

# The Chicago Fed Income-Based Economic Index (the IBEX) Consumer Sentiment and Spending

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[http://www.chicagofed.org/webpages/people/toussaint-comeau\\_maude.cfm](http://www.chicagofed.org/webpages/people/toussaint-comeau_maude.cfm)



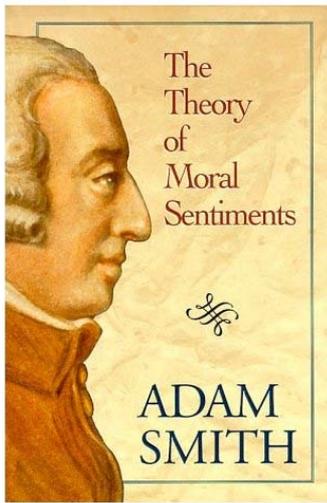
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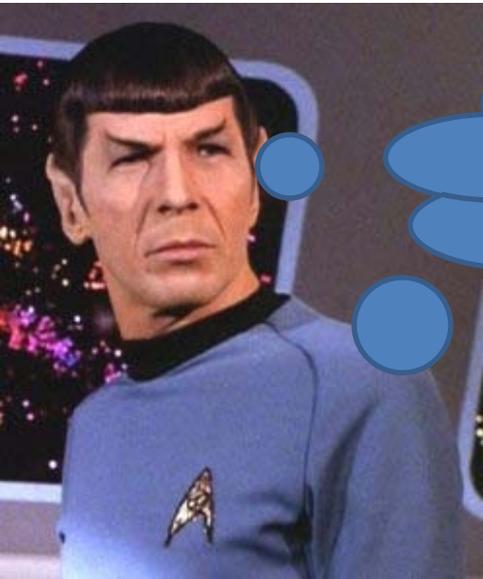


Adam Smith was one of the earliest supporters of the idea of the effects of psychology on economic decision making... that people's emotions and thoughts can affect how they make decisions about money. (*Theory of Moral Sentiments*, 1759)

## In the 1800s...A Rational Approach

Economists model behavior by making assumptions about how people make decisions

In standard neoclassical models, rational agents make decisions to maximize their private utility, based on all available information



Of Course, Naturally!  
Why Not?

By the mid 1900s... A clearer understanding of how much psychology plays into economics.

Behavioral economics is the study of the effects of psychology on economic decision making.

The field of behavioral economics has extended economists' understanding of preferences to account for “psychological factors.”

Portraying the connection between sentiment and spending/  
economy in psychological terms

*Animal spirit...*



Household consumption is influenced by spontaneous  
“optimism” and “animal spirits.”

John Maynard Keynes, (General Theory of Employment, Interest, and Money, 1936).

# Portraying the connection between sentiment and spending/ economy in psychological terms



...In addition to factors that affect a consumer's ability to pay, consumption is based on a consumer's "willingness to pay"

George Katona (founder of the Survey Research Center at the U of M, which generate the Index of Consumer Sentiment).

# Plan of today's talk

Why consumer sentiment is important?

What additional information do measures of consumer sentiment contain?

Why we might want to look at consumer sentiment and “components” of consumer sentiment and spending by demographic group?

Summary of research: What we have asked,  
What we have learned

# Objectives of today's talk

Discuss the link between consumer sentiment and personal/demographic characteristics.

Discuss how individual sentiment relates to and may help predict spending behavior.

Present a resource tool—the Chicago Fed Income-based Economic Index—The IBEX

# Why consumer sentiment is important? *capturing increased “uncertainty”...*

Close attention is paid to how consumers feel about the economy and their personal financial prospects, particularly during times of economic stress.

Greater “liquidity constraints” during such times suggests more “excess sensitivity” of consumption relative to income (contrary to the prediction of Friedman’s Permanent income hypothesis).

Lower consumer confidence reflects higher uncertainty about the future and enhances the precautionary motive for savings (i.e., lower consumption).

# Why consumer sentiment is important? *A barometer of economic activities...*



# Why consumer sentiment is important?

*A barometer of economic activities...*

Nationally, household spending on final goods and services (retail sales) represents about 65% of all expenditures for final goods and services, as measured by gross domestic product (GDP).

Since private consumption expenditure accounts for such a large proportion of GDP, if consumer sentiment is an indicator of the way people plan to spend their money, it could signal changes in the direction of the economy, potentially, enhancing policymakers' efforts to smooth out the business cycle.

# Variations in Consumer Sentiment by Demographic Groups

*Why we might want to take a look at that...*



Consumers' sentiment (i.e., expectations of inflation, income, employment, and home values...) differ by demographic group (reflecting their personal experiences, subjective experiences, and exposure to information etc...).

# Variations in Consumer Sentiment by Demographic Groups

*Why we might want to take a look at that...*



Disaggregated consumer indexes by group provides a more detailed picture of group-specific spending behavior

## Variations in Consumer Sentiment by Demographic Groups

*Why we might want to take a look at that...*

Micro-level household sentiment data may tell us something about the welfare of certain segments of the population and how group-specific experiences differ across business cycle.

During a recession, the lower sentiment expressed by the less educated could reflect that they are disproportionately adversely affected.

Similarly during an economic expansion, continued pessimism by a certain subpopulation could be an indication that the benefits of economic expansion may not be reaching that group.

# Variations in Consumer Sentiment by Demographic Groups

*Why we might want to take a look at that...*

As policymakers seek to better understand the economic experiences of various societal groups over the business cycle, disaggregated group-level consumer sentiment data can be a useful tool in informing policy initiatives aimed at assisting these populations.

Policy interventions that better account for human nature can more effectively transform behavior/or respond to specific needs

# The Chicago Fed IBEX Project

## Our motivation...

Policy decisions that are made using aggregate data are often ultimately aimed at particular income and demographic groups.

People have different experiences of unemployment, and inflation and have different sentiment.

Measure macroeconomic situation from the perspective of distinct populations.

[http://www.chicagofed.org/webpages/research/data/ibex/ibex\\_consumer\\_sentiment.cfm](http://www.chicagofed.org/webpages/research/data/ibex/ibex_consumer_sentiment.cfm)

# The IBEX Project

- Historic IBEX-indices from micro data for specific socioeconomic demographic populations for different measures:
  - » Inflation
  - » Consumer sentiment
  - » Consumer spending/expenditure

# IBEX-Consumer Sentiment Groups

All Groups

Educational Attainment

Elderly

Gender

Income Quartiles

Marital Status

Married with Children

Poverty status

Race/Ethnicity

Region

Single Mother

Vehicle Owner

# What we are doing/research investigation using these IBEX data...

Measuring the extent to which group matters in a statistically rigorous manner.

Exploring explanations for group differences in ICS

- Business cycle components to the differences?
- Subjective experiences?
- Exposure to news media?

