

National Academy of Sciences (NAS)-Based Poverty Thresholds: Details of Alternatives and Choices in Specification

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National Academy of Sciences Recommendations

- 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
 - ▶ Percentage of median expenditures
 - ▶ Multiplier for other needs
 - ▶ Updating
 - ▶ Real growth in consumption

- 3.1 Adjustments

The NAS recommended a Procedure.

This paper builds on research since 2005 JSM

- Threshold
 - ▶ Concepts
 - ▶ Basic needs
- Assumptions
 - ▶ Data
 - ▶ Time period
 - ▶ Distribution
 - ▶ Reference unit
 - ▶ Use of equivalence scales
 - ▶ Updating
- Equations
- Results when assumptions change

Concepts Used to Define Thresholds

■ Spending

- ▶ How much does it cost, or 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 cost, or what is the consumption value, to meet basic needs?

Thresholds Defined in Terms of...

Food, Clothing, Shelter, and Utilities FCSU

- Spending
 - ▶ Official poverty threshold
 - ▶ CE-publication expenditures (NAS and Census)
 - ▶ Out-of-pocket (OOP) expenditures
 - Inclusion of mortgage principal payments

- *Alternative:* Spending and Consumption
 - ▶ Expenditures with adjusted for select consumption

FCSU Threshold: Out-of-pocket Spending

- ▶ Food (includes Food Stamps value)
- ▶ Clothing
- ▶ Utilities (includes telephone)
- ▶ For renters, shelter expenditures
- ▶ For homeowners, non-vacation shelter expenditures that include
 - Mortgage interest payments
 - Mortgage principal repayments (“pp”)
 - Prepayment penalties
 - Property taxes
 - Maintenance, repairs, insurance and other related expenditures

FCSU Threshold Accounting for Consumption

- Out-of-pocket spending on
 - Food
 - Clothing
 - Utilities (includes telephone)
 - Rent of renters
- Food as pay
- Rent as pay
- Rental equivalence of owners

Caution....

- For a more complete consumption based threshold, would also need data on ...
 - ▶ Rent controlled or government subsidized housing
 - ▶ School breakfast, school lunch, WIC, energy assistance, elder coupons
 - ▶ Medical consumption not financed out-of-pocket
 - ▶ Goods and services received as gifts (“net” value of gifts)
- *And* values would be added to resources for consistency

Basic and **Alternative** Assumptions

- U.S. Consumer Expenditure Interview Survey (CE) FCSU expenditures
 - ▶ With mortgage principal payments (pp)
 - ▶ Without mortgage principal payments
- *Which CE data used and updated to threshold year?*
 - ▶ Time period
 - **Most recent three years**
 - **One year of data**
 - ▶ Independence of data
 - **Quarterly reports independent**
 - **Quarterly reports not independent**
 - ▶ CPIs used to update quarterly data to threshold year
 - **Annual**
 - **Moving average quarterly**
- *Which point on the distribution of the sum of FCSU expenditures?*
 - ▶ **Median multiplied by percentages of the median (0.78 and 0.83)**
 - ▶ **33rd percentile**
- *How to account for other basic needs?*
 - ▶ Apply multiplier to distribution point (1.15 to 1.25)
- *Whose expenditures are used as the reference?*
 - ▶ **Census family (related) composed of 2 adults and 2 children (CF)**
 - ▶ **Consumer units composed of 2 adults and 2 children (CU)**
 - ▶ **All members within the population**
- *How to derive thresholds for other units?*
 - ▶ Apply 3-parameter scale to threshold to obtain thresholds for other consumer units/family types

