Acknowledgements

Many thanks to:

- Ken Hodges, head demographer at Nielsen (Claritas)

Sources of information:

- Nielsen, Inc.
- A Compass for Understanding and Using American Community Survey Data – What the Business Community Needs to Know
  US Census Bureau, October 2008
Why is it important to understand the American Community Survey (ACS)?

Demographic data products provided by private firms “are built largely on a statistical and geographic foundation provided by the census”.

U.S. Census Bureau
How the ACS will be affecting 2010 data products from private vendors

- When and how are private data providers incorporating ACS data?
- What changes to data variables are expected?
Changes to data variables are expected

The demographers at Nielsen (formerly Claritas) warn us to expect “sizable changes” to their 2010 demographic products due to the need to incorporate American Community Survey (ACS) data into their updates.
How are they likely to change?

One third of all standard demographic data variables offered by Nielsen (Claritas) are expected to see some changes because of different ACS variables:

- 15% may no longer be available
- 6% may be new variables
- 13% may see changes to data ranges, such as income band or age range
How will Ribbon Demographics’ HISTA Data be affected?

HISTA (Households by Income, Size, Tenure & Age) is a custom cross tabulation of 2000 Census Long Form Data at a Census Tract Level with updates and projections produced by Nielsen (Claritas).

- No changes anticipated for 2010, although we won’t know for certain until Nielsen standard products are finalized.
- New custom cross tabulation will be needed when small area data released – may wait until 2006-2010 to incorporate 2010 decennial data.
- Expect new cross tabs every 5 years thereafter.
What to ask your data provider

- Are they incorporating ACS data into their demographic updates?
- When did they start doing so?
- Which elements have they incorporated to date?
- What specific challenges or issues have they faced?
What Nielsen (Claritas) is doing

- Transitioning from “smoothed” data based on census ratios to “estimates” based on ACS data in 2010 (except for census tracts and block groups.)
- Have been using median incomes and home values for some years.
- Investigating feasibility of using full income breaks, which may be more appropriate when ACS data for census tracts and block groups becomes available.
- Full transition will not be until after 5-year estimates for small areas are available.
“Heads up” from Ken Hodges

“The first set of 5-year ACS estimates (including small areas) is due out in late 2010. These ACS estimates will be weighted or controlled to data from the 2000 census (or estimates based on 2000 census). Therefore, they will show inconsistencies with the first 2010 census numbers that will be released just a few months later.
“Heads up” from Ken Hodges

Then in late 2011, we will get the second set of ACS 5-year estimates. These will be the first ACS estimates weighted or controlled to the new 2010 census numbers, and presented in the new 2010 census geography. So there will be some significant discontinuities between the first set of 5-year ACS estimates and the second set.”

Do not become unnecessarily disillusioned with ACS Data because of this!
What the affordable housing industry needs to know about using ACS data

- ACS used to determine AMIs.
- Private vendors may be implementing the ACS differently in their estimate methodologies – or not all.
- It is now more important than ever to recognize that estimates by private vendors may diverge.
What analysts need to know about using ACS data

ACS data are different enough from the Census Long Form data that “users should not simply plug them into existing applications without a basic understanding of this new data source.”

U.S. Census Bureau – What the Business Community Needs to Know
ACS Advantages

More up-to-date data
- New data every year
- ACS never 10 years out of date

Improved data collection
- Experienced census field staff
- More accurate responses
ACS Limitations

**Higher sampling error**
- Smaller sample than long form
- Even combined over 5 years

**Controlled to population estimates**
- Rather than census counts
- Introduces additional error
Reference Period

- Data from the decennial census tend to describe the characteristics of the population and housing in the March through June time period (especially March/April)
- The ACS data describe the characteristics nearly every day over the full calendar year.
Two Month Residence Rule

- The census counts people according to their “usual residence,” or where they live most of the year.

- The ACS includes people according to a “2-month rule” of “current residence.”
ACS Margins of Error

Long Form Data
Errors “were less apparent, as margins of error were not reported with the published estimates.”
“The once-per-decade schedule masked the fluctuations that would have been observed if long-form data had been provided annually.”

