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The psychology of inflation

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Introduction

- Money
  - a scale of economic value
  - used across society to monitor and record balances of credit and debt
  - that are transferable to third parties

(the credit definition, see Martin, *2013)*

- The value of money changes over time (and this can be manipulated)
  - This is *inflation* (or deflation)

Price Inflation

- The Money Advice Service (MAS) explains UK inflation with this example:
  - **1970**: £1 = 10 loaves of bread
  - **1980**: £1 = 3 loaves of bread
  - **1990**: £1 = 2 loaves of bread
  - **2010**: £1 = 1 loaf of bread

So, £1 can buy you much less now than it could in 1970 – and in another ten years it will buy even less

Research and discussion questions

- How are the citizen’s perceptions of past inflation formed?
- How are their expectations of future inflation formed?
  - How accurate are they, and is this related to financial and economic knowledge or numeracy?
- What effects do inflation judgments have on economic behaviour and the economy?

Discussion:

- How can people develop better understanding and accuracy with respect to inflation, and therefore make better economic decisions?

Official measures of past price inflation

- Consumer Price Index (CPI)
  - Tracks the price of a basket of goods and services month by month
  - The CPI is the change in the total price of the basket from same month the previous year

    (as a percent of last year's price)

  - In 2015: Brazil 10 percent

    UK minus 1 percent

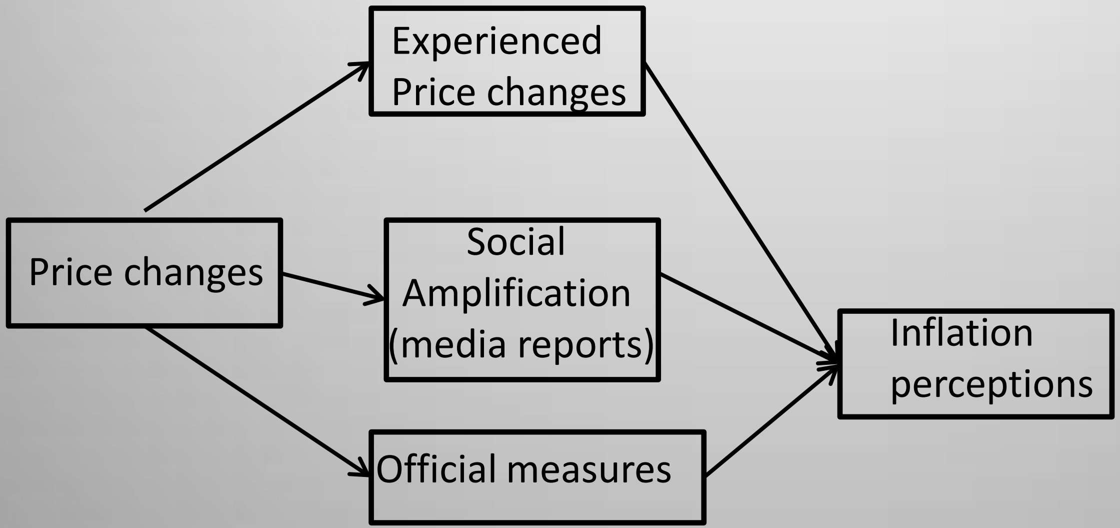
(approximate figures, Bank of Brazil, Bank of England)

Perceived inflation: how is it measured?

- Survey questions, for example
  - *In the past 12 months, do you think that prices in general have gone up, or gone down ...... By about what percent do you think they have gone [up/down] on the average?*

- Responses are typically
  - Verbal, a little, a lot (five/seven choices)
  - Or percentage, 5% etc.

Perceived inflation: information sources



How does direct experience influence inflation perceptions?

- A process of memory sampling
  - price changes experienced directly are mentally sampled
    - Sampling depends on how accessible is the memory
  - the sample is integrated to form the inflation judgment

How does direct experience influence inflation perceptions?

