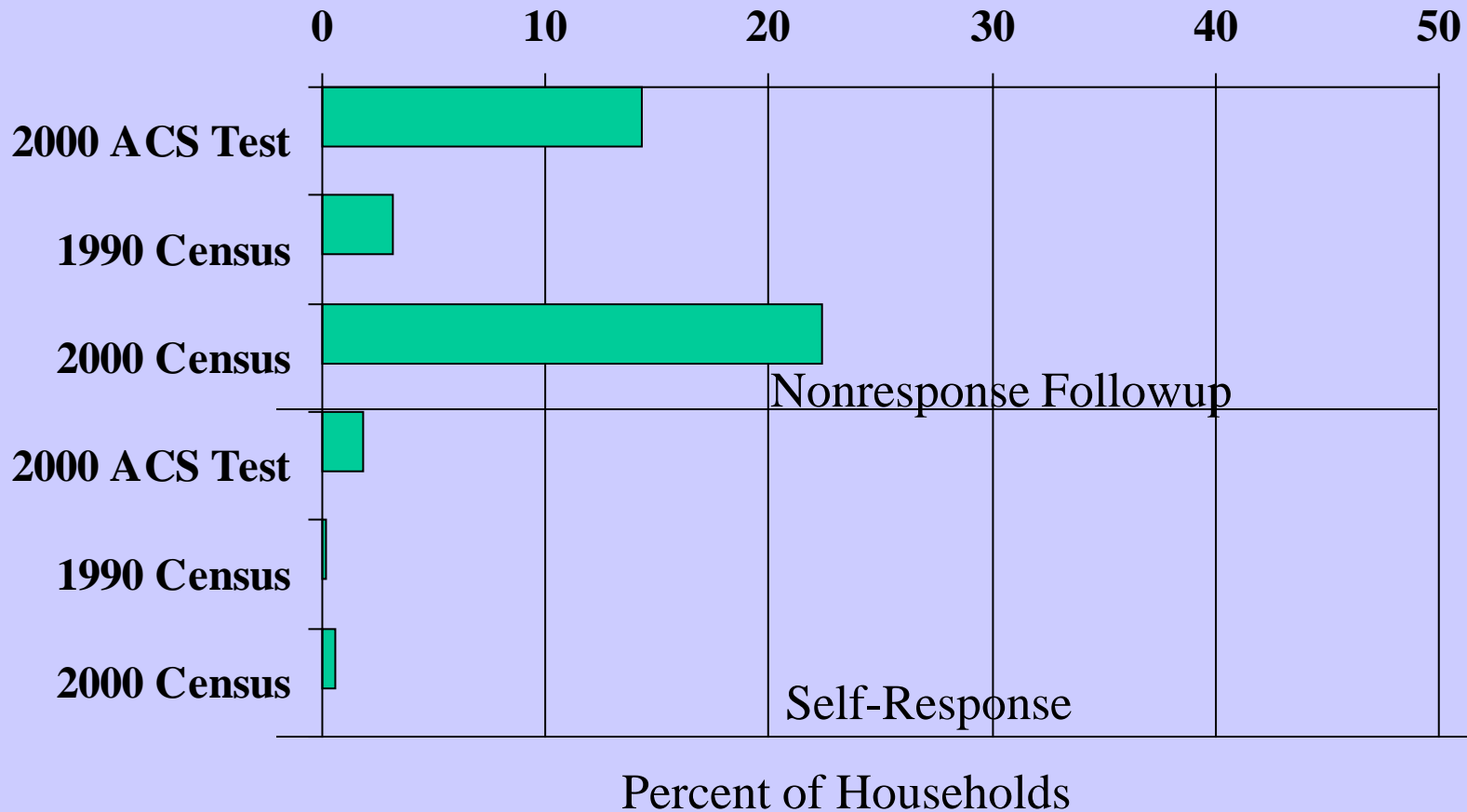
Percent “Not Sample Data Defined” Bronx Records, by Collection Mode

Census minimum data criteria



Percent “Unacceptable” Bronx Records, by Collection Mode

ACS minimum data criterion



Comparing the Bronx Sample Composition



- ↖ Self-response households are over-represented in the Census samples - their Long Form mail returns are nearly always sample data-defined
- ↖ Nonresponse followup households are under-represented in Census samples - their Long Forms are frequently dropped
- ↖ This tendency to over-represent self-response is not as evident in the ACS Test sample