# What we are doing/research investigation using these IBEX data...

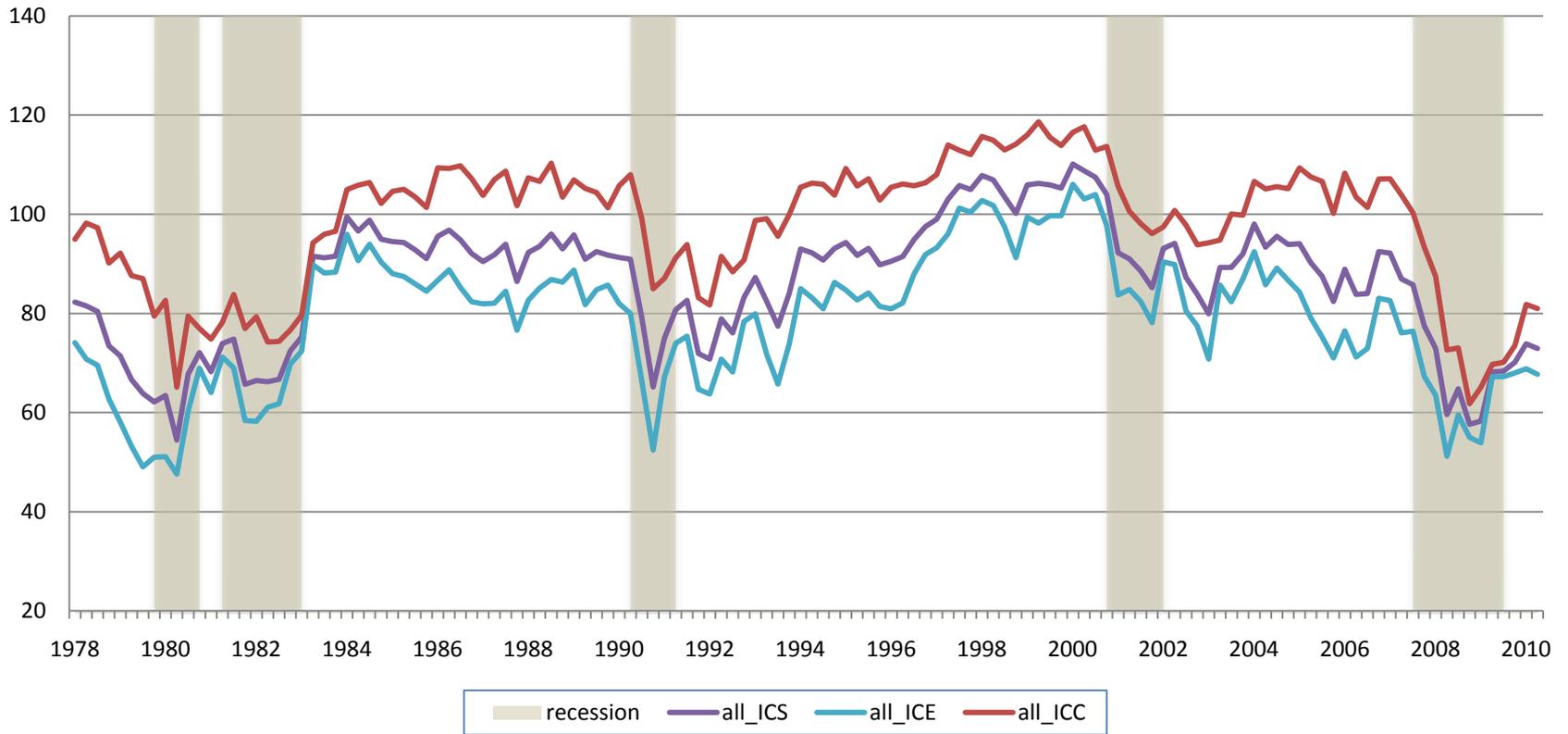
- Analyzing trends in aggregate spending and sentiment by demographic (i.e., income group)

# What we are doing/research investigation (coming up next...)

- Survey of consumer sentiment does not include data on expenditures. We matched the University of Michigan Survey of Consumer with the Consumer Expenditure survey (CEX) sentiment survey based on individuals demographic characteristics
- Impute a group-based confidence index for CEX households
- Goal: Assess whether and by how much individual sentiment helps to better predict aggregate spending behavior and group-specific spending behavior.

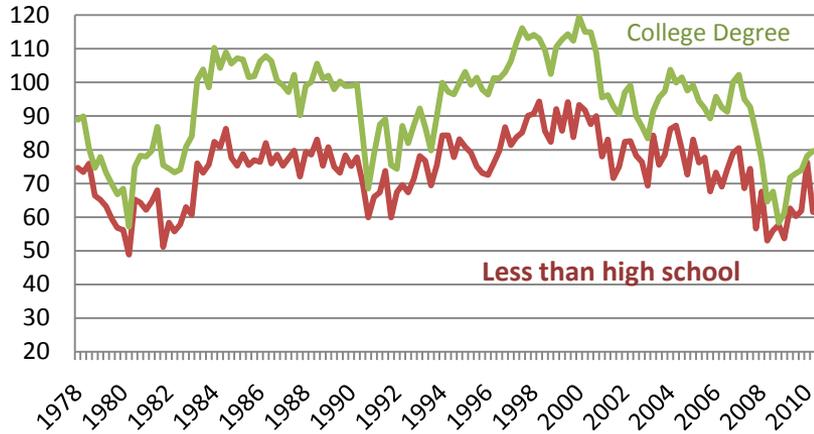
# Consumer Sentiment and the Business Cycle

Index of Consumer Sentiment (ICS)  
Index of Consumer Expectation (ICE)  
Index of Current Economic Condition (ICC)