- Evidence: if the model is correct
  1. we are more likely to recall price changes of products we buy frequently, and to recall large price increases (which are particularly memorable)
     - Experiments by Huber, (2011) and Jungermann et al. (2007) found this to be the case
  2. Reminding people of products whose prices have increased (or decreased) should influence perceived inflation upwards (or downwards)
     - Experiments by Del Missier, Ranyard & Bonini (2015) found this to be the case

How do media reports influence perceptions?

- Soroka (2006) tracked UK economic indicators, reports of them, and public opinion, 1986-2000
  - media reports of negative changes (large price increases) were reported more than other changes and this had a corresponding effect on perceptions
  - So biases from direct experience are amplified by media reports

- Drager (2011) analysed Swedish survey data
  - concluded that media effects were stronger under high or volatile inflation

Perceived inflation: summary

- A multiple cue model (Del Missier et al., 2015)
  - People use multiple cues when forming a judgment of past inflation
    - including direct experience and media reports of price changes, as well as official statistics

- Greater reliance on direct experience and media reports may explain differences between the citizen's perceived inflation and official statistics (CPI)

The expert's inflation expectations

- Official forecasts are usually based on central bank computer models of the economy
  - Key variables:
    - Past inflation (CPI)
    - Central bank interest rate
    - Price of oil
    - Unemployment rate (inversely related to inflation)
    - et cetera

- Expected inflation 2016:

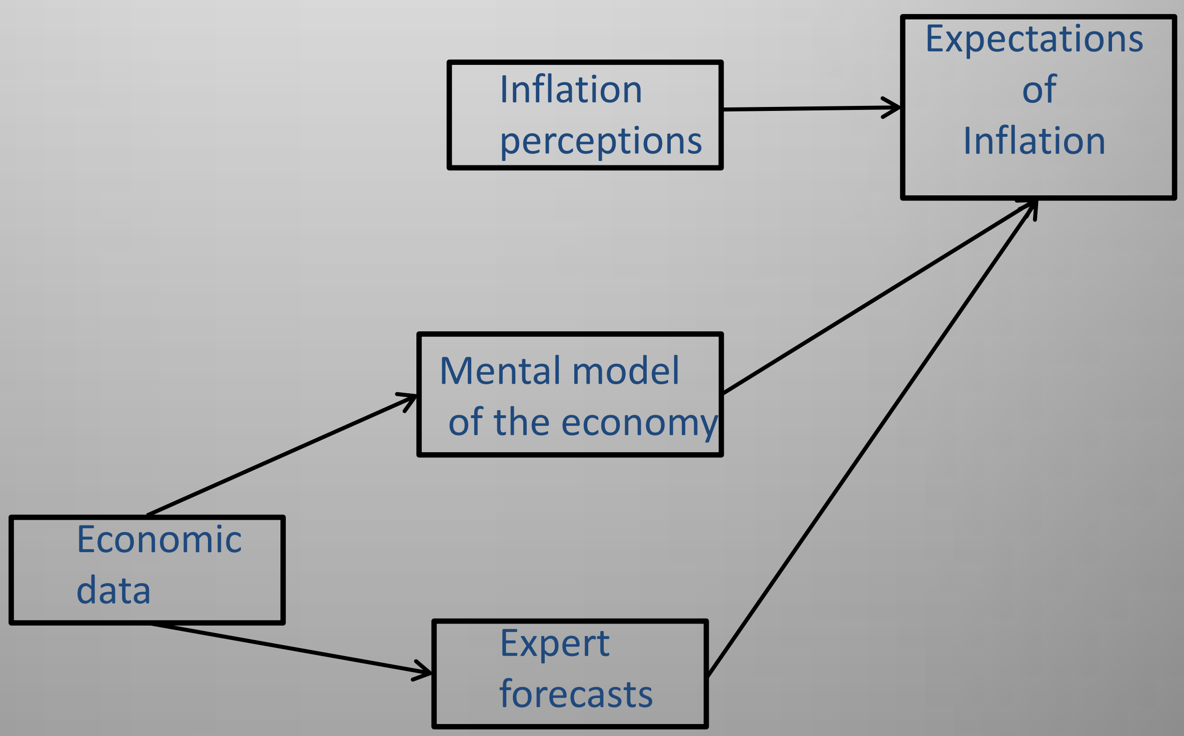
Brazil	6 percent
UK	2 percent

(approximate figures, Bank of Brazil, Bank of England)