Threshold Equations

Have used in the past

$$\frac{(1.15 * P_L * Median) + (1.25 * P_H * Median)}{2}$$

➤ Used the midpoints of the percentages and multipliers

Recent proposal

$$1.20 * 33rd \text{ percentile}$$

Three-parameter Equivalence Scale

▶ **one and two adults**

$$[\text{adults}]^{0.5}$$

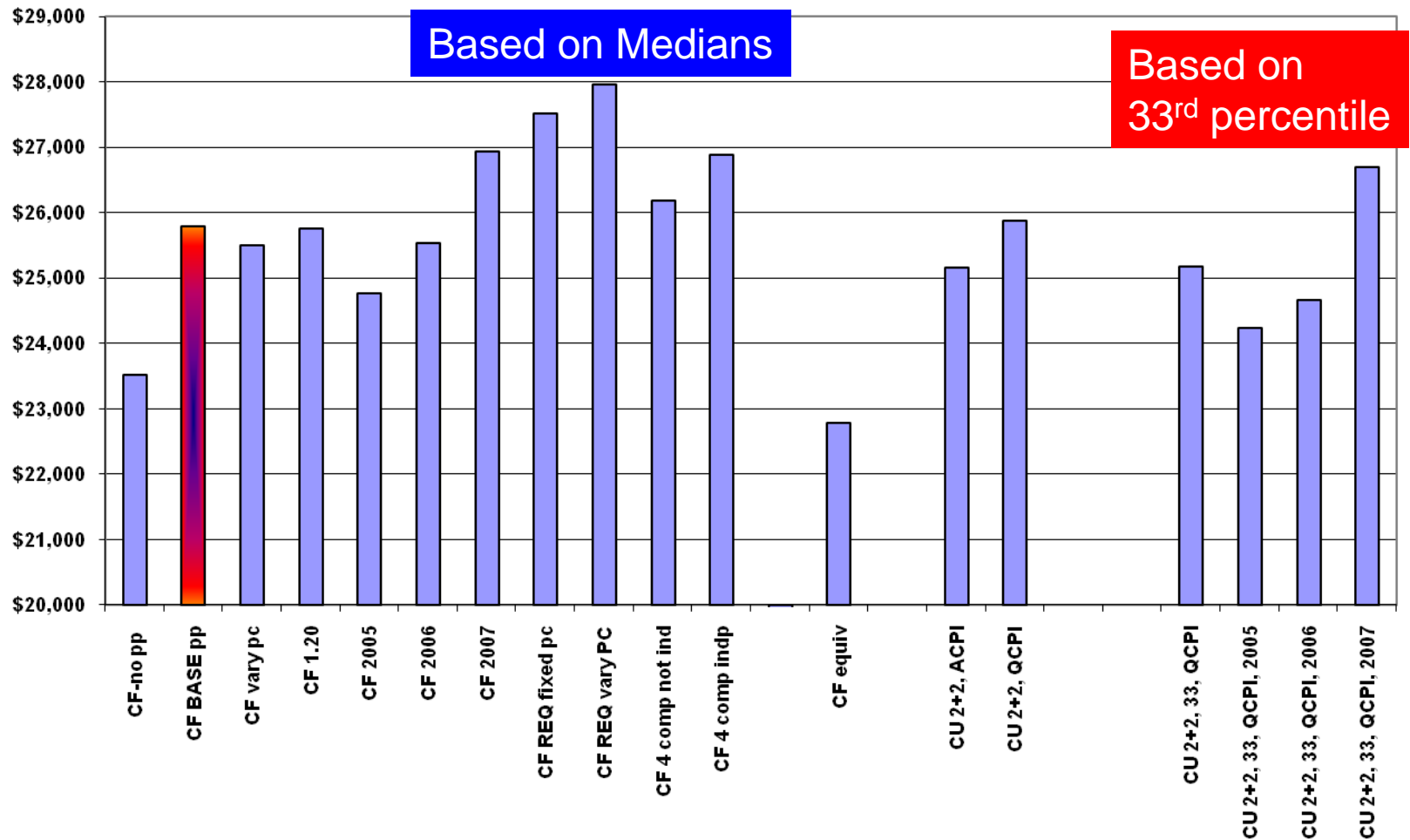
▶ **single parents**

$$[\text{adults} + 0.8 * 1\text{st child} + (0.5 * \text{children} - 1)]^{0.7}$$

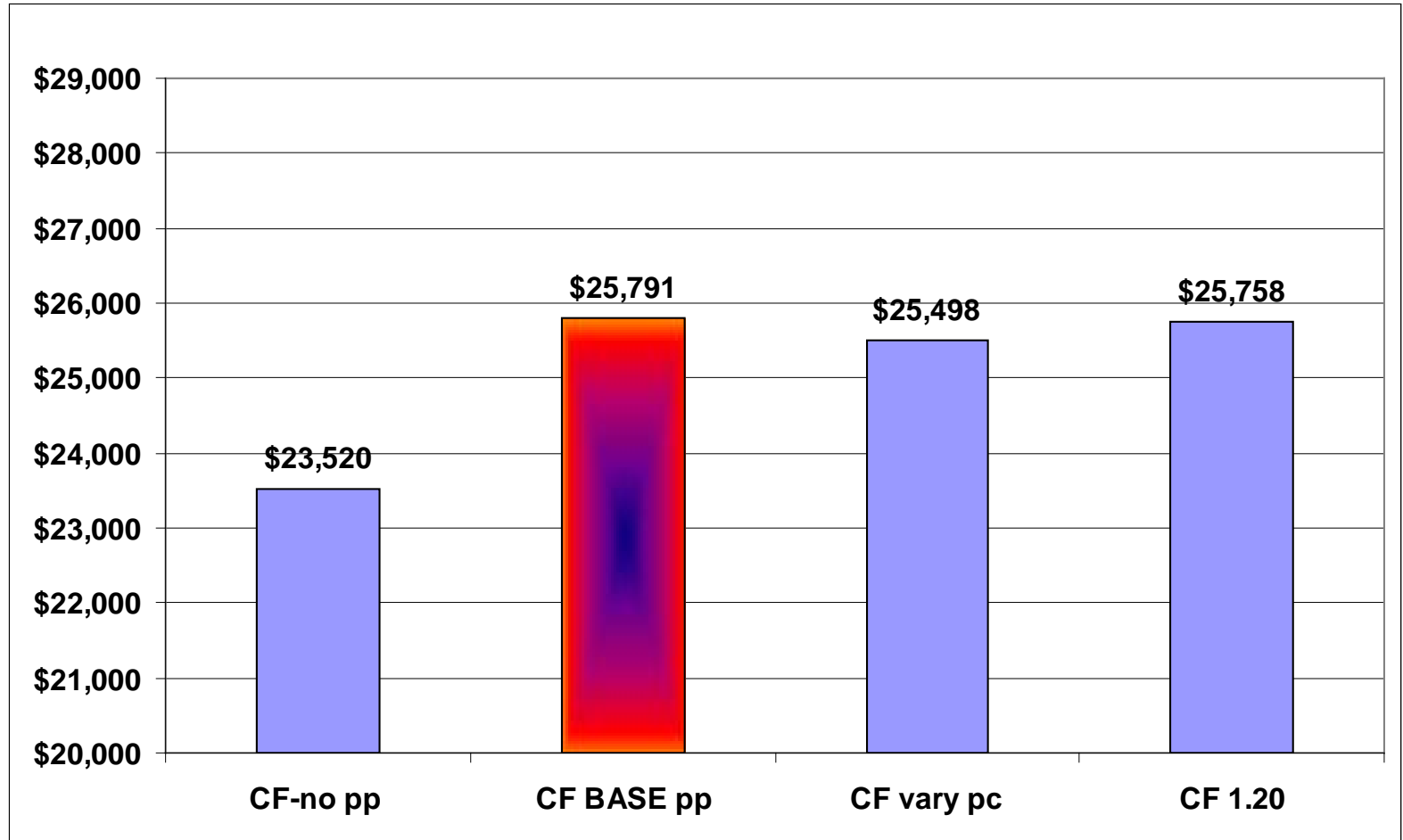
▶ **all other families**

$$[\text{adults} + 0.5 * \text{children}]^{0.7}$$

2007 FCSU Thresholds Based on Alternative Assumptions