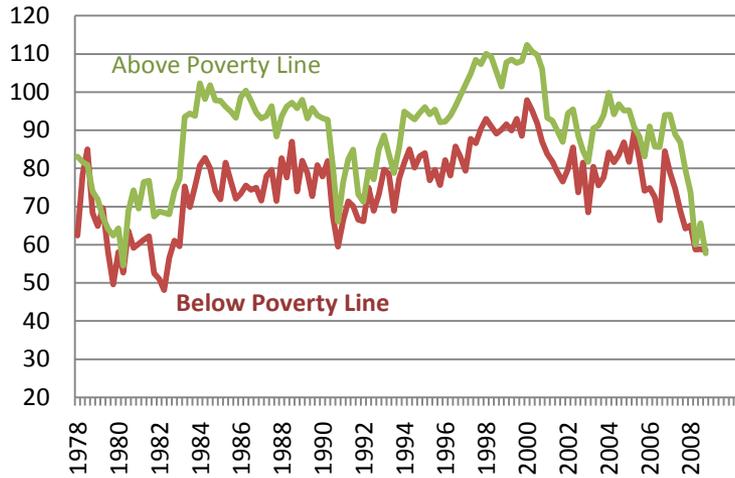


# Index of Consumer Sentiment by Demographic group

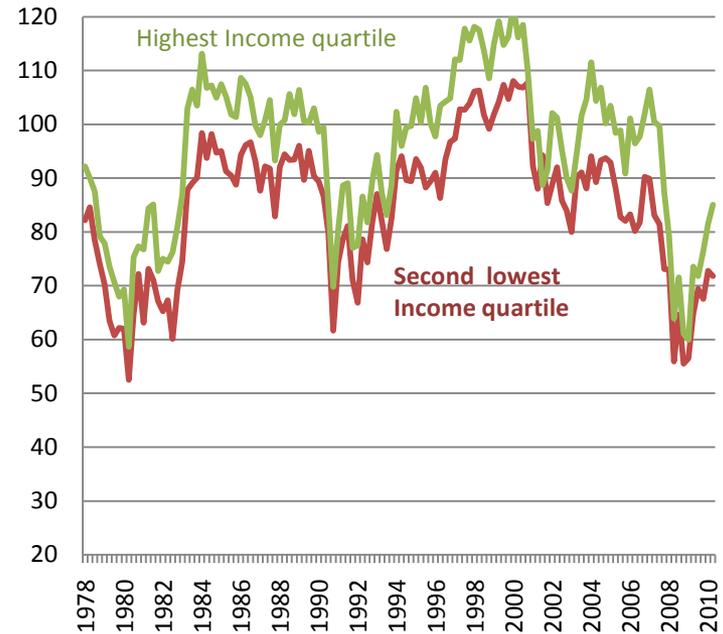
## Education Level



## Poverty Status

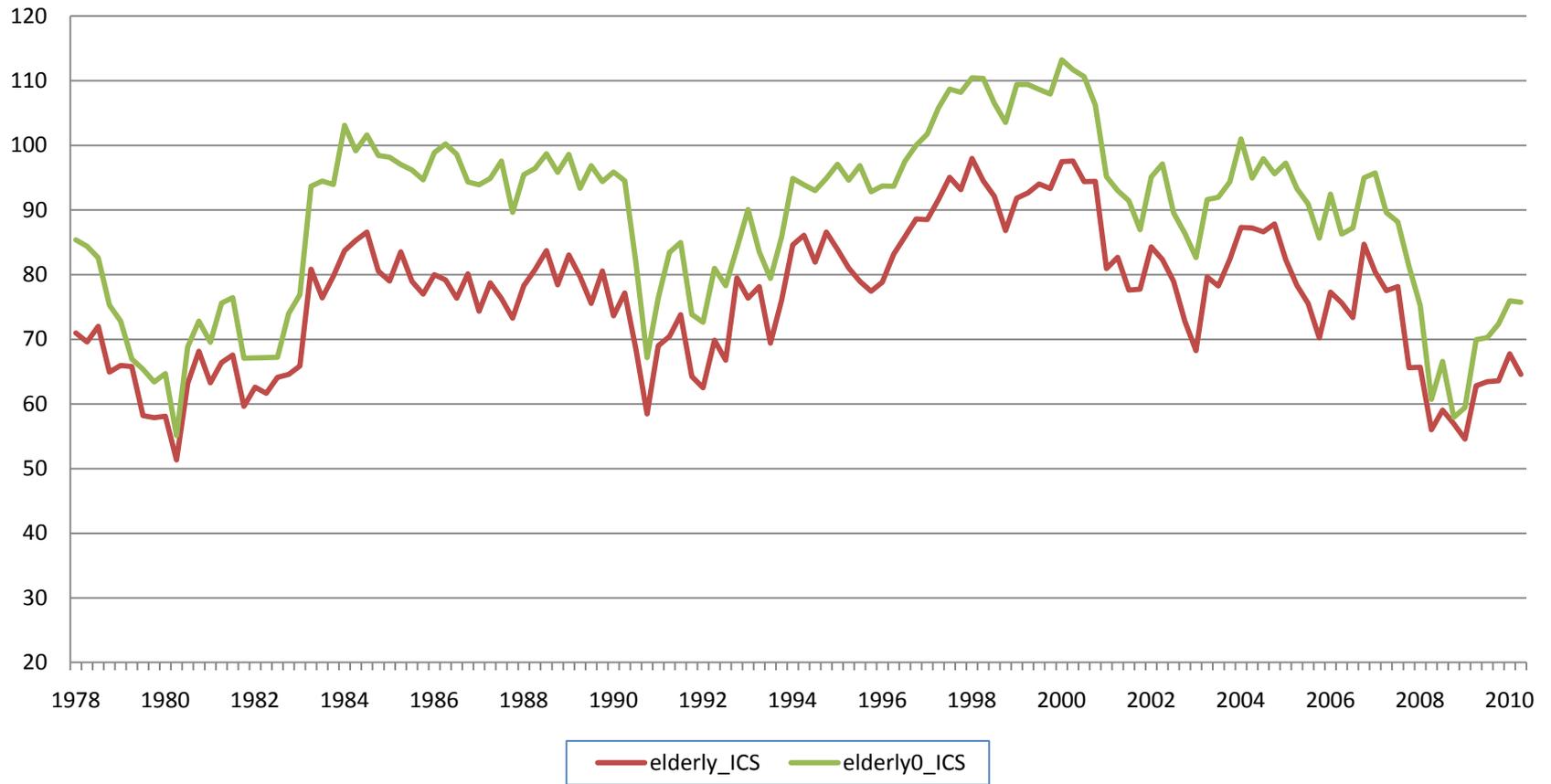


## Income Quartile



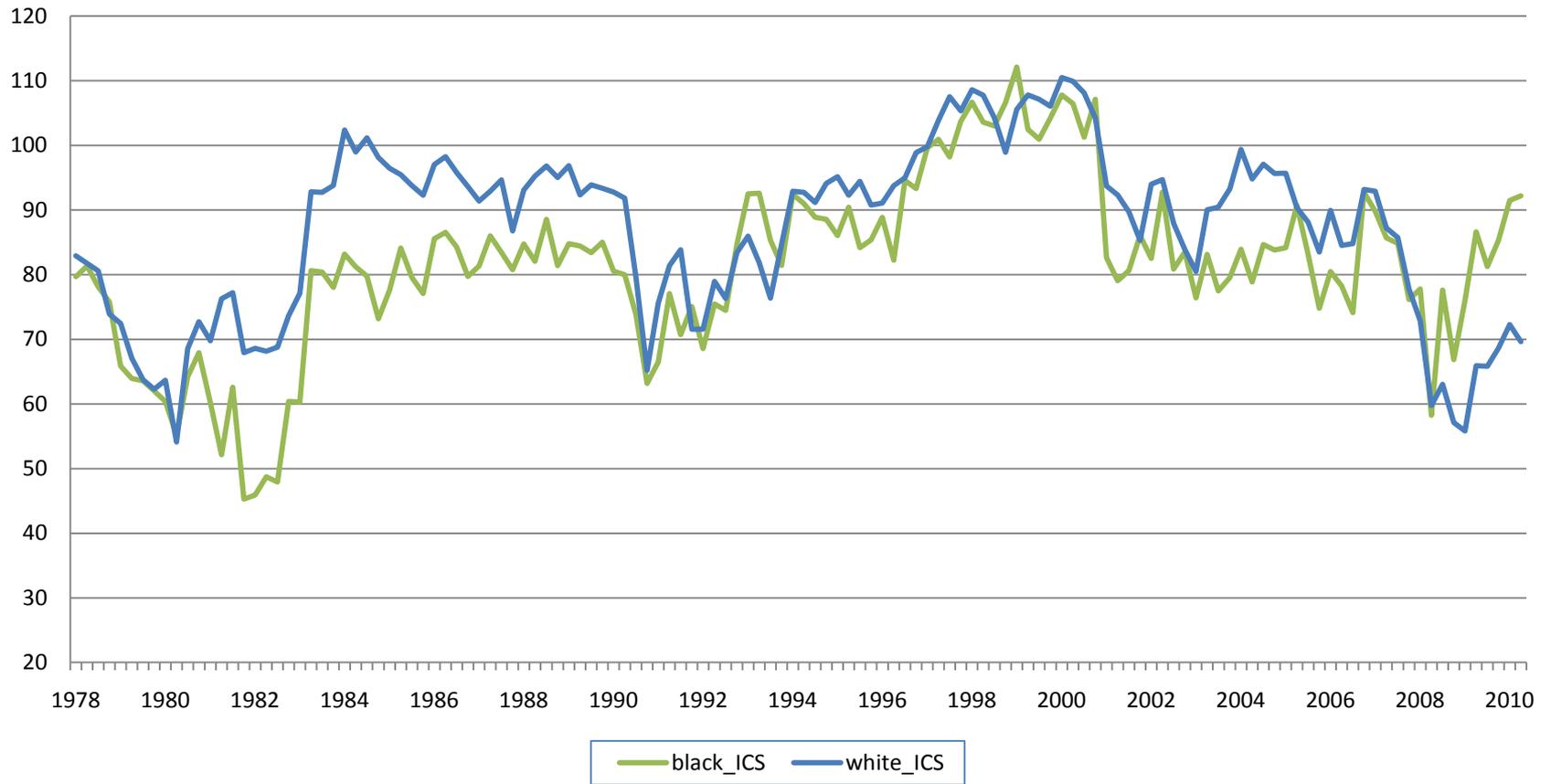
# Index of Consumer Sentiment by Demographic group