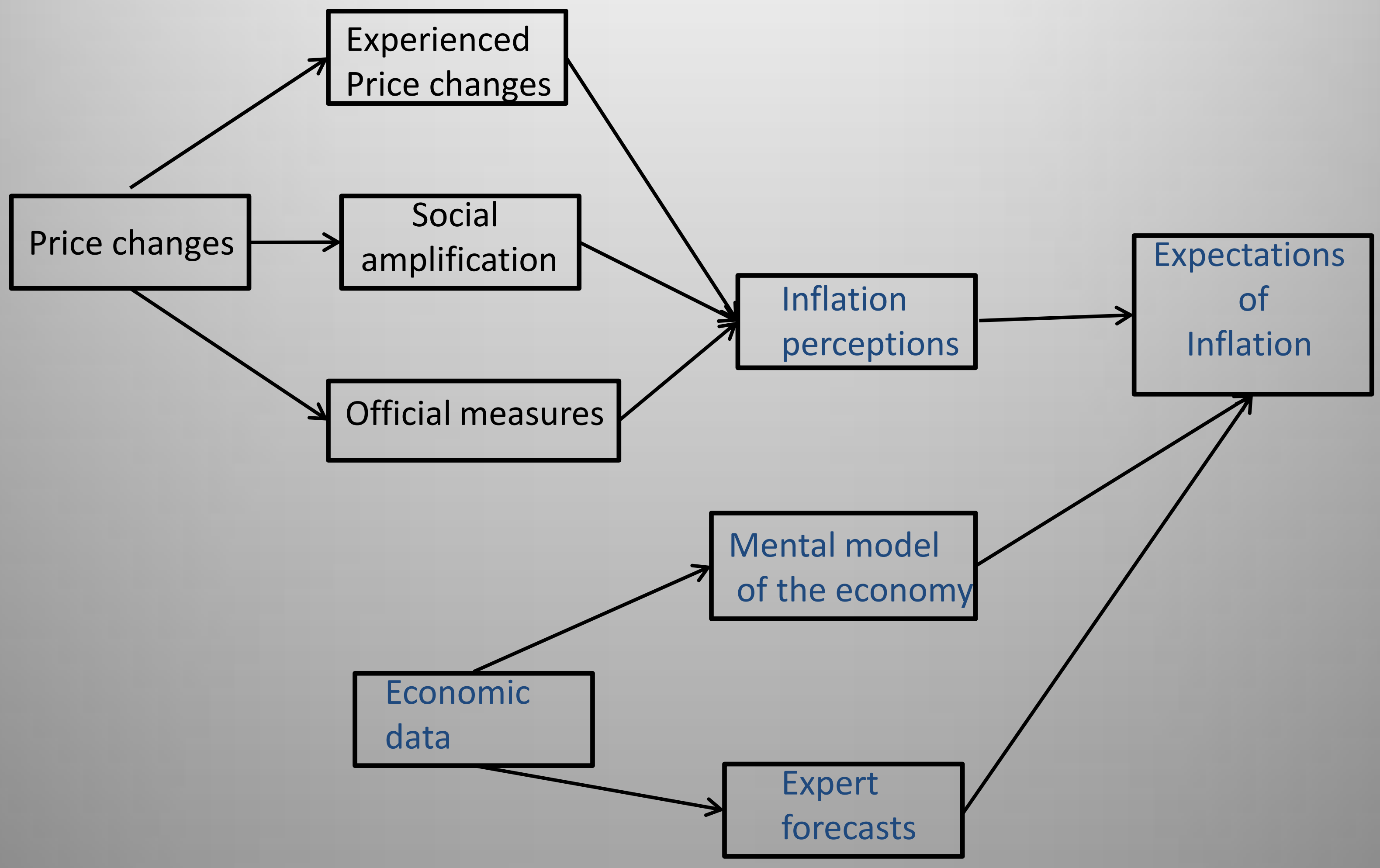
The citizen’s inflation expectations: how are they measured?

