Stratification Method in House Price Indices: An example from Iceland

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OOH in the Icelandic CPI

- User cost
  - Annuity payment
- Inputs
  - Life span of the property
    - 80 years
  - Interest rate
    - Long term real interest rates
  - Present value
    - Household budget survey
    - **House Price Index**

Data

- Administrative data
  - Icelandic Property Registry
- Variables used
  - Year and month
  - Area
  - Type
  - Size (categories)
  - Number of contracts
  - Average price per m^2 (geometric mean)
  - Average present value (arithmetic mean)

Stratification

- Price changes calculated for 26 strata
  - Three geographic areas
    - Inner capital area
    - Outer capital area
    - Outside capital area
  - Two types of properties
    - Detached and semi-detached houses
    - Flats
  - Size categories
    - 4 – 5 categories for each area and type of property

Price changes

t	n	p /m²	n*p
1	20	123	2460
2	13	153	1989
3	15	146	2190
4	25	155	3875

t	a= Sum(n)	b = Sum(n*p)	b/a
3	48	6639	138
4	53	8054	152

- Average price per m^2
- 3-month average price (p)
  - Small market
  - Delay in notarisation
- Price change between time periods 3 and 4:

$$\left(\frac{152}{138} - 1\right) * 100 = 10.1\%$$

Lower level weights

- Present value of properties sold in each strata
- Superlative index (Fisher)
  - Two vectors, 36 months each
  - Laspeyres : periods 1 - 36
  - Paasche: periods 12 - 48

Calculation and dissemination

- Fisher index
  - Laspeyres
  - Paasche
  - Geometric average

- Published indices
  - Capital area, multi-flat houses
  - Capital area, single-flat houses
  - Outside capital area, total
  - Whole country, total

Evaluation

Strengths
- Simple
  - Methodology
  - Technology
- Doesn't require very detailed data
- Flexibility

Weaknesses
- Data requirements
  - Price and quantity
- Detailed stratification
  - Can cause problems in small markets or during recessions
- Quality differences