Interesting Observation



- ↖ If the ACS acceptability criterion had been used in the census, many more Long Form nonresponse followup records would have been placed in the Bronx samples of both censuses
- ↖ If the Census sample data-defined criteria had been used in the 2000 ACS Test, slightly more self-response records would have been treated as noninterviews in the Bronx

One Last Pitfall



- ⚡ Beware comparing item nonresponse or imputation rates when
- item universes differ
 - definitions of “missing” answers differ
 - edit imputation methods differ
 - treatments of “unit nonresponse” components differ
 - weighting processes differ

Item Nonresponse



- ↖ The Census and ACS use the same editing methods to impute characteristics when individual items are not answered, but
- the universes of sample records may be different - only “interview” records provide data and are edited
 - Records identified as “noninterviews” are adjusted for by weighting that mirrors the characteristics of the edited interviews.

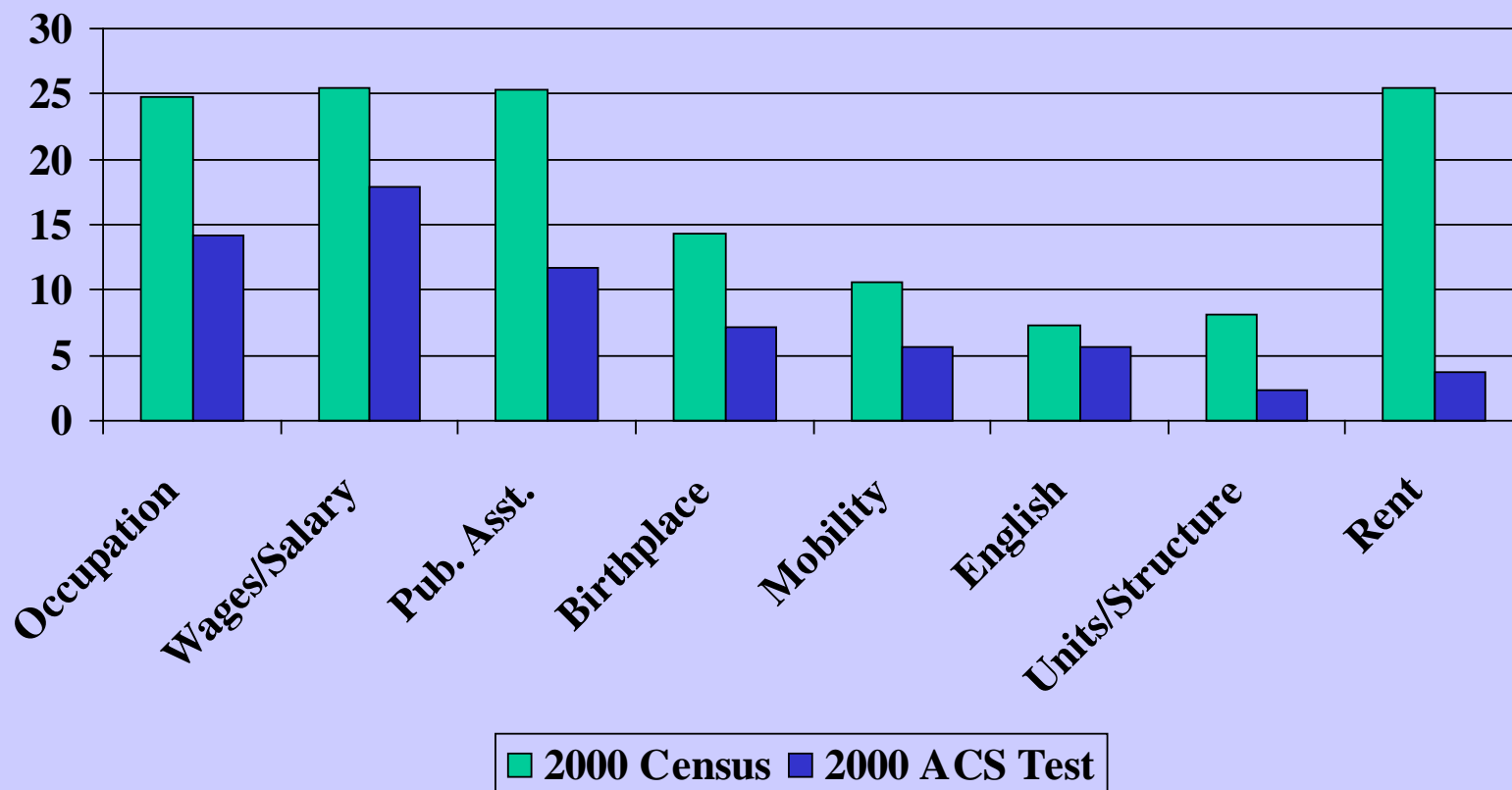
Comparing ACS and Census Item Imputation Rates