- Survey questions, for example
  - *In the next 12 months, do you think that prices in general will go up, or go down ...... By about what percent do you think they will go [up/down] on the average?*
- Responses are typically
  - verbal, a little, a lot (five/seven choices)
  - or percentage, 5% etc.

The public's inflation expectations: information sources: 1



The public's inflation expectations: information sources: 2



The effect of perceived inflation

“Overall, ... studies have shown that past and recent inflation .... and perceived inflation .... are reliable predictors of expected inflation. .... Available evidence suggests that a plausible model of … [expected inflation] can be based on rather a simple …[method], which projects current (or recent) *perceived* inflation into the future.”

Ranyard et al., 2008, pp. 394-5.

The effect of direct experience
Bruine de Bruin et al. (2011)

- Experiment 1, three groups
  - two were instructed to recall any price changes noticed over the past year, or the largest price changes
  - These groups reported more extreme inflation expectations than a third group that recalled the average change in prices

The effect of direct experience
Bruine de Bruin et al. (2011)

- Experiment 2
  - participants reported year-ahead inflation expectations, without first recalling past price changes
  - Retrospective reports showed that half of participants thought of specific prices anyway; these reported more extreme and more biased inflation expectations

Mental models of the economy: use of economic data

- On-line experiment (Burke & Manz, 2015)
  - On accuracy of inflation forecasts in a simulated economy
  - US adult participants varying in age, education etc.

- Results:
  - Relevant cues (CPI) and irrelevant cues (milk prices) were used
  - Participant level of economic understanding predicted the accuracy of expected inflation judgment

The role of expert forecasts

- On-line experiment (Armantier, Nelson et al., 2012)
  - Initial question elicited 12-month price increase forecasts (inflation rate versus ‘prices you normally pay for things’)

  - Expert forecast information influenced inflation rate expectation in the predicted direction (compared to a control group)
  - ‘own basket’ inflation expectation not significantly affected

Inflation expectations: Summary

- The citizen's expectations of inflation
  - Can be influenced by expert forecasts

- They can be biased relative to expert forecasts
  - by direct experience of price changes
  - and biases in perceived inflation

- Differences between public and expert inflation expectations are related to:
  - education
  - understanding of the economy

How should people take account of inflation in financial decision making?

- The economic life-cycle model
  - Modigliani & Brumberg (1954); Friedman (1957)

- Utility (life satisfaction) should be maximized across the life-cycle
  - Therefore, for some financial decisions, perceptions and expectations of inflation need to be accurate
  - and the effects of inflation need to be understood

Inflation judgments, inflation knowledge and economic behaviour

- Aggregate data from eight post-communist European countries (Sorić, 2013)
  - Perceptions of sharp increases in recent inflation were followed by immediate and lasting decreases in consumption
  - Expectations of a one-year ahead sharp increase in inflation were followed by a temporary consumption boost

- Survey of 3000 UK adults (MAS, 2014)
  - when asked to identify whether inflation at 5% would erode the purchasing power of money in an account paying 2% interest, a third of people got this wrong

Conclusions

- Differences between the citizen’s perceived inflation and official statistics may be due to reliance on direct experience and media reports of price changes
- Differences between public and expert inflation expectations are related to education and understanding of the economy
- If a person’s understanding of how to use inflation knowledge is limited then financial decision making may be impaired
- Future research should investigate the effectiveness of education and advice interventions to improve people’s judgment and understanding of inflation

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