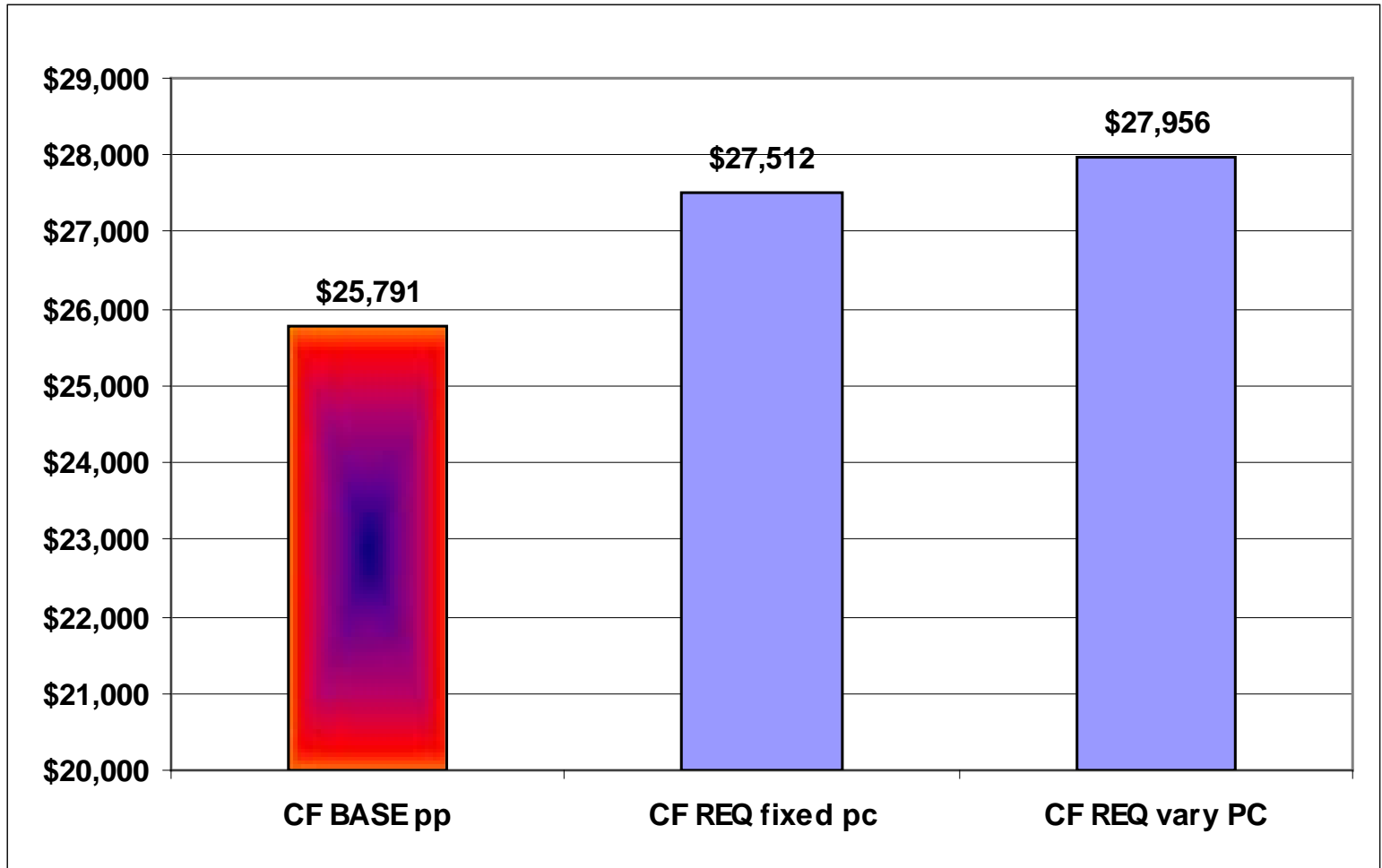


2007 FCSU Thresholds: Basic Assumptions

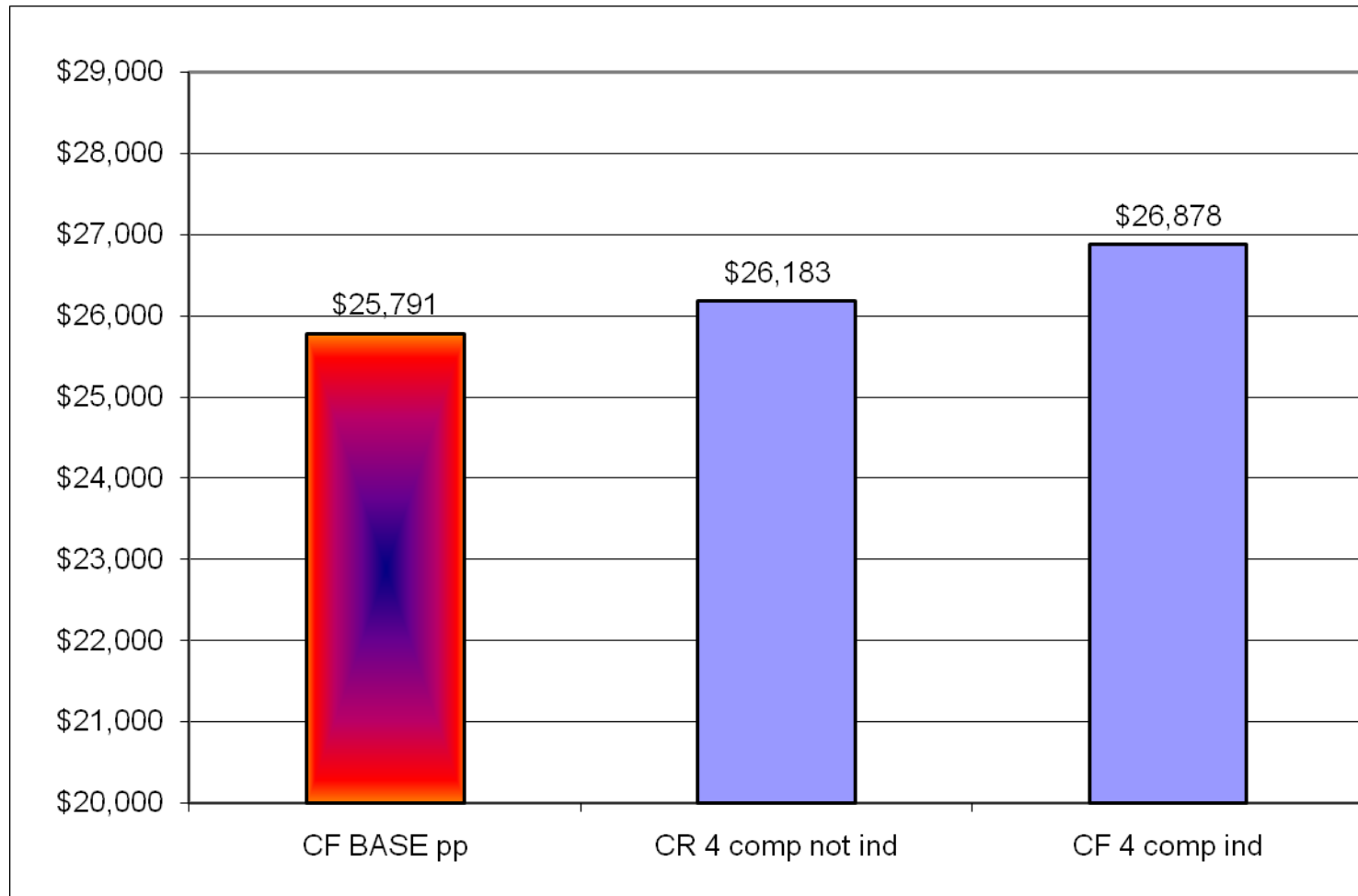


“CF” refers to Census family composed of 2 adults and 2 children

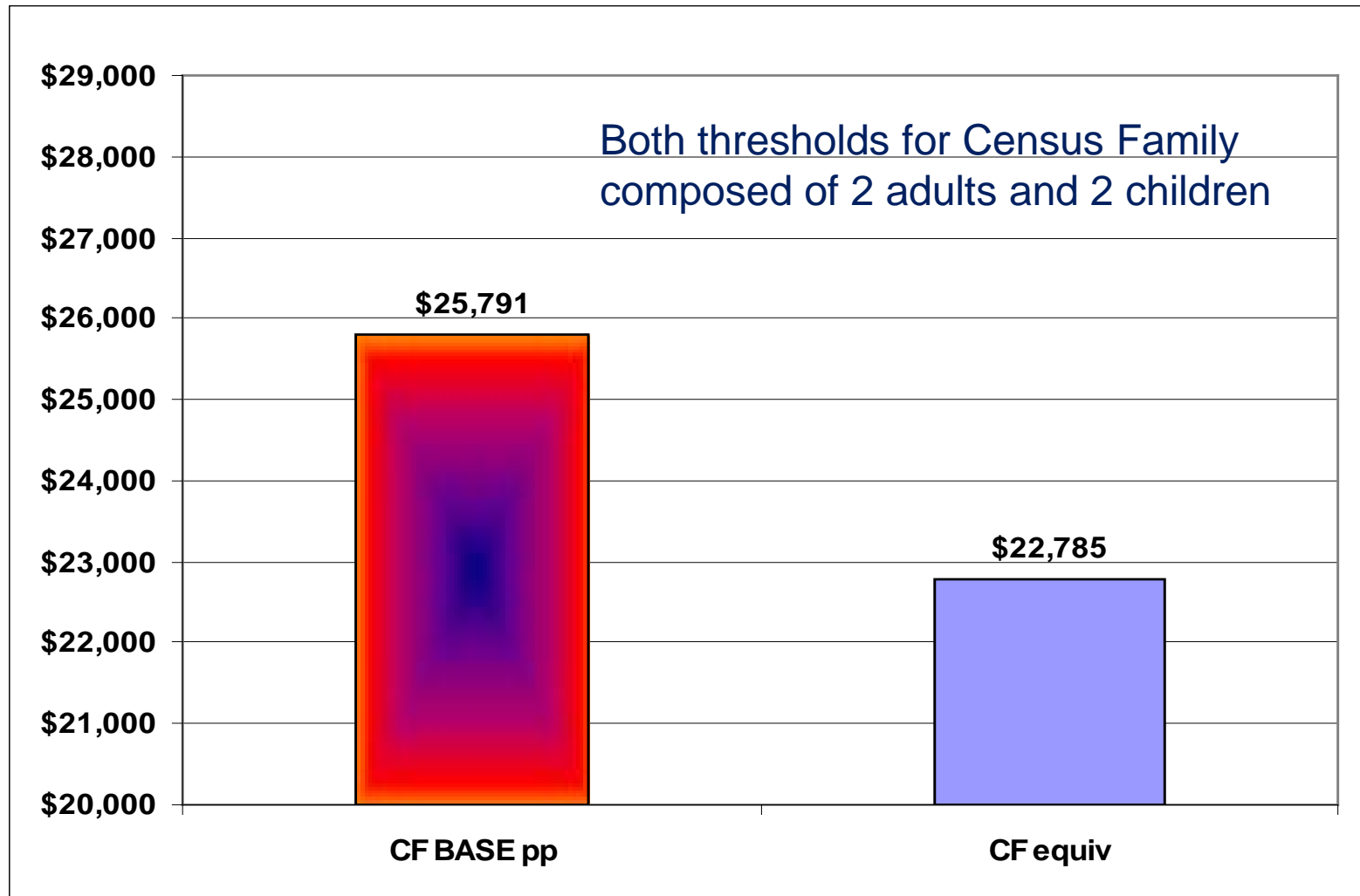
2007 FCSU Thresholds: Spending vs. Consumption



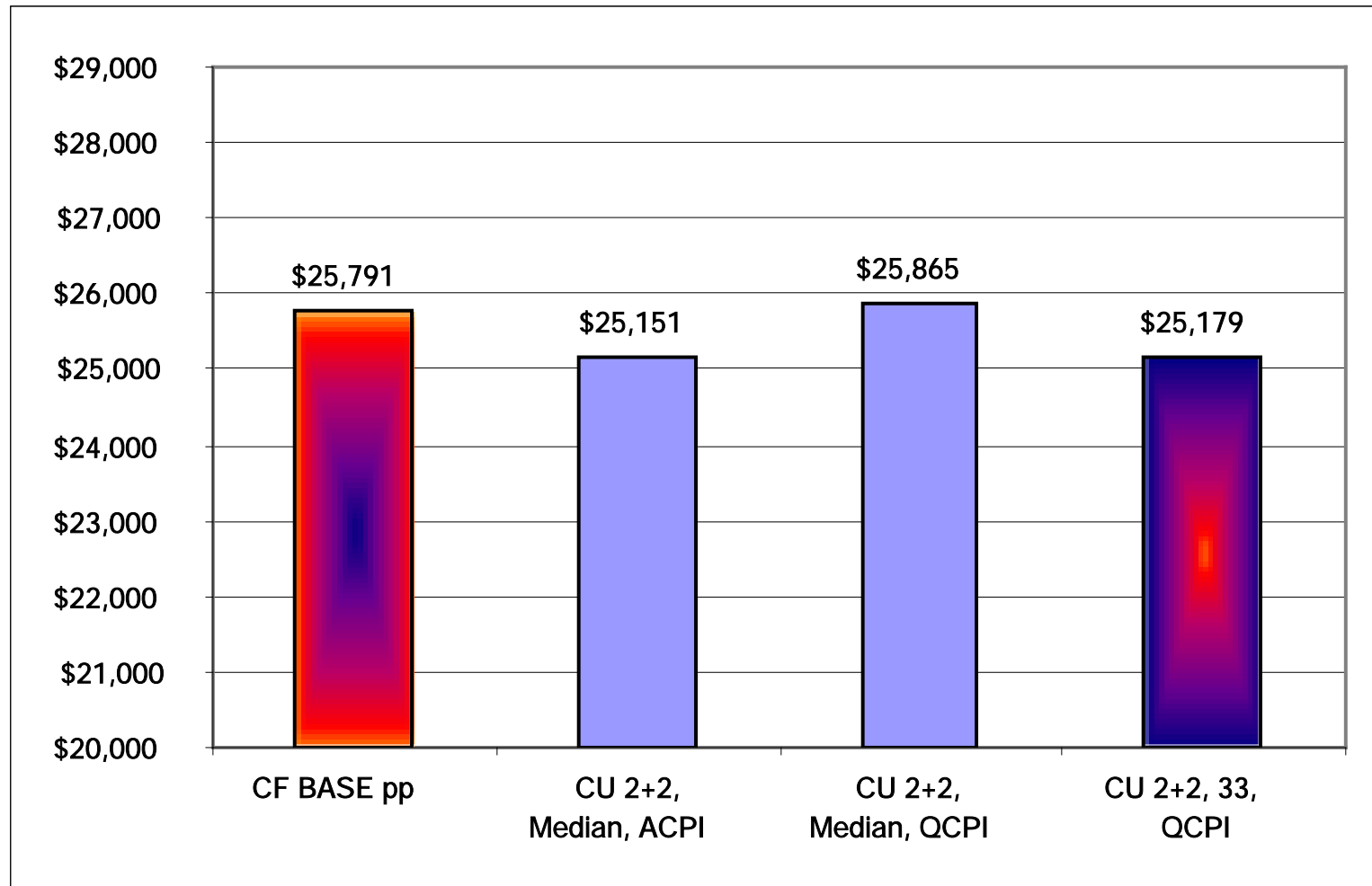
2007 FCSU Thresholds: Independent Quarters vs. 4 Complete Quarters



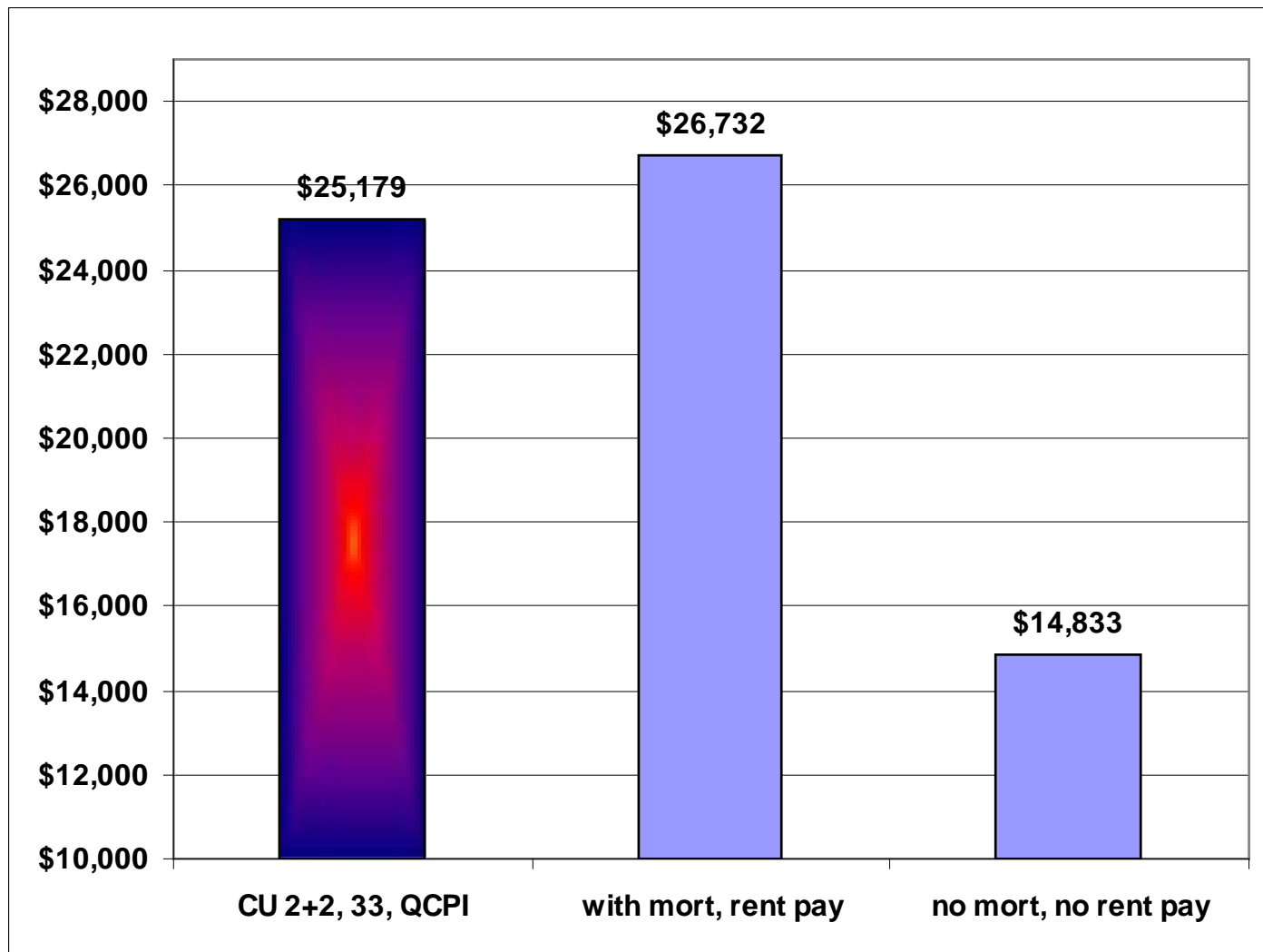
2007 FCSU Thresholds: Restricted to Census Families vs. Equivalized Adults



2007 Thresholds: Census Families vs. Consumer Units and Price Adjustment



2007 Thresholds for Consumer Units by Housing Payment Status



Changes in CE Interview Questionnaire in 2007Q2 that Can Affect Thresholds

- Mortgage edits in processing
- Change in question wording for food away from home expenditures

2007 Improvements to Mortgage Edits

■ Prior to 2007Q2

- ▶ Before 2006, Field Representatives (FRs) could not report a mortgage as an “interest only” mortgage.
- ▶ In 2006, FRs were given the ability to report a mortgage as “interest only”, but the information was not used in processing.

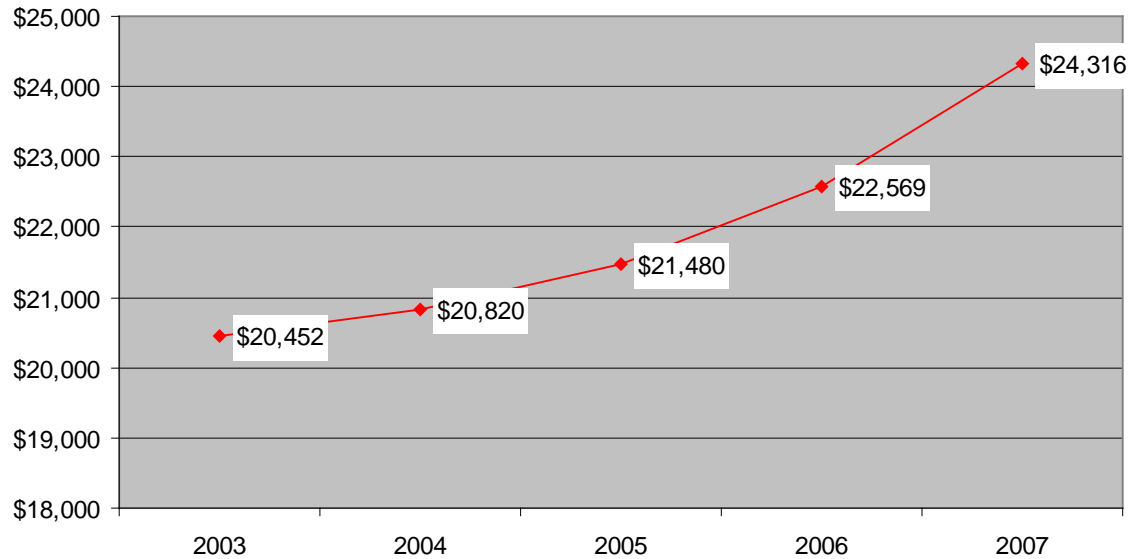
■ Beginning with 2007Q2

- ▶ The questionnaire was revised to better collect interest only mortgages.
- ▶ Mortgage edit processing began utilizing the “interest only” designation.

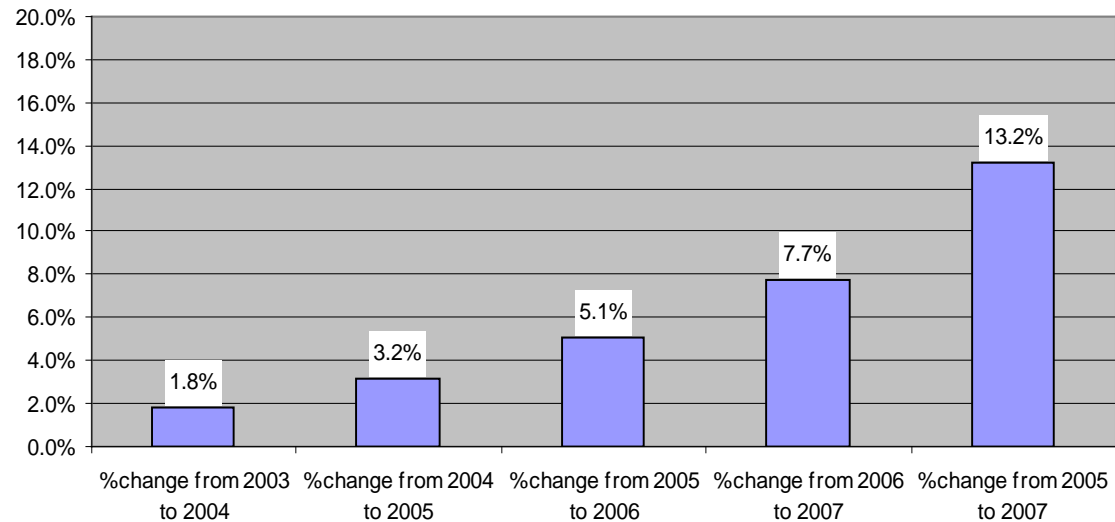
2007 Improvements to Food Away From Home Data Collection

- Prior to 2007Q2
 - ▶ The CE Interview survey collected the usual *monthly* expenditures for food away from home.
 - ▶ Cognitive testing indicated that collecting the usual weekly amount results in more accurate data.
- Beginning with 2007Q2
 - ▶ The questionnaire was revised to collect usual *weekly* expenditures for food away from home.
 - ▶ The Interview data for food away for 2007 was more comparable with the Diary data for 2007 as compared to past years.

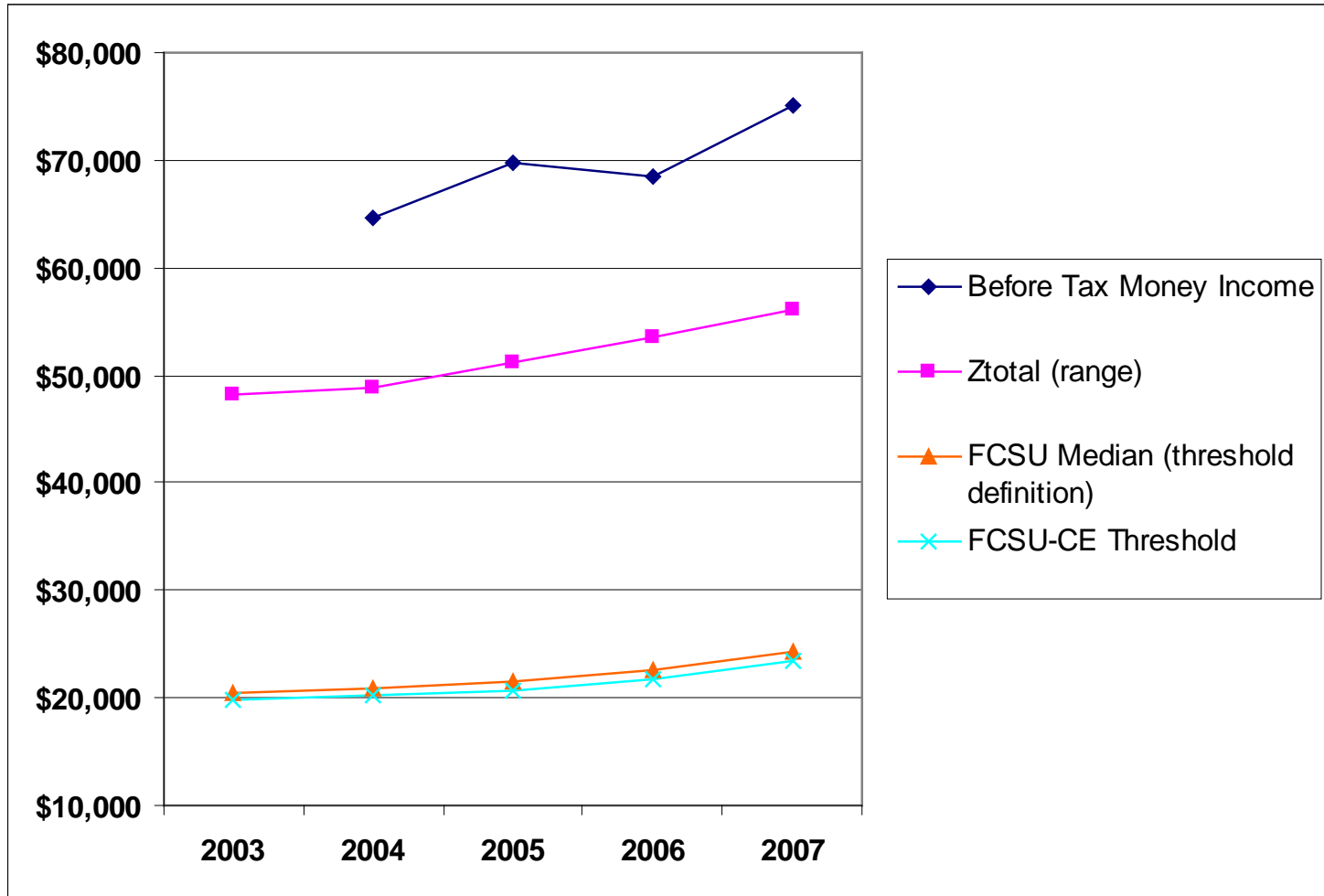
CE Interview-Based FCSU Median Expenditures (no principal payments)



Year-to-Year Percentage Changes in Median FCSU Expenditures (no principal payments)