ICS (Elderly & Non-Elderly)



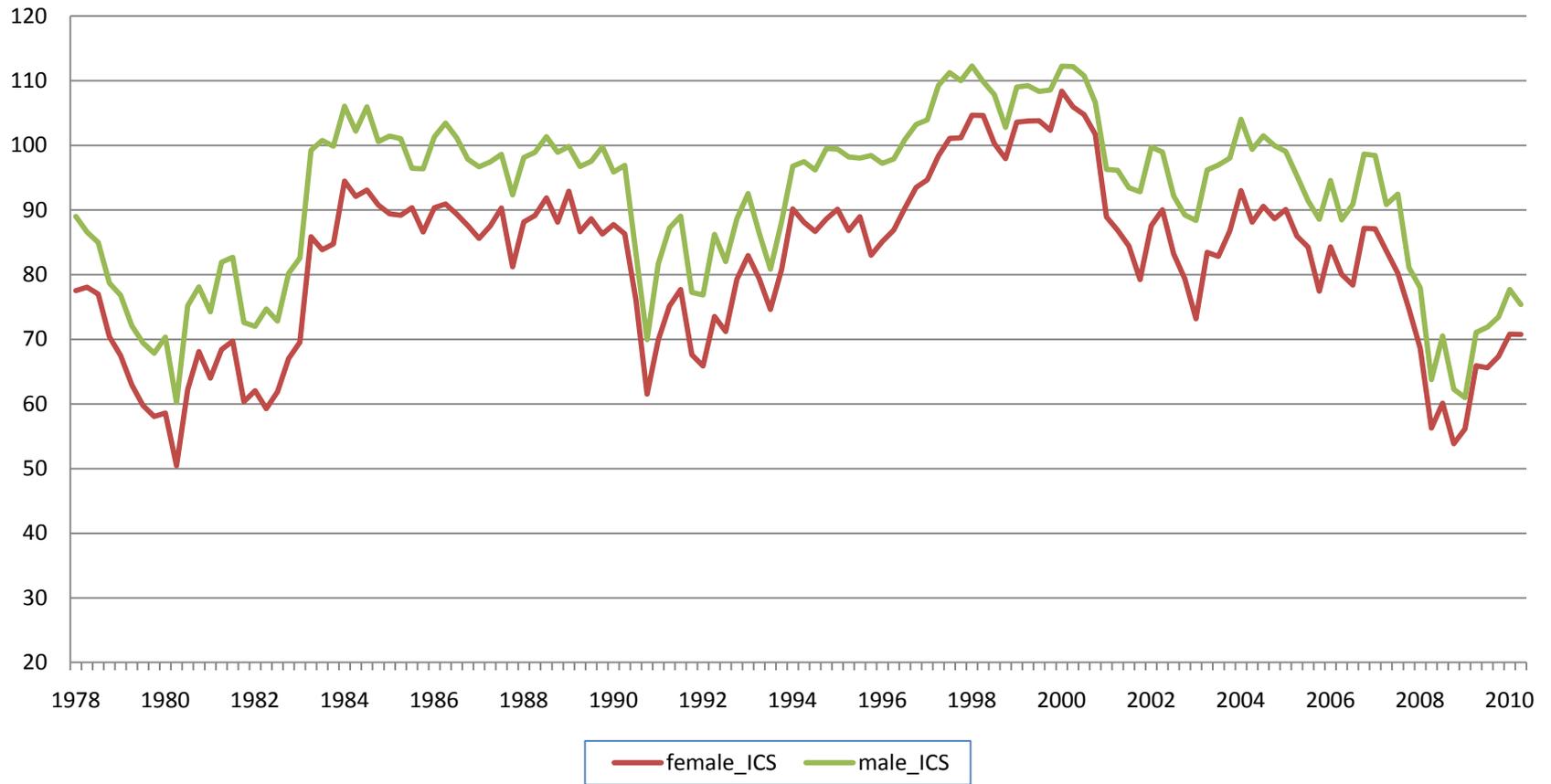
# Index of Consumer Sentiment by Demographic group

