



# Assessing Household Wellbeing: *Comparing Consumption- and Income-based Measures for Farm and All U.S. Households using USDA ARMS and BLS CE Surveys*

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# Road map

- Project experience using CE data
  - Research context and questions
  - Findings, products to date
  - Future plans
- Challenges and recommendations
  - Project dimension context: time, geography and demography
  - Challenges in using CE data
  - Desireable sample and data features

## Research context

- ERS indicators and research program on farm household well-being
  - Major data resource: Agricultural Resource Management Survey
  - Historical focus: income, wealth indicators
- Recent projects have expanded focus, to include consumption and health.

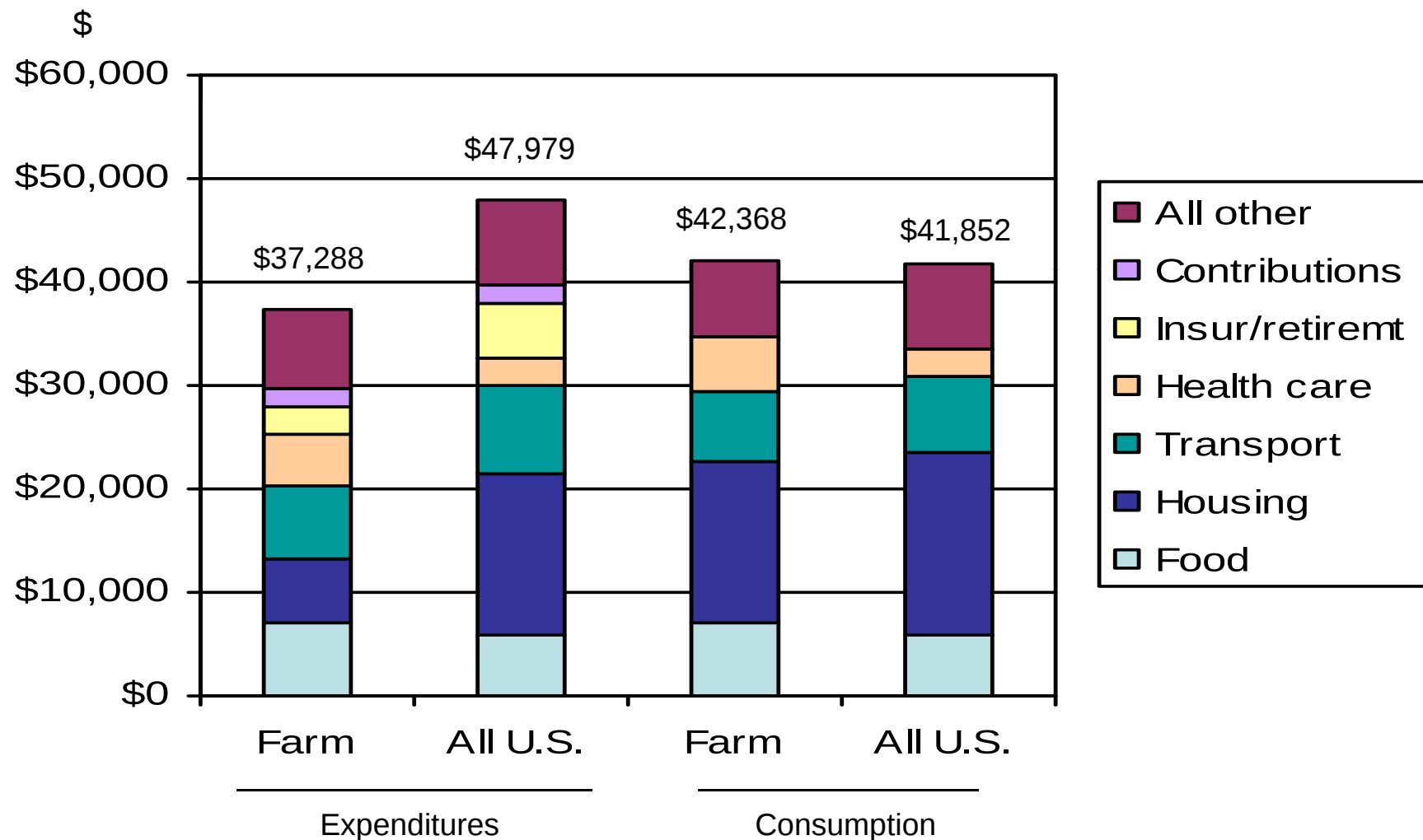
# Issue: Measuring relative well-being of farm and all U.S. households

- *Question:* Does relative well-being differ using consumption and income measures?
  - *Money income:* measure of resources
    - Most commonly used in developed countries
  - *Consumption:* measure of standard of living
    - Due to income smoothing to maintain standard of living over time, provides a better indicator of lifetime standard of living
- *Hypothesis:* they do differ, because past research indicates divergence greatest where:
  - Substantial share of resources is from other than money income, and/or
  - Income is highly variable

# Findings

- Use of consumption measure, rather than expenditure proxy, makes a difference for farm hh: housing measures differ substantially.
- Income and consumption well-being measures tell different stories about relative well-being of farm and all U.S. households:
  - Comparing univariate distributions for two populations:
    - Income: farm households are better off (except at first decile) based on income, though income is more variable
    - Consumption: farm household well-being looks comparable
  - Comparing bivariate distributions for individual hh:
    - Income, a measure of household resources, is a less effective proxy for standard of living for individual farm households,
      - Particularly those that rely more heavily on farm income

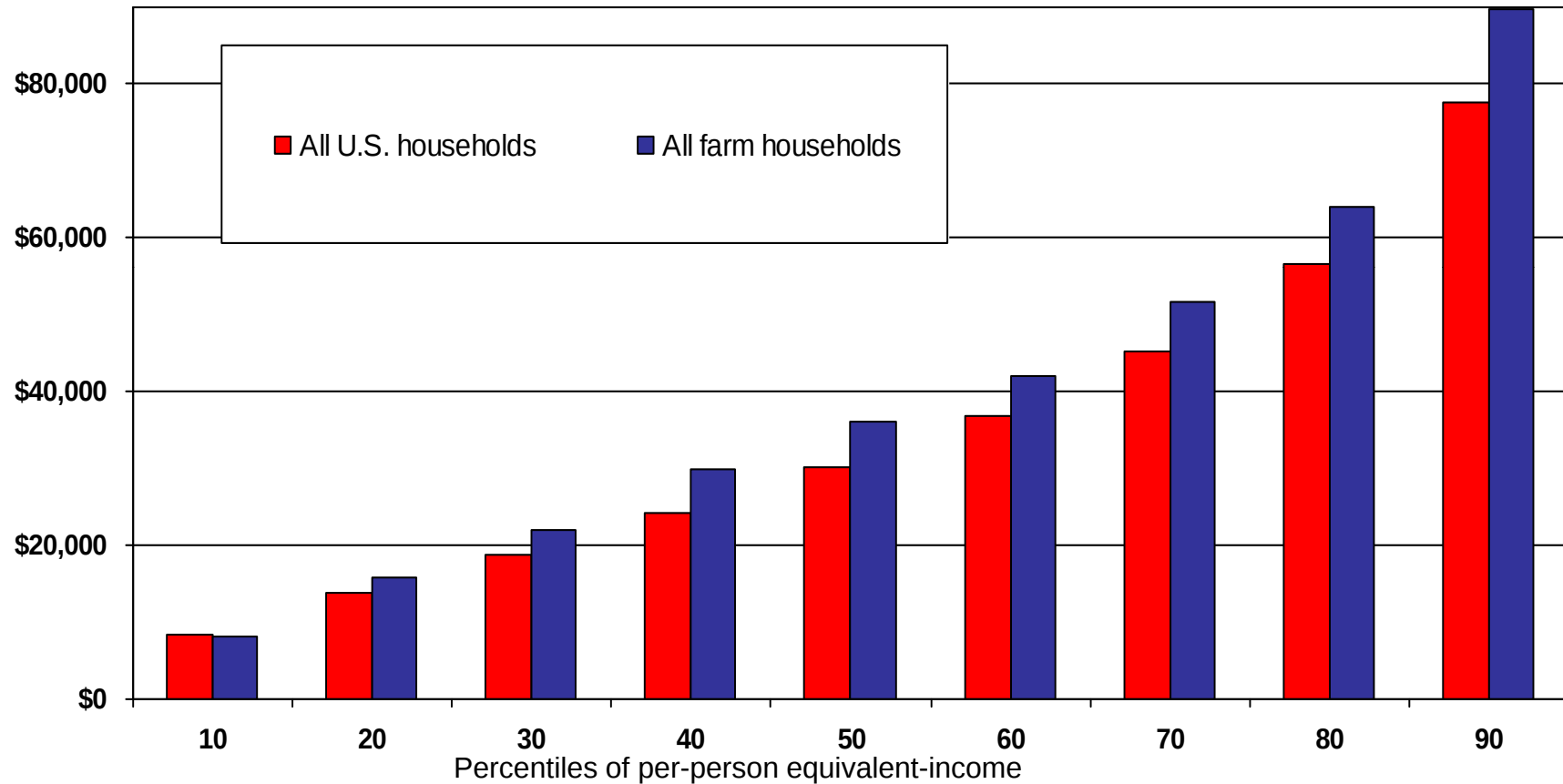
**Average consumption levels, unlike average expenditures, were comparable among farm and all U.S. households in 2006**



Source: USDA, Economic Research Service using Agricultural Resource Management Survey 2006, and Bureau of Labor Statistics' Consumer Expenditure Survey, 2006.

## In 2006, household incomes were higher for farm households relative to all U.S. households, at all deciles except the first

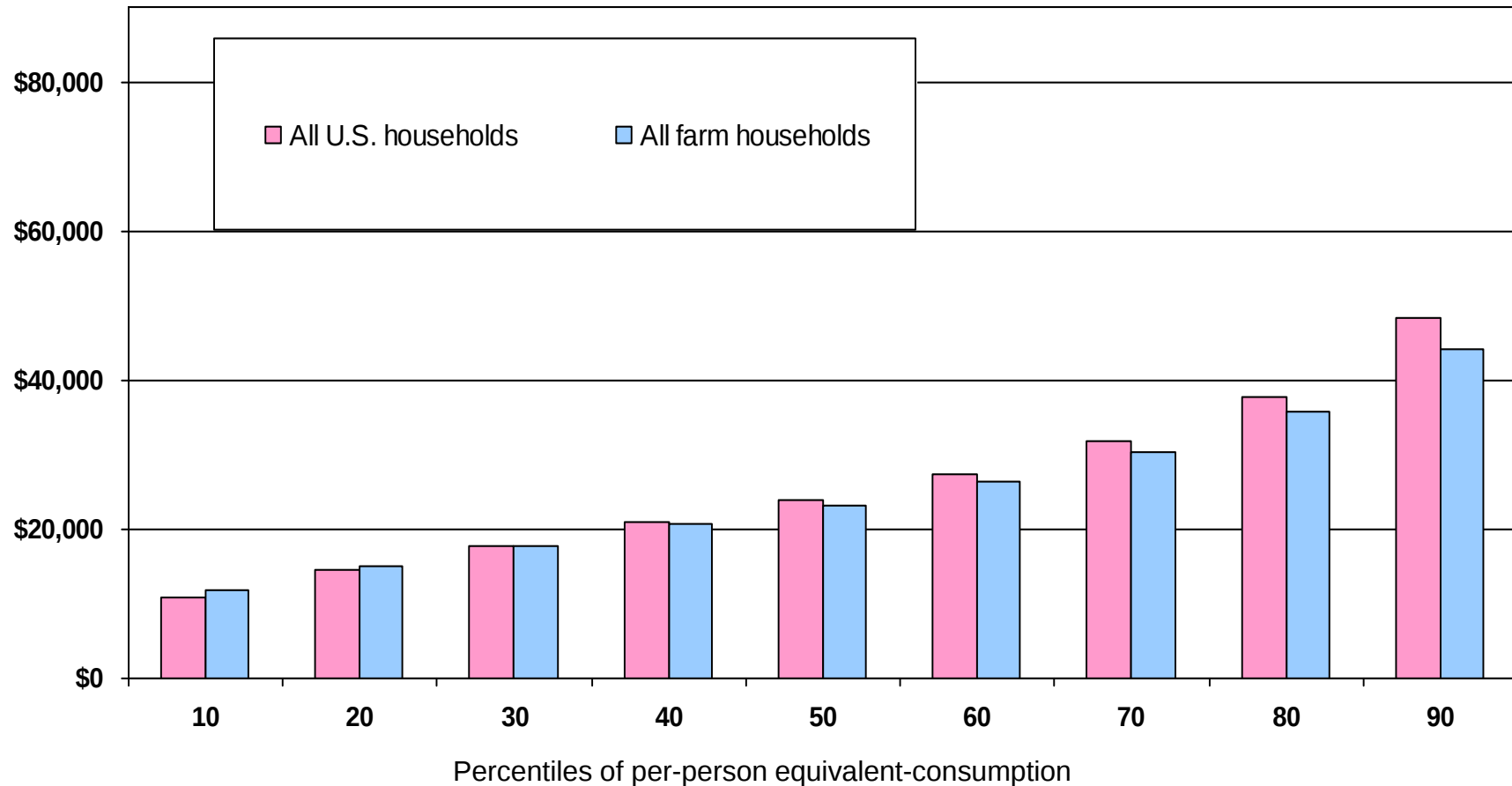
Per-person equivalent-income



Source: USDA, Economic Research Service and National Agricultural Statistics Service's Agricultural Resource Management Survey, 2006 and Bureau of Labor Statistics' Consumer Expenditure Survey, 2006.

# In 2006, consumption levels were comparable for farm and all U.S. households

Per-person equivalent-consumption



Source: USDA, Economic Research Service and National Agricultural Statistics Service's Agricultural Resource Management Survey, 2006 and Bureau of Labor Statistics' Consumer Expenditure Survey, 2006.

# ***Two-way distributions of household well-being: Income is a less effective proxy for consumption for farm households, 2006***

**Farm operator households**

| Y-eq           | Consumption - eq |    |    |    |     |
|----------------|------------------|----|----|----|-----|
| Quin-<br>tiles | 20               | 40 | 60 | 80 | 100 |
| 20             | 38               | 23 | 12 | 14 | 13  |
| 40             | 28               | 22 | 27 | 13 | 10  |
| 60             | 18               | 26 | 22 | 23 | 10  |
| 80             | 7                | 17 | 25 | 23 | 28  |
| 100            | 8                | 11 | 15 | 27 | 38  |

**All U.S. households**

| Y-eq           | Consumption - eq |    |    |    |     |
|----------------|------------------|----|----|----|-----|
| Quin-<br>tiles | 20               | 40 | 60 | 80 | 100 |
| 20             | 57               | 21 | 10 | 6  | 5   |
| 40             | 27               | 31 | 22 | 12 | 7   |
| 60             | 12               | 28 | 29 | 20 | 12  |
| 80             | 3                | 16 | 27 | 33 | 21  |
| 100            | 1                | 4  | 12 | 29 | 55  |

Note: Values in the cells are row percents, and sum to 100% across the row.

Source: USDA, Economic Research Service and National Agricultural Statistics Service's Agricultural Resource Management Survey, 2006 and Bureau of Labor Statistics' Consumer Expenditure Survey, 2006.

## Outputs to date

- Presentations: *Agricultural and Applied Economics Association* 2009 annual meeting
- Publications:
  - Jones, Carol Adaire, Daniel Milkove, and Laura Paszkiewicz, *Measuring Farm Household Wellbeing: Comparing Consumption and Income Measures. ERR-91*, U.S. Dept. of Agri., Econ. Res. Serv., 2010.  
<http://www.ers.usda.gov/Publications/ERR91/>
  - Data Feature: “Measures of Farm Household Well-Being Tell Different Stories”, *Amber Waves*, 3/2010.  
(ERS’ magazine for non-specialist readers.)  
<http://www.ers.usda.gov/AmberWaves/March10/DataFeature/>

## Future goals

- Report consumption measure estimates for subsequent years – comparing farm to all U.S. households
  - International interest in developing statistical standards for farm hh consumption reporting
- Conduct further statistical analysis
- Incorporate TAXSIM to calculate disposable income

# International interest in farm household consumption measure

- Wye City Group On Statistics on Rural Development and Agriculture Household Income
  - Under aegis of U.N. Statistics Division, a group of international experts, mainly from national statistical agencies, focused on improving and expediting international standards development for statistical methodologies. [<http://unstats.un.org/unsd/methods/citygroup/index.htm>]
- The Global Strategy to Improve Agricultural and Rural Statistics, developed under the auspices of the U.N. Statistical Commission.
  - <http://wiki.asfoc.ibge.gov.br/Default.aspx?AspxAutoDetectCookieSupport=1>

# Experience with CE data

- CE Interview Survey micro data files
- Geography/demography dimensions:
  - Reported results in the national level,
  - *plus* created a farm household sub-sample to compare against ARMS farm households (though CE sample diverged from ARMS sample on key characteristics).
- Time period: CY 2006

# Challenges in using CE data - 1

- ***Sample attrition and weighting:*** Weights are provided on a quarterly basis.
  - Given sample attrition, the weights do not generate a nationally representative sample for CUs with complete panel data (across all quarterly interviews).

## Challenges in using CE data - 2

- ***Calculation of standard errors:*** For analysis pooling all available quarterly observations, standard errors of annual expenditure estimates are calculated treating all observations as independent.

## Desireable data features

- Enable calculations of annual (12-month) consumption expenditures for each CU
- Provide current value of each vehicle (as Q1 interview, as for housing)
- Report disposable income components, for example, calculated using TAXSIM
- Provide expenditures, incomes, assets and liabilities for the same time period