ACS Data
“Margins of error are published and reflect a 90% confidence”

U.S. Census Bureau – What the Business Community Needs to Know
## ACS Margins of Error

### ACS HH Income Table

<table>
<thead>
<tr>
<th>Income Range</th>
<th>Estimate</th>
<th>Margin of Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total:</td>
<td>1,039,619</td>
<td>+/-6,525</td>
</tr>
<tr>
<td>Less than $10,000</td>
<td>54,510</td>
<td>+/-4,272</td>
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<tr>
<td>$10,000 to $14,999</td>
<td>48,476</td>
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<tr>
<td>$60,000 to $74,999</td>
<td>113,660</td>
<td>+/-5,287</td>
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### Example:

- **Median income $48,000 (+/- $1,000)**
  - 90 pct likelihood actual is between $47,000 and $49,000

*Nielsen, Inc.*
## ACS Margins of Error

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*Nielsen, Inc.*

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ACS Margins of Error

Less than $10,000  54,510  ±4,272

± Eight percent

90% confidence actual number lies between 50,238 and 58,782
ACS Margins of Error

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Nielsen, Inc.
ACS Margins of Error

$75,000-$99,999  137,852  ±5,579

± Four percent

90% confidence actual number lies between 132,273 and 143,431
Collapsed Tables

- ACS limits the release of some data on the basis of expected sampling error.
- 2 versions of many of the detailed tables are produced: one with full details and one with fewer categories - a collapsed version.
- In the 1- and 3-year tables, if a table does not pass a reliability test, a collapsed version is provided. If the collapsed table fails to pass the test, the data are not reported for that area.
Year to-year disruptions can be expected, as an area might pass the reliability test in some years but not others.

The 5-year data are not subject to reliability tests or to collapsing or suppression because the 5-year data are regarded as the primary ACS products for long-form replacement.
Period Estimates

- **1-Year estimates**
  - 1 year of data collection
  - Areas of 65,000+ population

- **3-Year estimates**
  - 3 years of data collection
  - Areas of 20,000+ population
  - 2006-2008 data available 2009

- **5-Year estimates**
  - 5 years of data collection
  - Data down to block group
  - 2005-2009 data . . . due 2010
Period Estimates

- The ACS provides one number for each multiyear estimate, but this one number does not reflect one point in time.
- One cannot generically describe 3- or 5-year estimates as reflecting the middle year of data collection and in fact should **never** be used to describe a particular year - **only a period of time**.
- Be careful using 1-year estimates when seasonal fluctuations are an issue.
1-, 3- or 5-Year Data?

- By 2010 there will be 3 sets of data for large areas (65,000+ population).
- Users must decide which is the most appropriate for their application and consider the tradeoff between currency and reliability.
- Users should only compare 1-year estimates with 1-year estimates, 3-year with 3-year, and so on.
Tracking Changes

- Tracking change with ACS data requires care. Users need to study margins of error when tracking changes in 1-year estimates to distinguish actual change from sampling variability.

- Multiyear estimates have an inherent smoothing and will tend to mask rapidly developing changes.
Tracking Changes

- Change is best-measured using estimates reflecting **non-overlapping** time periods.
- For example, 5-year estimates for 2005 - 2009 are best compared with 5-year estimates for 2010 – 2014.
Income reported by Census 2000 reflected income received during 1999.

The ACS asks respondents to report income received during the previous 12 months. (Is this more difficult for respondents to answer accurately?)

With data collected throughout the year, the incomes reported reflect a range of 12 different 12-month income reference periods.
Income

- Dollar amounts in ACS income data are inflation adjusted to reflect changes in the national consumer price index (CPI) - with results expressed in dollar values of the most current data collection year.

- In combining multiple ACS samples to create 3-year and 5-year estimates, the earlier year ACS incomes are further inflation adjusted to the most recent ACS year of the multiyear period.
ZIP Codes

- The Census Bureau plans to release ACS data for ZIP Code Tabulation Areas (ZCTAs).

- ZCTA definitions will not be updated every year, so we will need to pay close attention to the “vintage” of the ZCTA definitions in ACS products - they may differ from ZIP Codes as defined by the U.S. Postal Service or by private data suppliers.
Bottom Line

- Understand that there are significant differences between 2000 Long Form and ACS data from the Census.
- Analyze how these differences might affect the particular issue you are studying.
Examine all ACS period estimates for larger areas.

If all point to the same conclusion, confidence in the related business decision is increased.

If the estimates suggest different conclusions, this may signal the need for caution and further investigation.
Bottom Line

- Be sure to compare “apples to apples”.
- Remember the numbers do not reflect a single point in time.
- Ask how the differences are affecting the data you obtain from private sources.
- **Whatever the data source, it must be used in conjunction with primary research.**
Contact

For a PDF copy of these slides, contact Julia LaVigne at:

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970-366-4256

Link to ACS handbook: