

# Setting and Updating Modern Poverty Thresholds

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Annual Meeting of the Allied Social  
Science Associations (ASSA), Atlanta, GA  
January 3, 2010



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# Introduction

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- Determining whether someone is poor is conceptually simple
  - Poor are those individuals whose economic resources are insufficient to meet a socially determined level of need
- Determining the level of need is complicated, choices
  - What needs
  - Whose needs
  - How to set
  - How to update
- Each choice involves subjective judgment
  - True of resources but less so
    - Once decisions for threshold are made
    - Measure of resources that is consistent conceptually follows

# National Academy of Sciences Recommendations

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- 2.1-2.4 A poverty threshold with which to initiate a new series of official U.S. poverty statistics should be derived from Consumer Expenditure Survey [CE] data for a reference family of four persons (two adults and two children)
  - Basic bundle – food, clothing, shelter, utilities (FCSU)
  - Percentage of median expenditures
  - Multiplier for other needs
  - Updating to reflect real growth in consumption
- 3.1 Adjustments

*The NAS recommended a Procedure.*

# Concepts Used to Define Thresholds

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- Spending
  - How much does one need to spend to meet basic needs?  
  
*But ...* for some needs, such as housing, spending does not equal consumption (e.g., subsidized, own)
- Consumption
  - How much does it costs, or what is the consumption value, to meet basic needs?

# Caution....

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- For a more complete consumption based threshold, would also need data on ...
  - School breakfast, school lunch, WIC
  - Energy assistance
  - Clothing assistance
  - Goods and services received as gifts (“net” value of gifts)
- **And** some comparable values would be added to resources for consistency

# Thresholds Defined in Terms of...

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- Spending
  - All spending (Official poverty threshold)
  - FCSU without principal payments (CE-defined)
  - FCSU with principal payments (OOP)
- Spending and Consumption
  - Expenditures with adjusted for select consumption (e.g., rental equivalence for owner-occupants, market value of subsidized and rent-control housing)

# Research on Shelter in Thresholds

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- CE-Defined and “rent” of owner-occupied housing
  - Johnson, Shipp, and Garner (1997)
  - Short, Garner, Johnson, and Doyle (1999 Census report)
  - Garner and Short (2001)
- OOP
  - Garner(2005) and Short (2005)
  - Garner and Short (forthcoming *Review of Income and Wealth*)
- All of the above
  - Garner (2009 - ASA, Brookings)
- Plus renter subsidies in thresholds
  - Garner and Rozaklis (1999, 2001)
  - Betson (2009 - Brookings)

# Previous Threshold Specifications

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$$(NAS) \text{ BLS Threshold} = \frac{(1.15 * 0.78 * \text{Median}) + (1.25 * 0.83 * \text{Median})}{2} \quad (1)$$

- Update by changes in median FCSU each year
- Assumption: percentages of the median are held constant at the values that were used by the Panel for the 1992 thresholds

$$MAP \text{ Threshold} = 1.20 * 33^{\text{rd}} \text{ percentile} \quad (2)$$

- Update by changes in 33<sup>rd</sup> percentile of FCSU expenditures each year
- Assumption: 33<sup>rd</sup> percentile changes each year



# NAS and MAP Thresholds

2007	Official	NAS (BLS-Census)		MAP* (Garner 2009b)
		CE-Defined	OOP	OOP
Reference Unit	Census Family <i>(Husband and Wife with Own Children)</i>			Consumer Unit <i>(Two Adults with Two Children)</i>
All reference families	\$23,244	\$23,465	\$25,680	\$25,179
Owners with mortgages and renters-market rent				\$26,723
Owners without mortgages (and renters no rent paid)				\$14,833

\*purchase similar quality shelter

# Purposes of This Study

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- Continue and extend our examination of the sensitivity of poverty thresholds to the definition of shelter
- Examine the impact of different updating mechanisms
- Study the change in the real value of the thresholds overtime
- Examine the impact of basing the thresholds on the behavior of reference families only or on all consumer units

# Motivation

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- Shelter accounts for the largest single share of the threshold; share increasing
  - 31.3 % in 1996
  - 35.6 % in 2005 (shelter + utilities ~ 50%)
- In none of the previous research has the MAP legislation updating mechanism been used
- Real value of thresholds over time has not been examined since the Panel's report
- Relative small sample of reference families
  - in 2005: ~ 9000 reference families (8.45 % household types or 14 % of U.S. population)

# What We Don't Do

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- Suggest a specific choice as optimal
- Present consistent measure of resources
- Present differences in the choices in terms of the percentage of people who are poor

# FCSU Threshold: Spending

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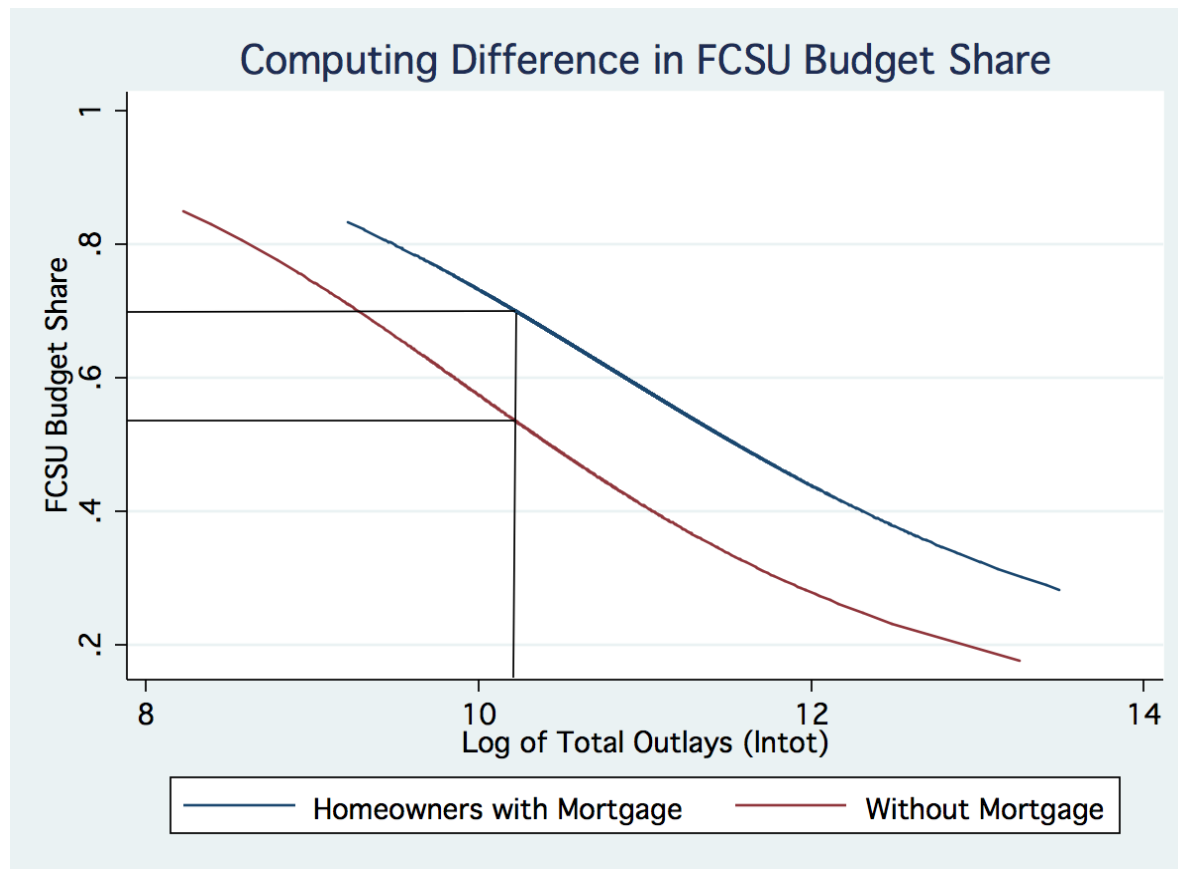
- CE-Defined
  - Food (includes Food Stamps value)
  - Clothing
  - Utilities (includes telephone)
  - For renters, shelter expenditures
  - For homeowners, non-vacation shelter expenditures that include
    - Mortgage interest payments
    - Prepayment penalties
    - Property taxes
    - Maintenance, repairs, insurance and other related expenditures
- Out-of-pocket
  - CE-defined + mortgage principal repayments

# Potential Problems with Shelter Spending and Possible Solutions

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- **Homeowners without a Mortgage**
  - Drop from the determination of OOP FCSU
  - Adjust the OOP FCSU amount for Homeowners without a mortgage to reflect the OOP FCSU amount they would have had a mortgage payment
- **Renters with Subsidized Rental Payments**
  - Drop from the determination of OOP FCSU
  - Impute a rental payment that they would have made if they were not subsidized
- **Owners and renters treated differently**
  - Include market value of meeting shelter needs
  - Imputed market rent for subsidized housing, rental equivalence for owners

# Adjustment to FCSU: Homeowners without a Mortgage



$$\ln(\text{FCSU}/\text{Spending on other goods}) = 13.0333 - 1.6825 \text{ Intot} + .0480 \text{ Intot}^2 - .7065 \text{ No Mortgage}$$

# Imputed Rents for Subsidized Housing

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- Regression of log rent (*sample: all renters*)
- Regressors
  - Housing unit characteristics
  - Subsidy unit dummy
  - Income
  - Interaction of subsidy dummy with income
- 5 regressions
  - 2004, 2005, 2006, 2007, 2008



# Shelter Definitions Examined for this Study

Chart legend names:	CE-Defined	OOP	OOP Drop	OOP Adjust	Housing Consumption
<b>Homeowners:</b>					
<i>Add Mortgage Principal</i>		X	X	X	
<i>Drop Homeowners without Mortgages</i>			X		
<i>Adjust FCSU of Homeowners without Mortgages</i>				X	
<i>Use Rental Equivalence</i>					X
<b>Renters:</b>					
<i>Drop Subsidized Renters</i>			X		
<i>Impute Rents to Subsidized Renters</i>				X	X
➤ Resources	0	0	+	+	+

# Threshold Specification: This Study

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- *Determining the FCSU threshold*
  - *MAP Threshold  $\approx 1.20 * 33^{\text{rd}}$  percentile*
- Update by
  - Changes in median FCSU holding 33<sup>rd</sup> percentile constant
    - Approximately = Panel's and BLS's 78% and 83% of median
  - Changes in 33<sup>rd</sup> percentile each year
    - = recalculating the threshold each year

# Changes in Real Consumption Over Time

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- *12-quarter based threshold*
- *Estimate rolling quarter to quarter thresholds*
- *In December 2006 \$\$*

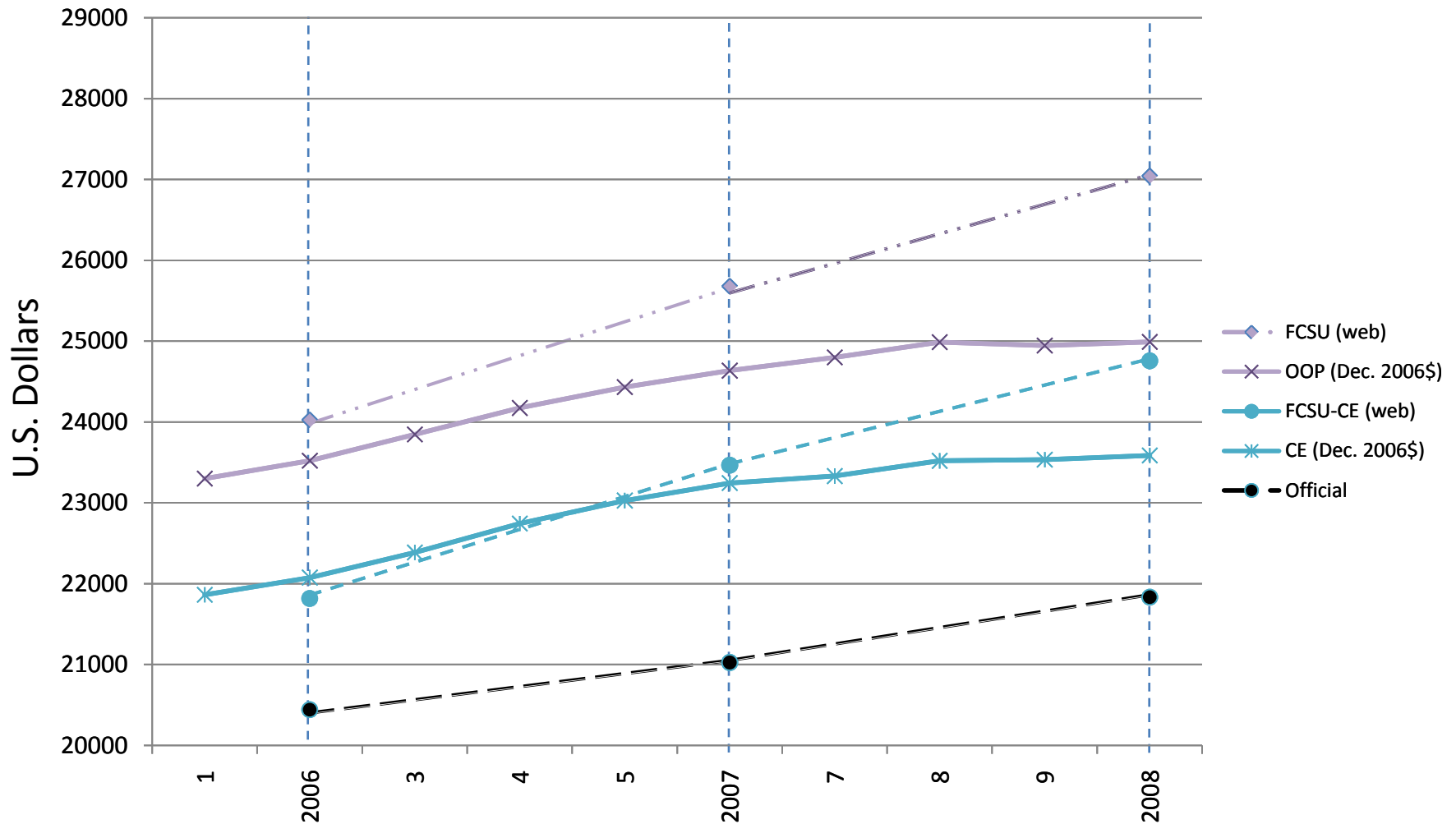
1. 2004Q1 – 2006Q4
2. **2004Q2 – 2007Q1**                      **2006 Annual Threshold**
3. 2004Q3 – 2007Q2
4. 2004Q4 – 2007Q3
5. 2005Q1 – 2007Q4
6. **2005Q2 – 2008Q1**                      **2007 Annual Threshold**
7. 2005Q3 – 2008Q2
8. 2005Q4 – 2008Q3
9. 2006Q1 – 2008Q4
10. **2006Q2 – 2009Q1**                      **2008 Annual Threshold**

# Estimation Sample

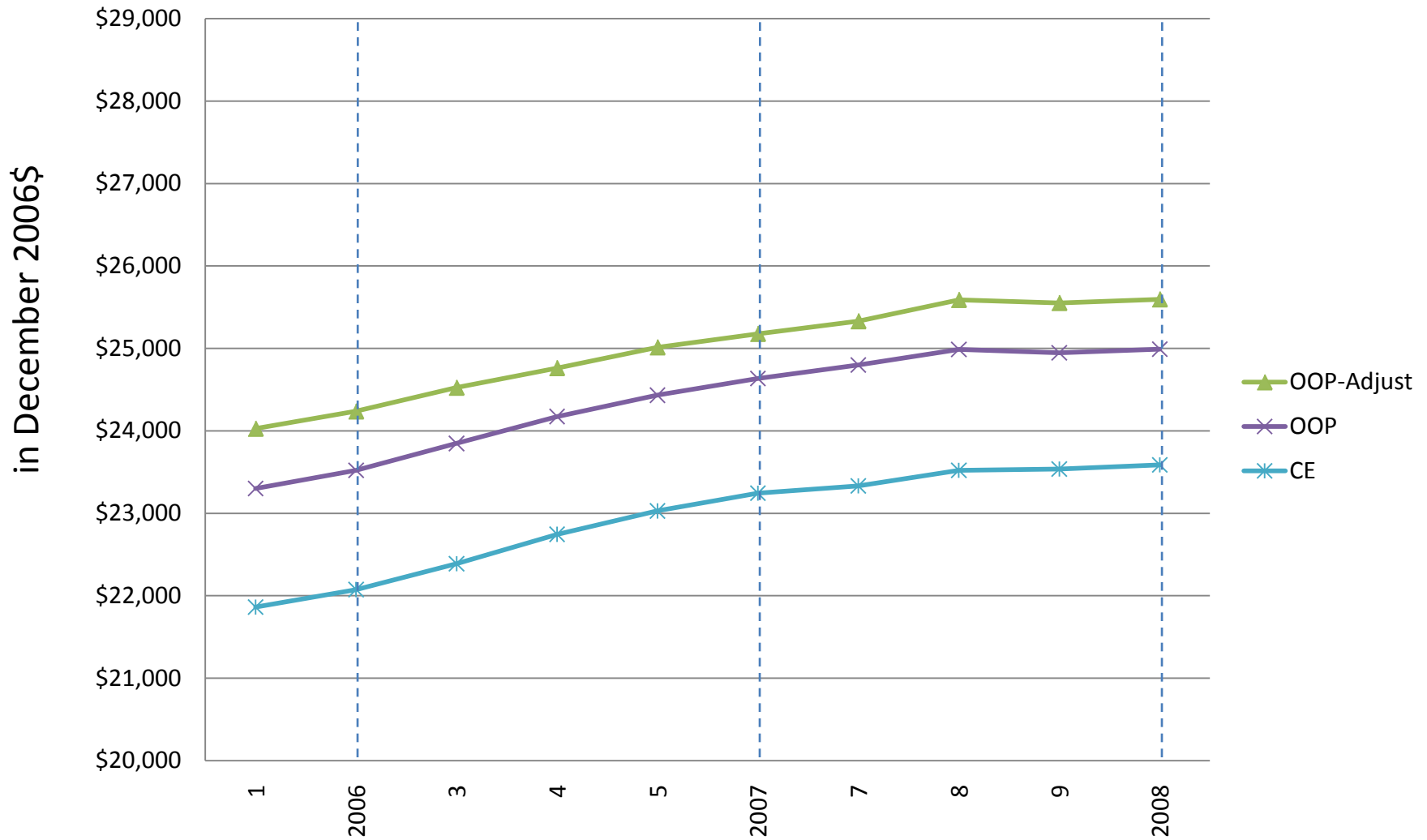
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- Reference families
  - Two adults with two children
- All consumer units
  - Apply 3-parameter equivalence scale
  - Calculate threshold for reference family

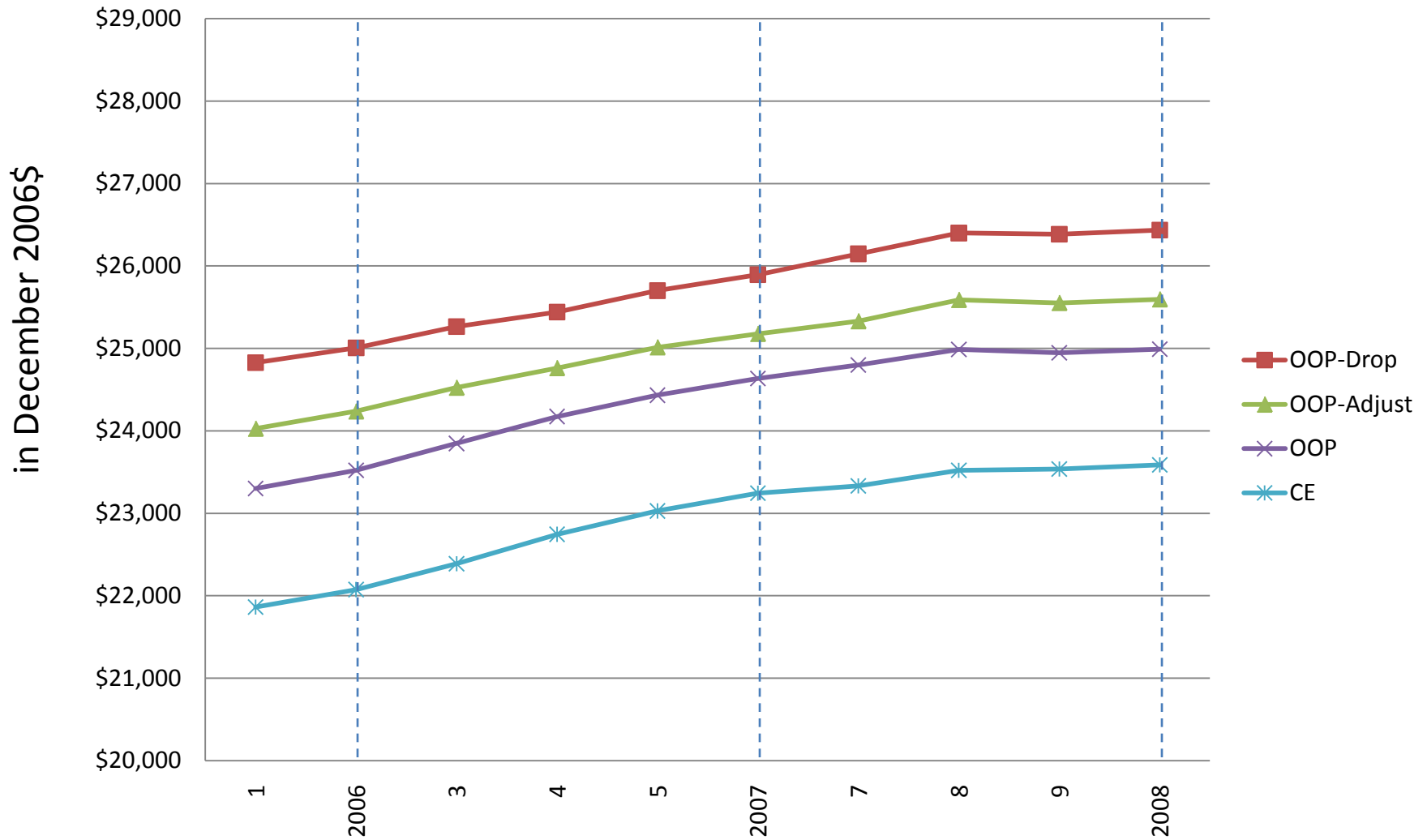
# Thresholds in Current and Real \$\$ Updated by Median: Reference Families



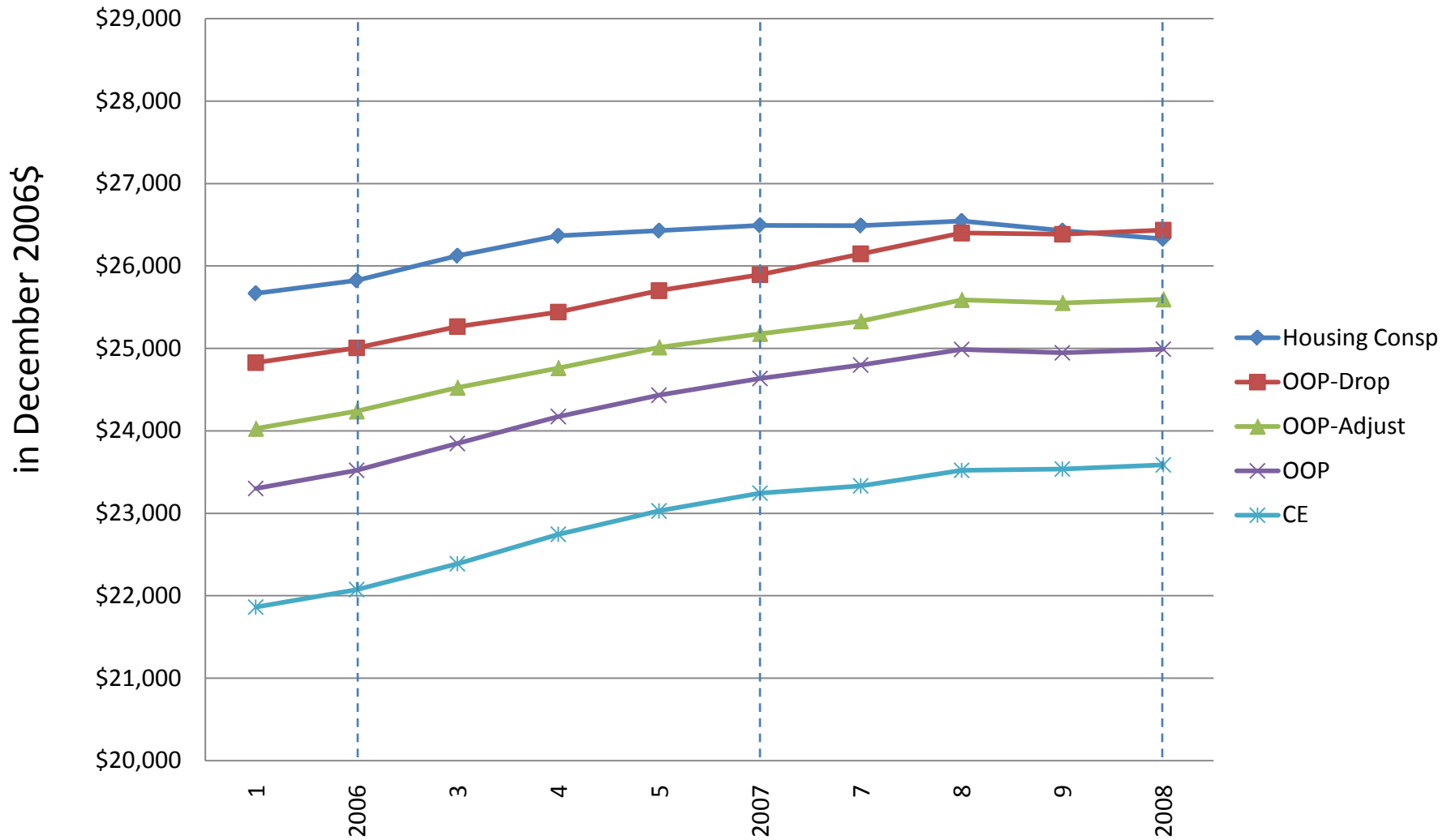
# Thresholds Based on 33<sup>rd</sup> Percentile Updated by Median: Reference Families Only



# Thresholds Based on 33<sup>rd</sup> Percentile Updated by Median: Reference Families Only



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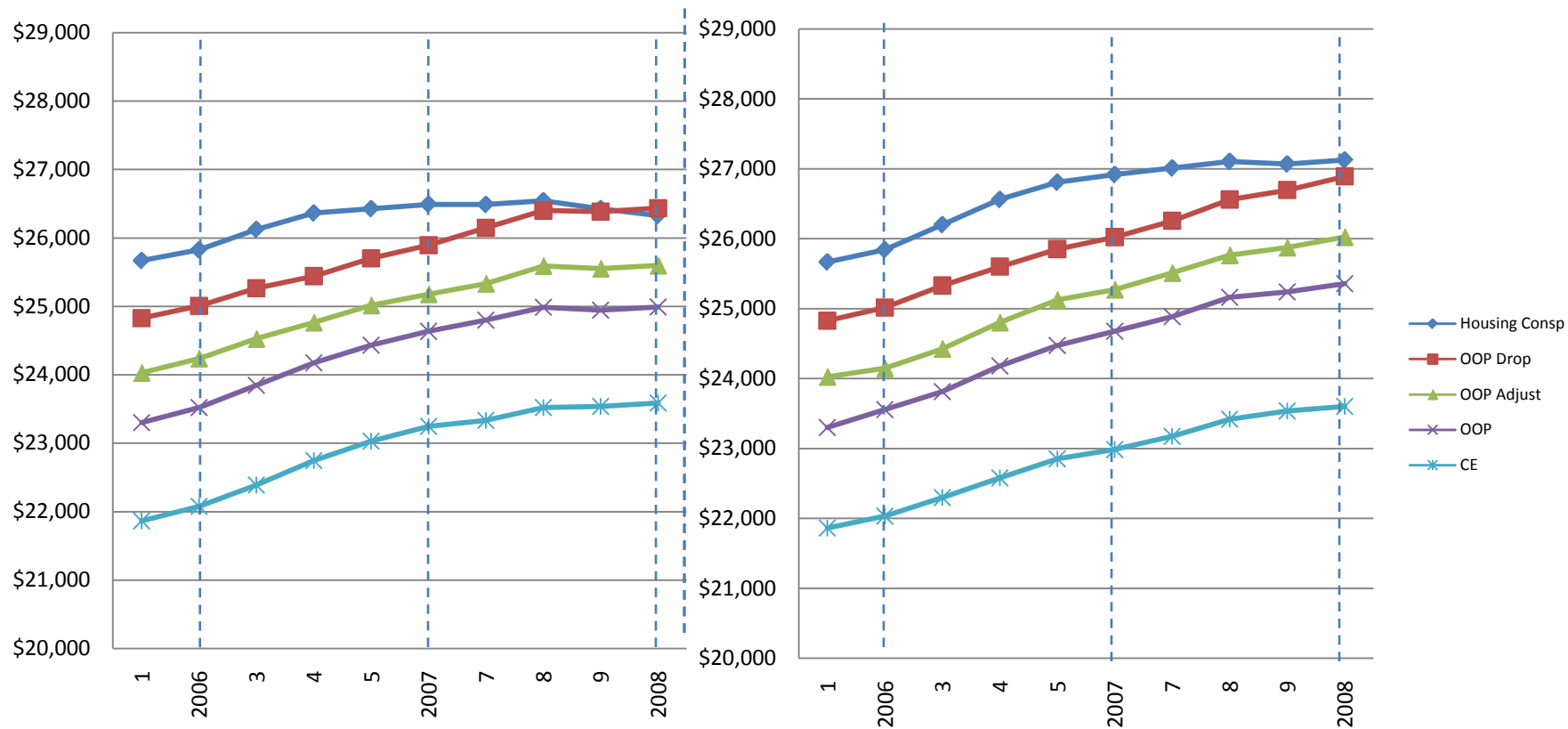


# Thresholds Using 33<sup>rd</sup> Percentile Updated by Median or 33<sup>rd</sup> Percentile

Sample: Reference Families Only

## Updated by Median

## Re-estimated



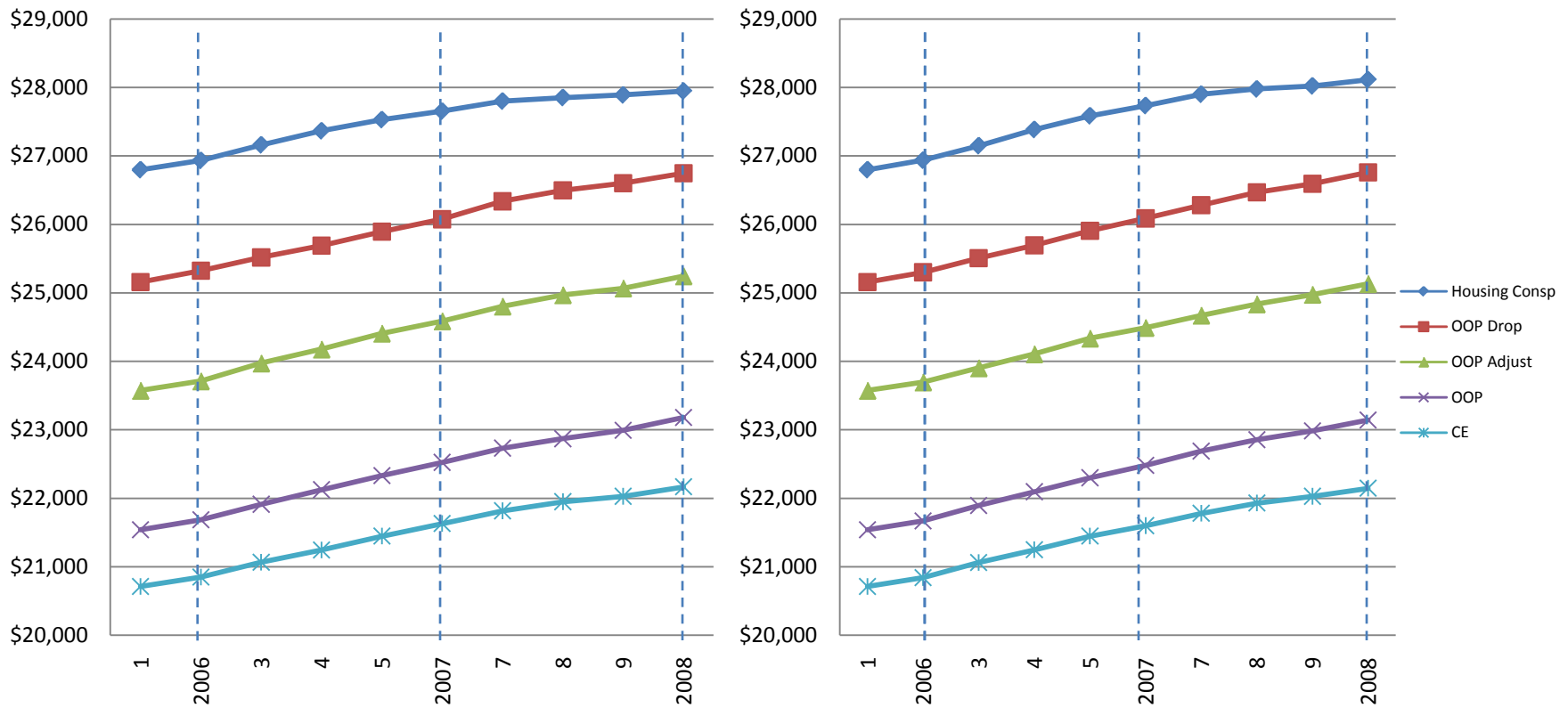
Reference Family Thresholds in December 2006\$

# Thresholds Using 33<sup>rd</sup> Percentile Updated by Median or 33<sup>rd</sup> Percentile

Sample: All Consumer Units

Updated by Median

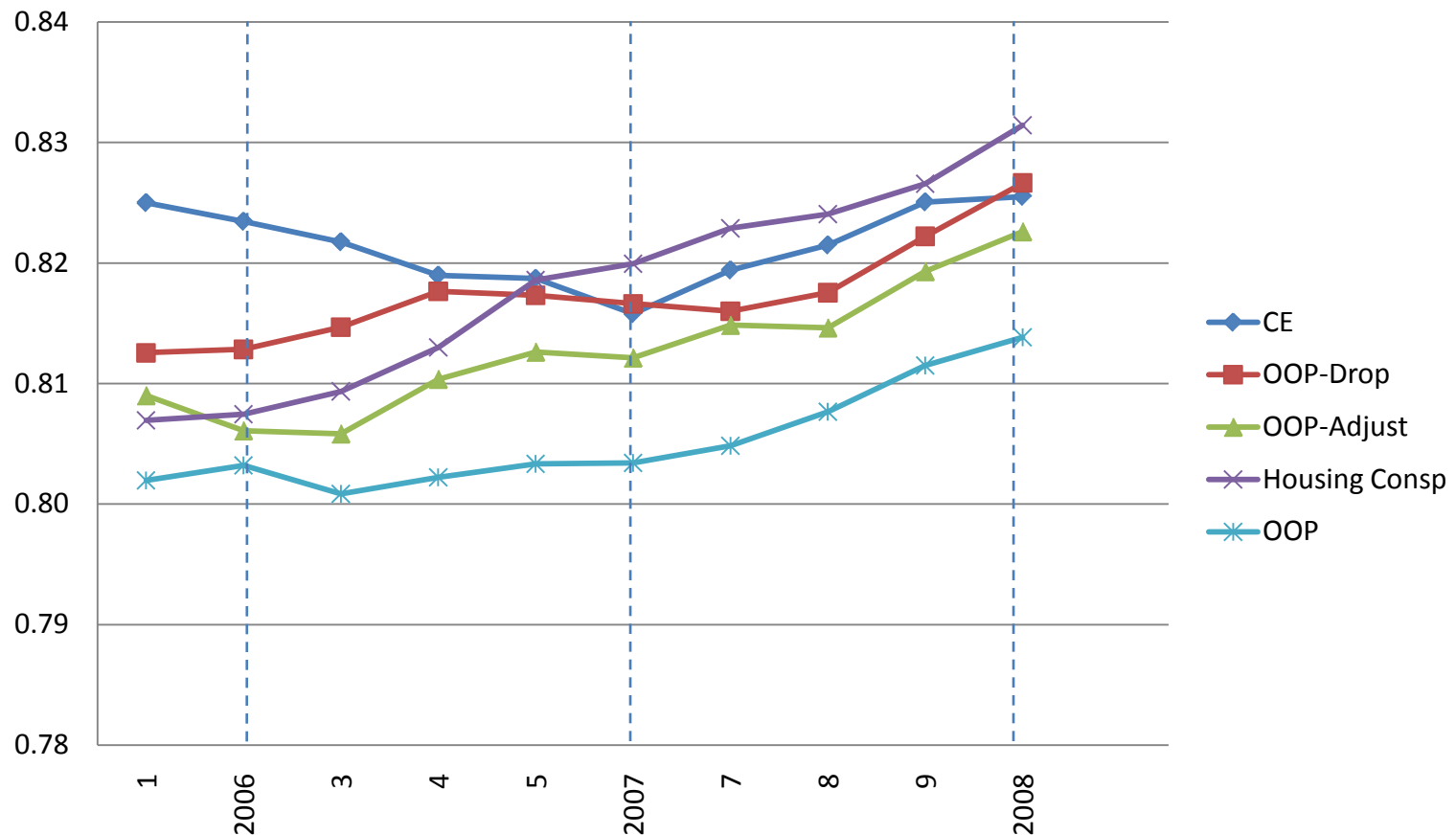
Re-estimated



Reference Family Thresholds in December 2006\$

# Ratio of 33<sup>rd</sup> Percentile to Median

Reference Families Only (based on December 2006\$)



# Summary

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- Definition of shelter spending or consumption has a significant impact on the level of threshold
  - OOP and OOP versions < housing consumption
- Dropping homeowners and subsidized renters from OOP lead to higher estimates of OOP spending on FCSU than
  - OOP alone
  - OOP with adjustments
- During the time period studied
  - Modest growth in real level of needs
  - Most of the growth occurred prior to 2007, since that time, real level of need constant

# Summary (cont.)

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- NAS recommendation that once thresholds are set they should be updated to reflect changes in median spending on FCSU lead to
  - Lower growth rates than updating the threshold continually to reflect changes in the 33<sup>rd</sup> percentile.
- Using the full CE sample, adjusting for differences in spending by use of the equivalence scale, versus consumer units with 2 adults and 2 children lead to
  - Lower initial levels of OOP spending on FCSU but higher rates of growth
  - Higher initial estimates of FCSU needs based on housing consumption but lower growth rates

# Food for Thought

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- What needs?
  - FCSU
  - Others (e.g., medical care, child care)
- What “costs” to meet?
  - Spending needs
  - Consumption needs
- Whose shelter needs?
  - Homeowners and renters as are
  - Homeowners the same
  - Renters the same
  - All homeowners and renters the same
- Who is the reference unit for threshold determination?
  - Two adults with two children
  - All consumer units

# CONTACT INFORMATION

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