

# Inflation Expectations of Japanese Households

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# Economic Outcomes Depend On Expectations

- Especially Macroeconomic Outcomes
  - Consumption, Investment, Price Setting, Wages
  - Bad Consequences of Deflation All Flow From Expectations
    - People put off purchases because *expect* lower future prices
    - Businesses put off investment because they *expect* low demand
    - etc

# Theories of Expectations Formation

- Keynes: 'Animal Spirits'
- Keynesians: 'Adaptive Expectations'
- 'Rational' Expectations
  - Great marketing!
  - Actual key assumptions:
    - There's 1 true model that everyone understands and agrees on
    - Everyone has the same information set (data)
    - Everyone interprets that information the same way
    - Processing the information is costless
    - This is Common Knowledge (Everybody knows that everybody knows ...)
  - 'Rational Inattention'
    - RE model but with costs of info processing
  - 'Sticky' or 'Epidemological Expectations'
    - People Learn From Others (Who May Be More Informed)
    - Speed Of Learning Is Not Instantaneous

# Why Not *Test* These Theories?

Isn't that the essence of science?

- Expectations Can Be Measured
- They Have Predictive Power
  - For consumption growth
  - For inflation
  - For mortality

Objections:

- Maybe People Will Lie
  - Plenty of Experimental Evidence on This
  - Only If Question Has Strong 'Normative' Content
    - If Answer Would Reflect Poorly Or Well on Respondent
- Strategic Answers
  - Makes No Sense For Household Surveys

# Novel Aspect: Test Using Household Level Data

## Advantages:

- Many More Theories Can Be Tested. Examples:
  - Maybe Past  $\pi_j$  Experience Matters?
  - Maybe *Disagreement* Affects Mean Dynamics?
  - Maybe Disagreement Reflects Degree of Uncertainty?
  - Maybe Some People Regularly Update More Frequently
  - Can Test Whose Expectations Matter, And Why
  - For Macro, Maybe Only the Mean 'Matters'?

## Disadvantages:

- Micro Data Are Messy
- Could Be Substantial Measurement Error
- Proper Treatment Requires Knowledge of Micro Survey Literature

# Paper's Results

## All Of the Theories Are Wrong (For Households)!

- Rational Expectations Strongly Rejected
  - Biggest Problem: Consistent Overestimation of  $\pi$
  - Also, Lots of Useful Info is Unused
- Sticky Expectations Does A Bit Better, But Still Problems
- Households' Views Are 'wobbly'
  - Change For No Apparent Reason
  - Change In 'Wrong' Direction

# Possible Explanation: Measurement Error

Two kinds:

- 'Bracket-induced'
  - Suppose My Expectation is On Bracket Margin
  - I might answer one bracket in period  $t$ , adjacent in period  $t + 1$
  - No 'real' change in my views
- Lack Of Anchored Expectations
  - Suppose Question Is: 'What Color Dress Is the Queen Wearing Today?'
  - Unless You Happen To Have Seen A Picture, You Have No Idea!
  - Survey Taker Forces You to Respond "Red, Green, Blue, or Yellow"
  - Your Answer May Vary For No Good Reason (Last Dress You Saw?)
  - Back To Point "Whose Expectations Matter?"
  - Maybe You Will Look It Up If It's Important
    - Before You Take Out A Mortgage Loan

## Improving Survey Methods

Surveys Should Not Just Ask “What Do You Believe?”

Also Ask:

- “How Confident Are You?”
- “What Is Your Source Of Information?”
- “Is This A Subject That Interests You?”
- Demographics, Education, Incentives, etc.

# The Future

- Likely to See Much More Work On Testing Expectations Theories
- Work Using Both Micro and Macro Data
- Both Literatures Will Have To Become More Sophisticated
  - Sources of Agents' Information
  - Whose Beliefs Matter

- This Paper An Excellent Start
- Particularly Like the Use of Micro Data