Race: Black and White



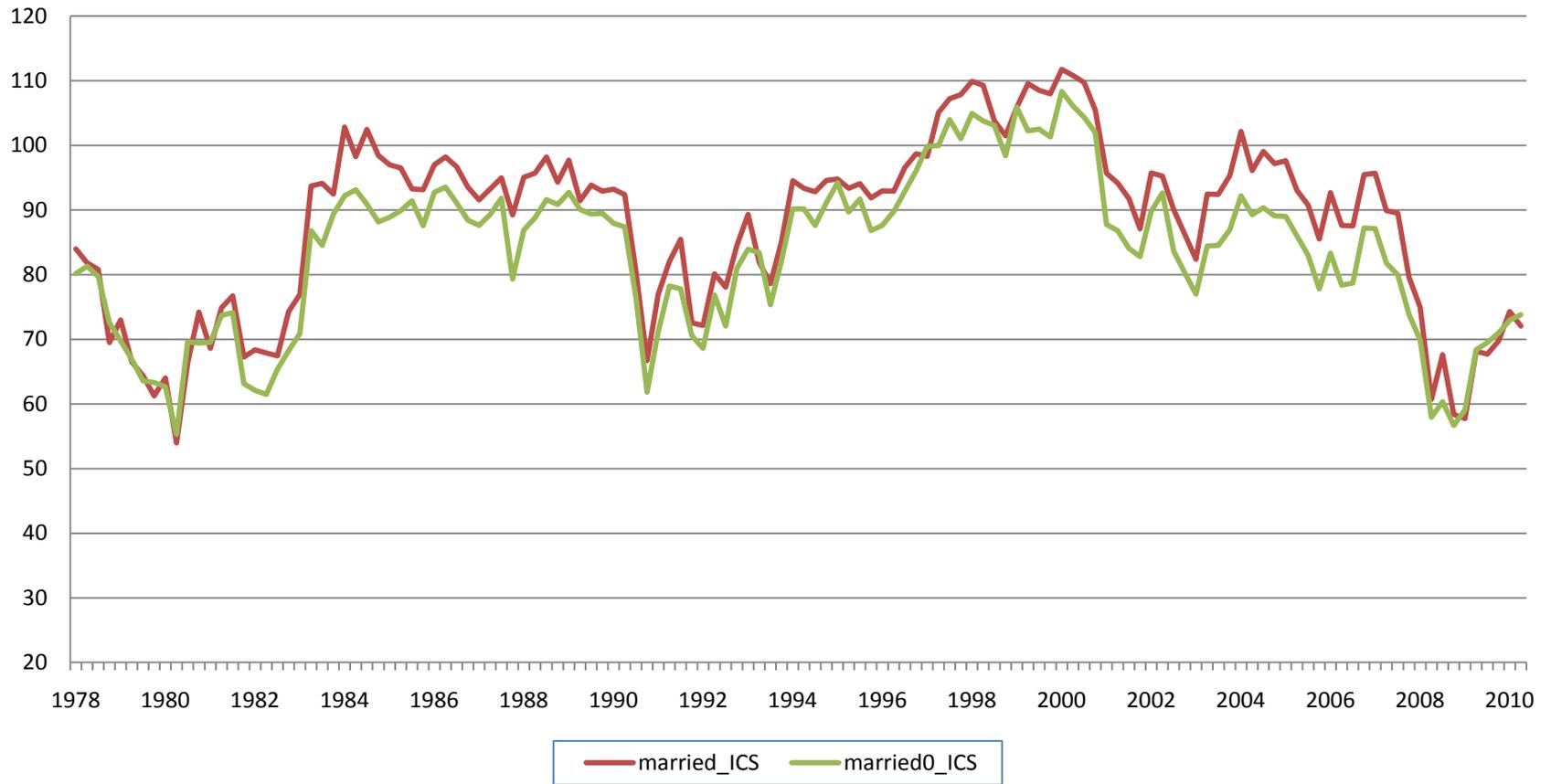
# Index of Consumer Sentiment by Demographic group

Male and Female



# Index of Consumer Sentiment by Demographic group

Married vs. Not Married



# Differences in Consumer Sentiment by group

## ....Some Explanations

- Component questions of Consumer sentiment index
  - Differences in “Objective” views (i.e., questions relating to the overall economy.)
  - Differences in “Subjective” views (i.e., questions relating to one’s personal financial situation.)
- News exposure

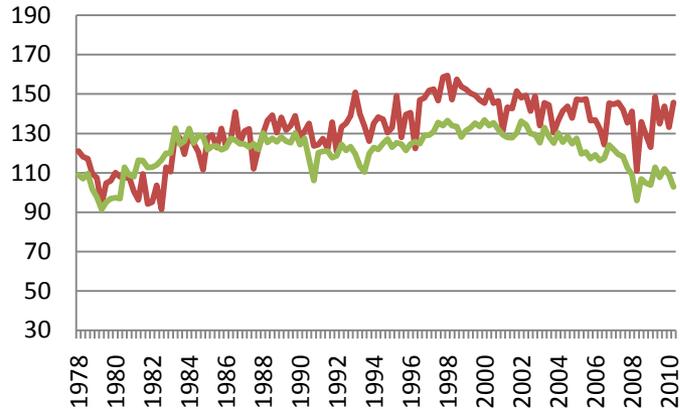
## 5 Component questions make up the Index of Consumer Sentiment:

- 1) We are interested in how people are getting along financially these days. Would you say that you (and your family living there) are better off or worse off financially than you were a year ago? (PAGO) /subjective
- 2) Now looking ahead—do you think that a year from now you (and your family living there) will be better off financially, or worse off, or just about the same as now? (PEXP)/subjective
- 3) Now turning to business conditions in the country as a whole—do you think that during the next twelve months we'll have good times financially, or bad times, or what? (BUS12)/objective
- 4) Looking ahead, which would you say is more likely—that in the country as a whole we'll have continuous good times during the next five years or so, or that we will have periods of widespread unemployment or depression, or what? (BUS5)/ objective
- 5) About the big things people buy for their homes—such as furniture a refrigerator, stove, television, and things like that. Generally speaking, do you think now is a good or bad time for people to buy major household items? (DUR)/objective

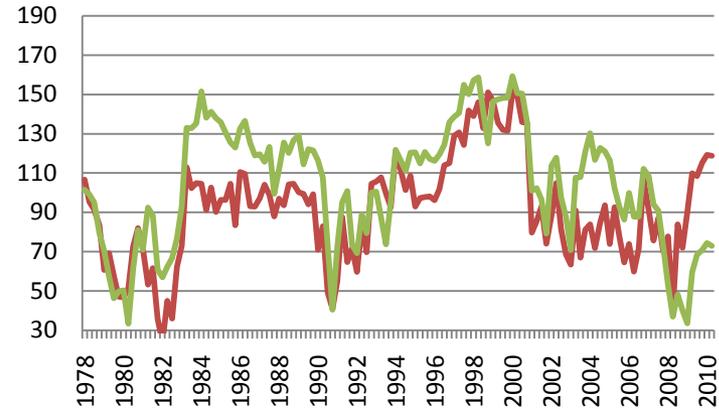
# Differences in Consumer Sentiment

## Objective vs. Subjective views: Black (-) vs. White (-)

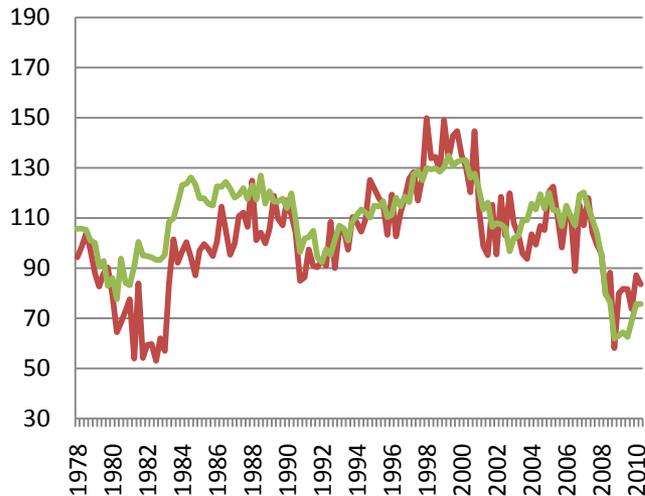
Will you be better off a year from now? (PEXP)