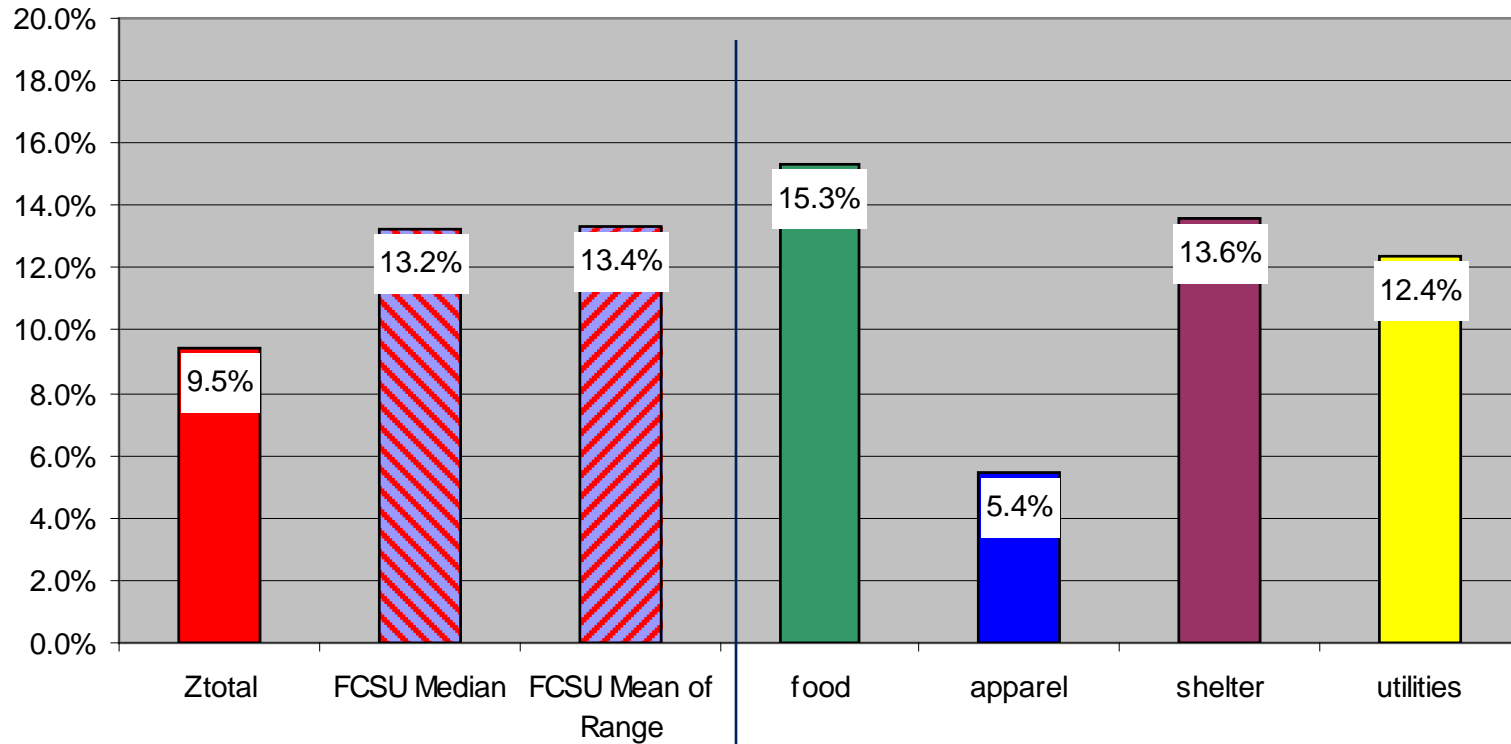


Income and Expenditures: Census Family



FCSU: without principal payments

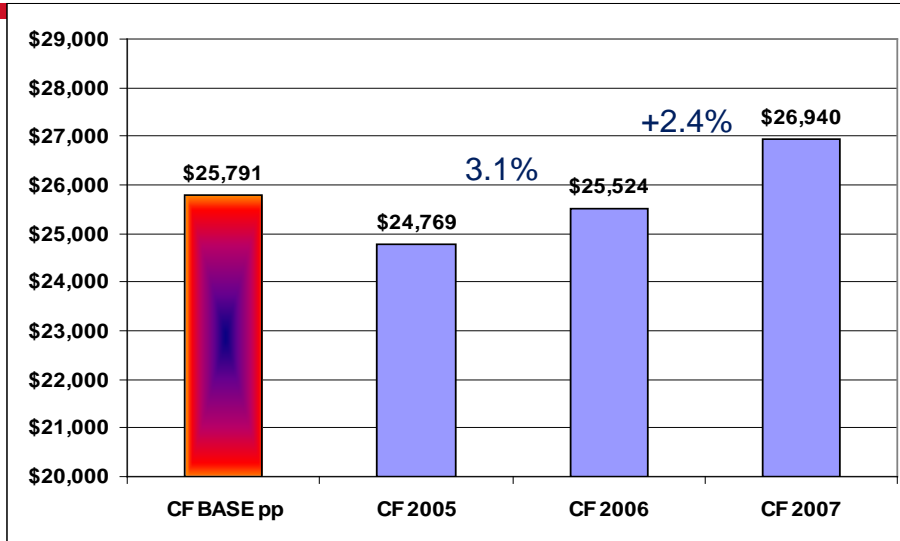
2005 to 2007 Percentage Changes in "Median" Expenditures



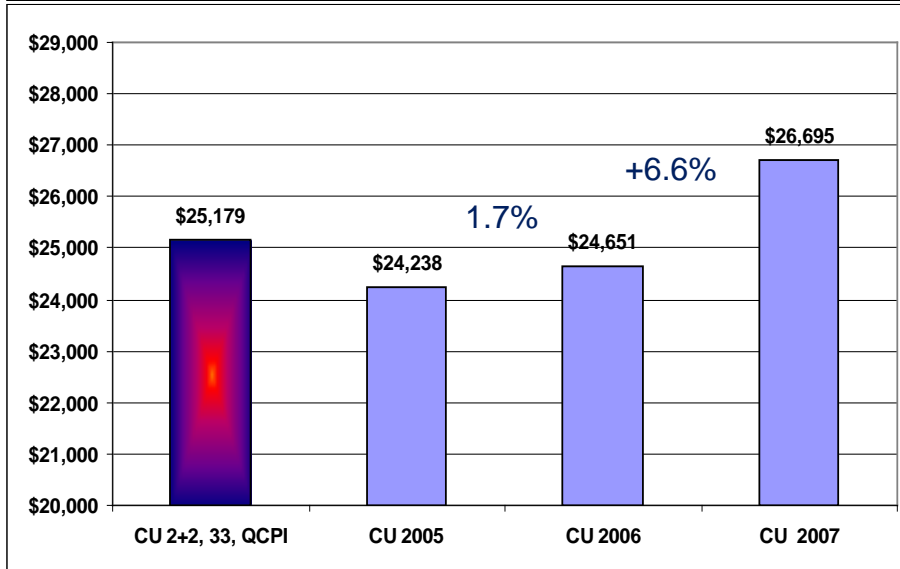
"Median" expenditures based on data for thresholds
(e.g., 2007 "median" expenditures based on data from 2005Q2-2008Q1)

Shelter in this example does not include mortgage principal payments

2007 FCSU Thresholds: Reference Unit and Using Three Years of Data vs. One



Census Family



Consumer Unit

Summary and Conclusions

- Spending- and consumption-based thresholds
- Underlying assumptions affect threshold levels
 - ▶ With or without mortgage principal payments
 - ▶ Define needs in terms of consumption
 - ▶ Reference unit: Census family or consumer unit
 - ▶ Use all data or only data for reference unit
 - ▶ Years or quarters of data to use
 - ▶ Quarters independent or not
 - ▶ Update underlying data using annual versus rolling average quarterly price indexes
 - ▶ Change in CE question wording affect threshold levels
- How will differing assumptions affect trends?
 - ▶ To be examined in the future

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