- ↖ The sample records are weighted only by the initial weights
- ↖ This minimizes the effect of the differences in the Census and ACS weighting methodology by removing
 - the noninterview and control adjustments on the ACS results, and
 - the adjustments from weighting the Census sample records to the 100% counts on the Census results

Imputation Rates for Selected Items Bronx Total

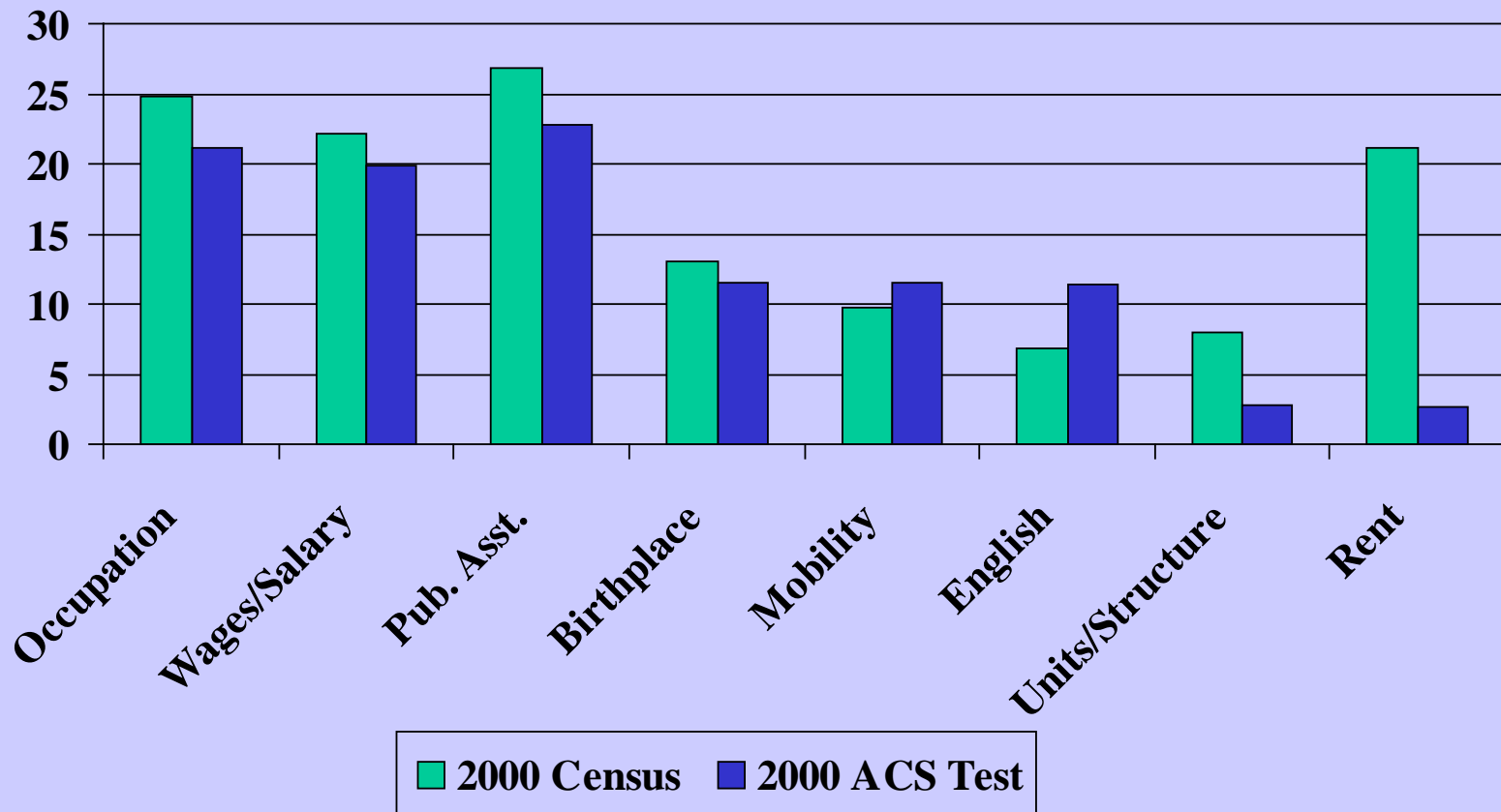
2000 Census and 2000 ACS Test



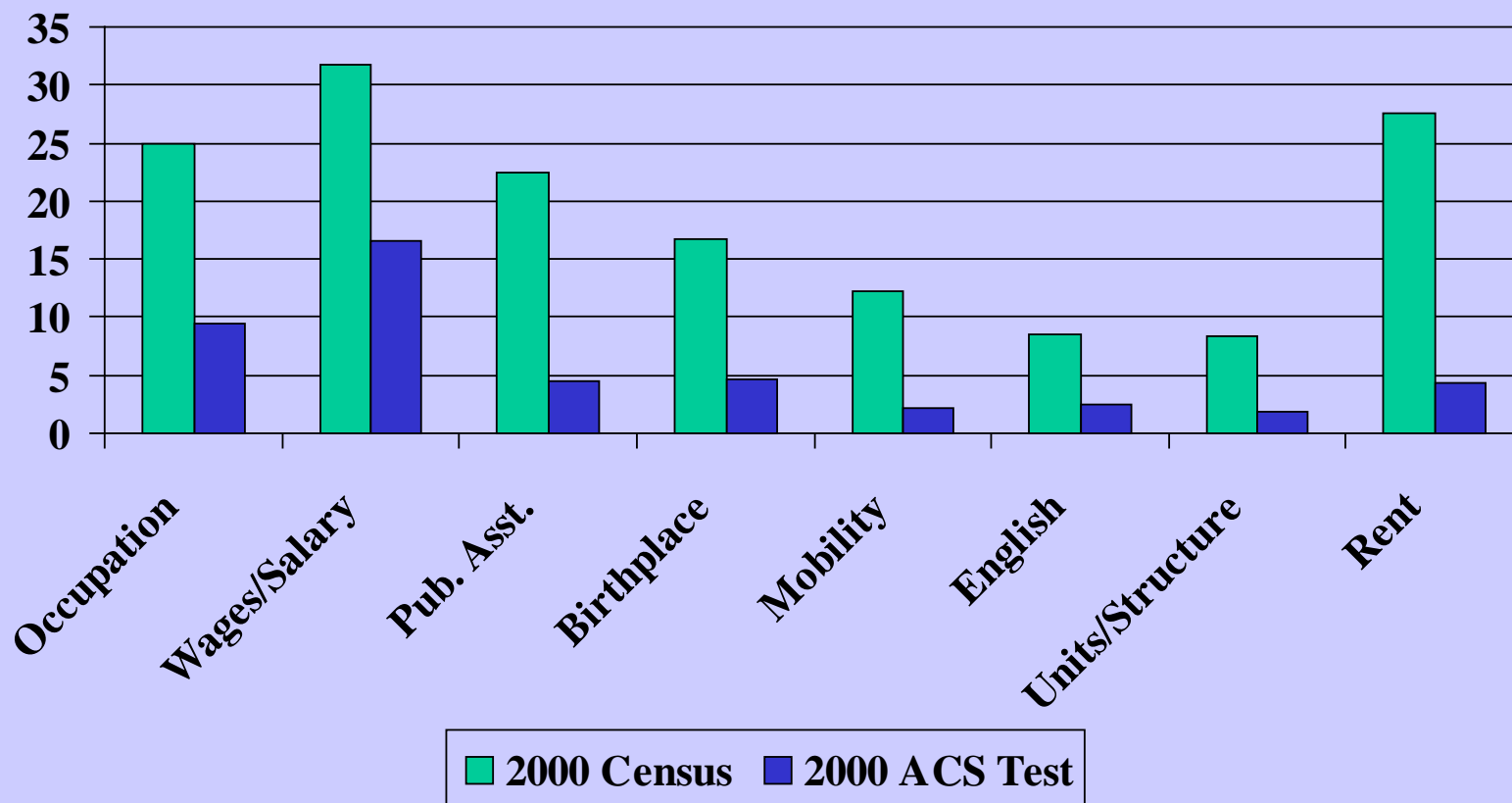
Inputation Rates for Selected Items

Bronx Self-Response

2000 Census and 2000 ACS Test



Imputation Rates for Selected Items Bronx Nonresponse Followup 2000 Census and 2000 ACS Test



Item Imputation by Mode Reflects ACS and Census Operational Differences



- Item imputation in the Bronx has tended to be higher in the Censuses than in the ACS Test
- Emphasis is on data collection in ACS, while it is on the count in the Census
 - ACS nonresponse followup collects more complete information through the use of computerized instruments and permanent staff
 - ACS mail returns undergo telephone followup for missing items, an operation done in the 1990 Census but not in the 2000 Census