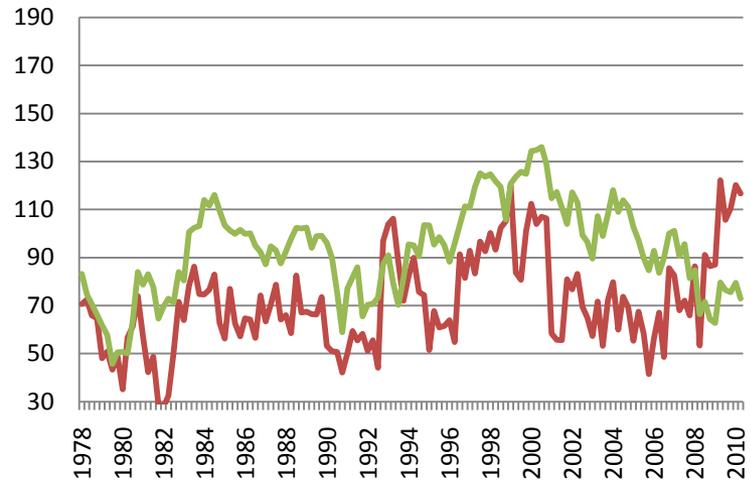
Will the country as a whole fare well in the next 12 month? (BUS12)



Are you better off than you were a year ago? (PAGO)



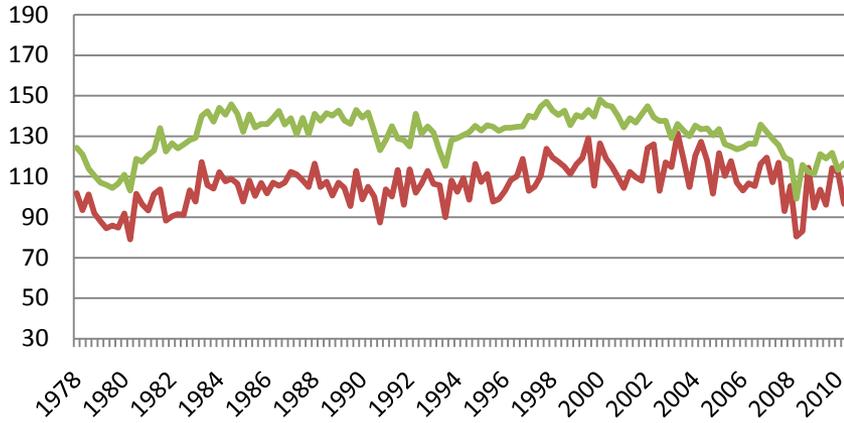
Will the country as a whole do well in the next 5 years? (BUS5)



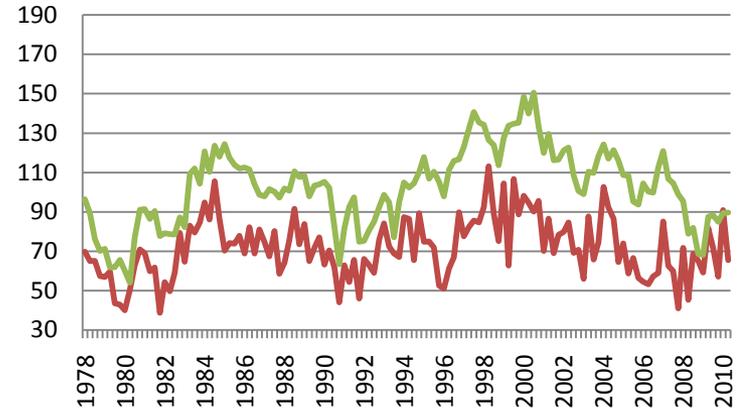
# Differences in Consumer Sentiment

Objective vs. Subjective views: College degree (-) vs. less than high school (-)

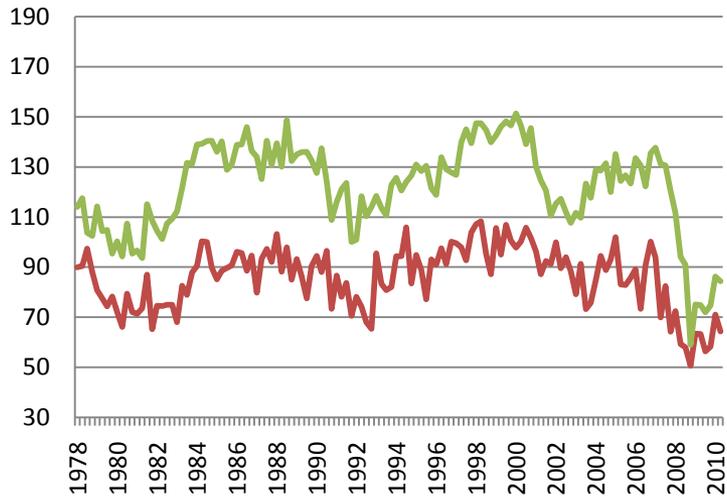
PEXP



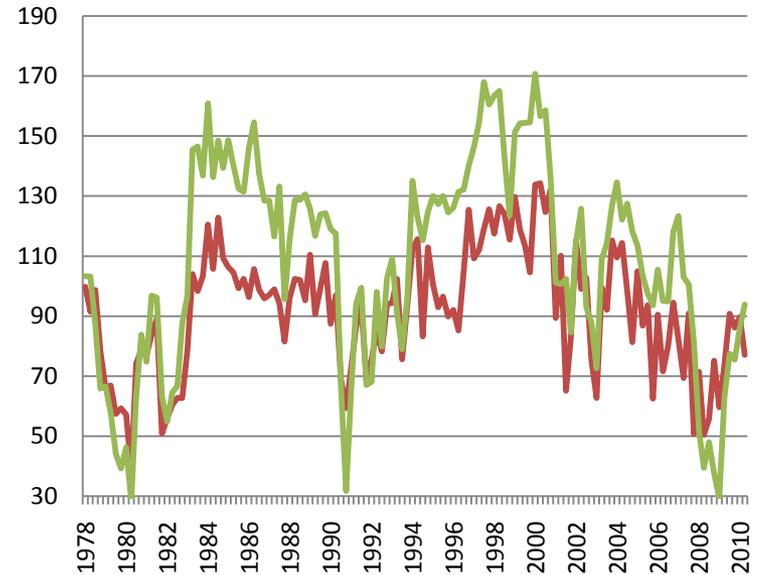
BUS5



PAGO

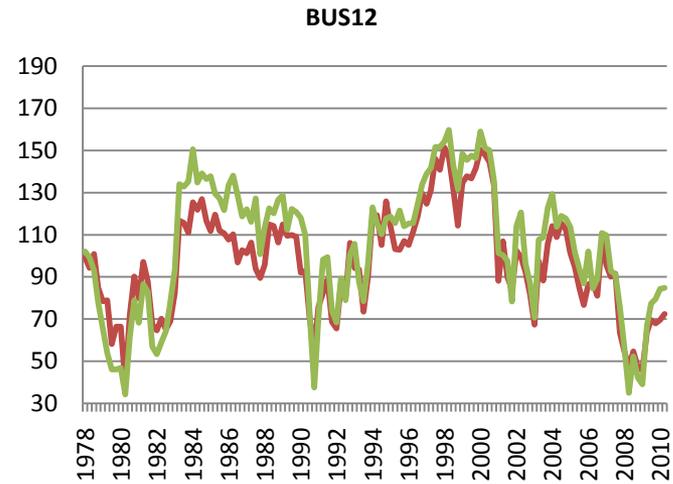
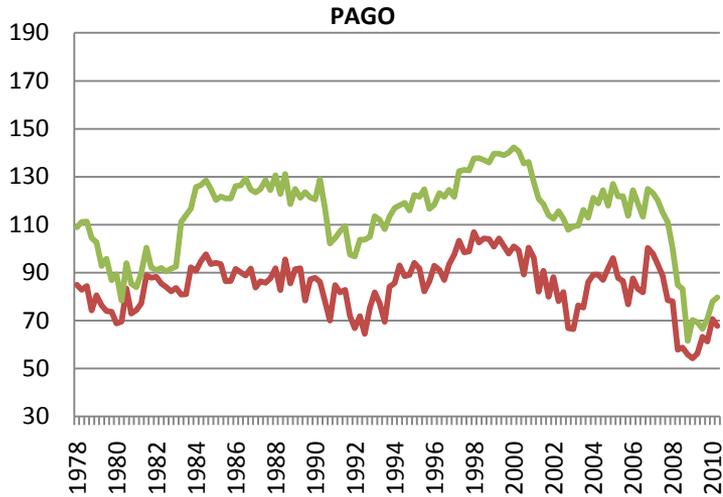
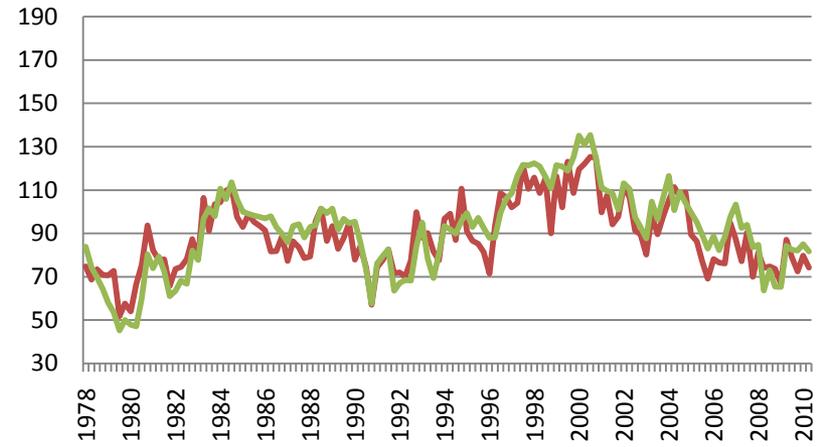
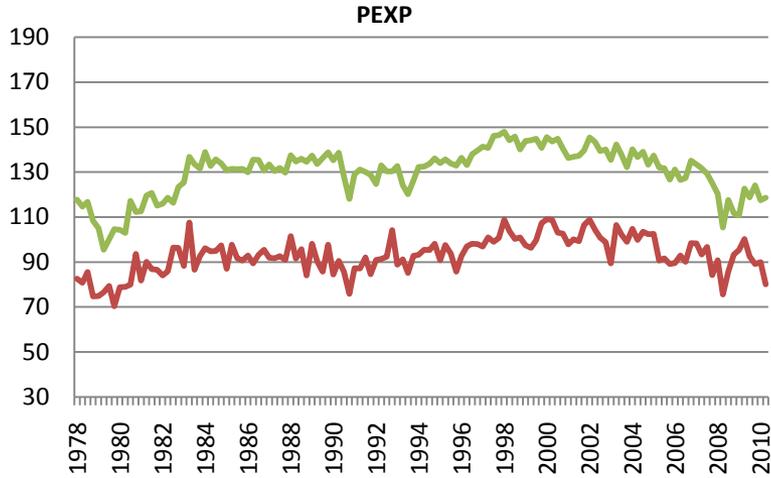


BUS12



# Differences in Consumer Sentiment

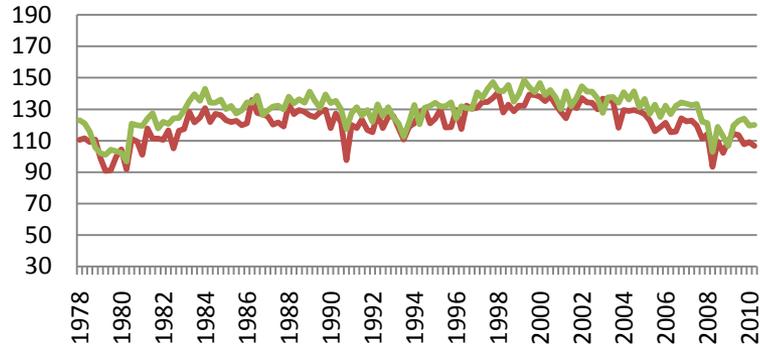
Objective vs. Subjective views: non-elderly/retirees (-) vs. elderly (-)



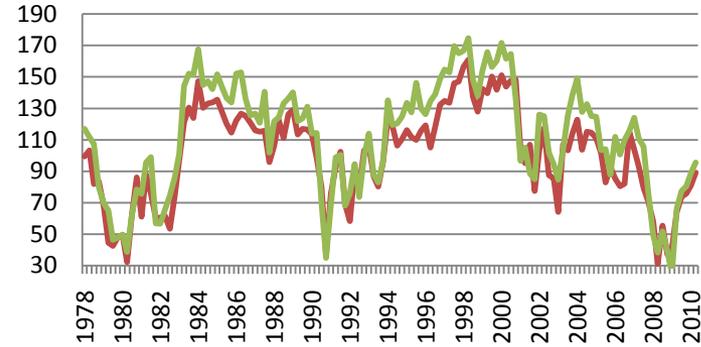
# Differences in Consumer Sentiment

Objective vs. Subjective views: 4<sup>th</sup> highest quartile (-) 2<sup>nd</sup> quartile(-)

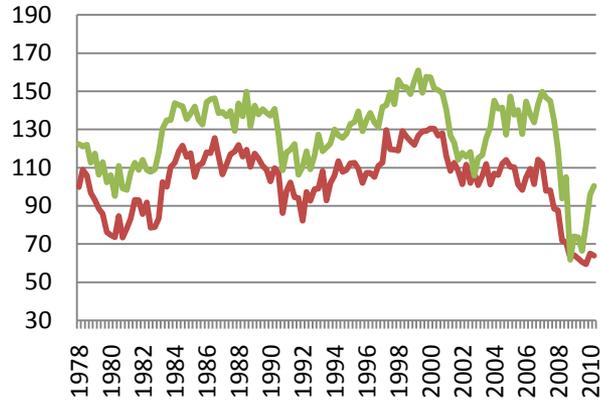
PEXP



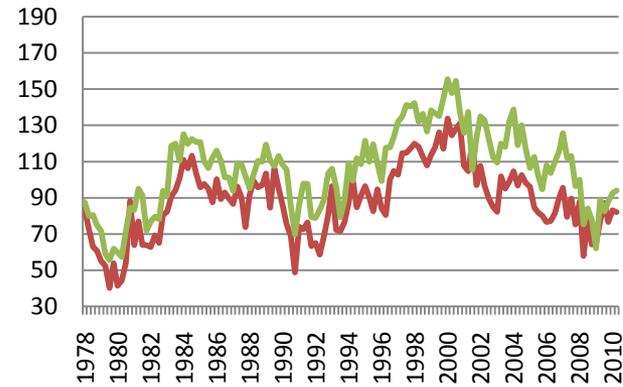
BUS12



PAGO



BUS5



# Differences in Consumer Sentiment Exposure to news/information...

<i>Group</i>	<i>Heard News</i>	<i>Heard news within own industry</i>	<i>Heard only news w/in own industry</i>
Overall	57.63%	21.17%	10.11%
Elderly	47.80%	20.62%	10.04%
Non-Elderly	59.55%	21.30%	10.13%
Poor	40.77%	18.13%	9.47%
Non-Poor	59.78%	21.51%	10.18%
Inc. Quartile4	68.00%	20.67%	8.62%
Inc. Quartile1	43.58%	19.26%	11.22%
<High School	38.46%	20.23%	10.81%
College Grad.	72.19%	19.22%	7.80%
White	59.23%	21.83%	10.35%
Black	47.55%	15.98%	7.80%
Hispanic	49.63%	18.25%	10.20%

# What we have learned a summary...

What explains differences in Consumer sentiment?

- Demographic characteristics of individuals matter independently.
- Macroeconomic effects are as expected, but don't greatly diminish demographic effects.

# What we have learned a summary...

What explains differences in Consumer sentiment?

- Being poor has a larger effect on ICC than ICE.
- Being poorly educated has similar effect on ICE and ICC.
- Blacks have more negative ICC than ICE.

# What we have learned a summary...

Both subjective and objective measures are lower for vulnerable groups, with the exception that Blacks are more optimistic about their future than Whites, in the later year of the survey (somewhat unfounded), despite the fact that they report that they are actually worse off.

# **What we have learn a summary...**

The elderly are extremely pessimistic about future.

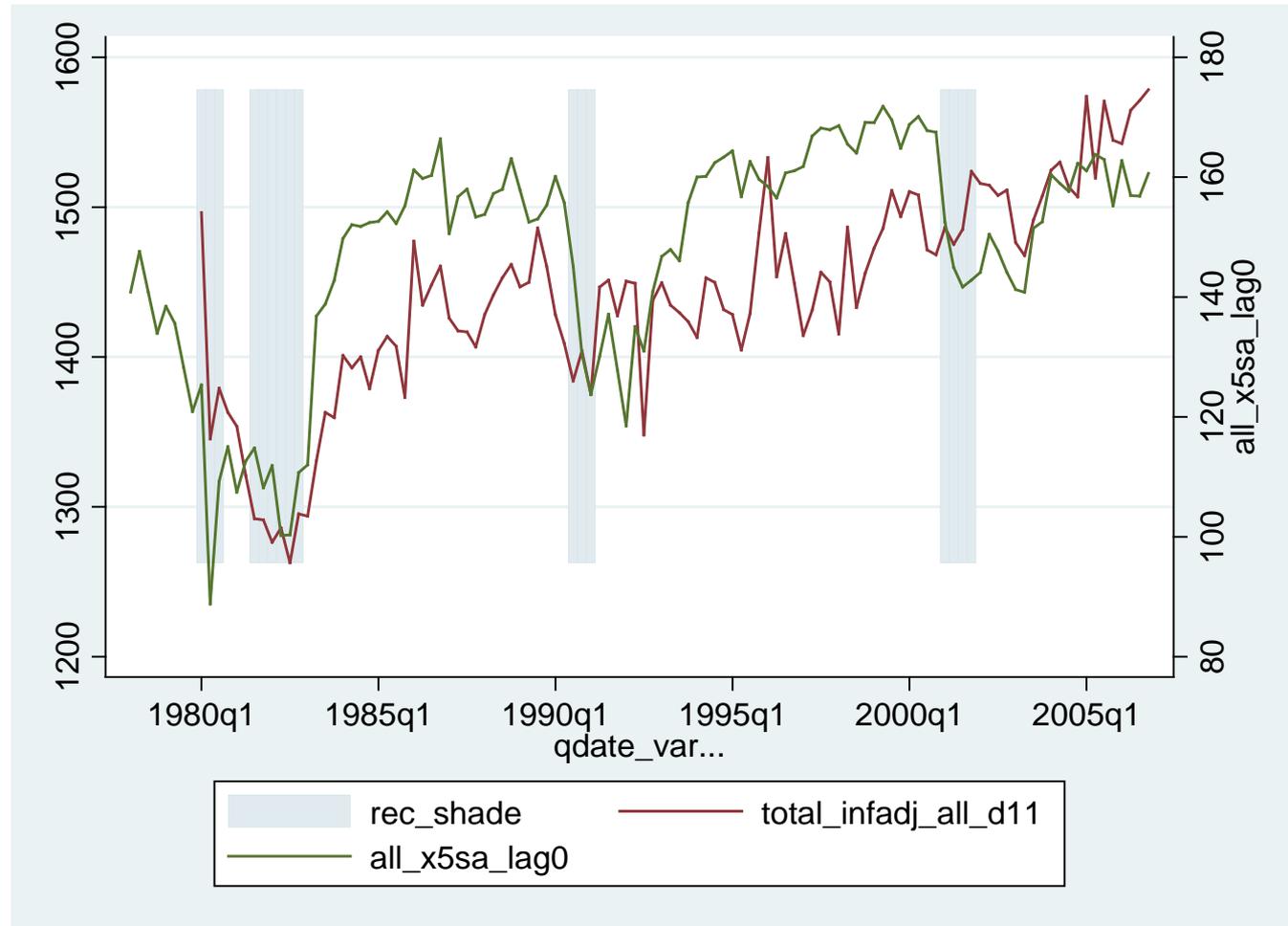
Females are universally more pessimistic than males.

# What we have learned a summary...

- What determines expectation of objective indicators (BUS12)?
- If you heard good news about the economy, you are twice as likely to be positive than those who heard no news.
- If you heard no news, you rely more on your personal experience.

# What we have learned

## *Consumer sentiment and spending....*



# What have we learned

## *Consumer sentiment and spending*

*Correlation Coefficients (measure the degree of linear Association).....*

	ICS	ICE
all	0.429019	0.535411
black	0.53969	0.681175
white	0.383585	0.424567
college grad	0.295856	0.200544
less than hs	0.464595	0.484815
poor	0.489841	0.435204
non-poor	0.39573	0.477886
elderly	0.410099	0.472748
non-elderly	0.441351	0.552657

# What have we learned

## *Consumer sentiment and spending....*

### *Elasticities (measure of responsiveness)*

Spending is more responsive to sentiment for HH in lower income quartile

Consumption for household below half the income quartile distribution is particularly affected by recessions sentiment for HH in lower income quartile

Variable	All Consumers	Consumers in 25th-50th Income Quartile	Consumers in 75th or higher Income Quartile
Consumer Sentiment (DUR)	0.3878	0.2519	0.1902
Recession Dummy	-0.0669	-1.083	0.5994
Inflation	-4.887	-4.489	-4.705
Percent change S&P	0.2267	-0.8409	0.4340
Percent change real disposable income	0.6839	2.415	0.2489

Growth in Consumption depends heavily on growth in disposable income