

# Housing price indexes in Central and Eastern Europe.

## A comparative study on the models.

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# Agenda

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1. Motivation
2. Literature review
3. Key issues in developing a housing price index
4. Study of the models
5. Conclusions

# Motivation

Public information has limited details about methodology

“... the price of a **typical** house...”

**What “typical” means?**

“... the price for 3 bedroom apartment increased in 2014, shows... **X** index”

**Why 3 bedroom apartments?**

## Research questions:

- What are the models used for housing price indexes in Central and Eastern Europe countries?
- What are the characteristics in order to have a comparison between the models?

## Hypothesis:

- The majority of the public housing price index are based on median/average sales price – which doesn't fully provide the full spread of the housing market;
- There are significant differences between hedonic models' characteristics that are used in building the models;

# Key issues in developing a housing price index

## Created by

- Governmental institutions
- Academic / research
- Private companies



## Source of data

- Listings
- Surveys
- Transactions
  - Public data
  - Private data



## Data covering

- Narrow
- General



## Recurrence

- One time transaction/ listing
- Multiple sales



## Methodology

- Median /average price
- Econometric: hedonic, repeated sales



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# Literature review - Housing price indexes methodologies

## Silverstein

2014

Federal Reserve Bank of Philadelphia Special Research Report

Analyzing each methods with focus on the repeated sales method

## Nicholas & Scherbina

2013

Real Estate Economics

Analyzing main methods: median/average price, repeated sales and hedonic methods and building a hedonic index for Manhattan market evolution between 1920 and 1939

## Barthélémy, Des Rosiers & Baroni

2013

2013 ERES Conference, Vienna

Applying quantile regression on Paris apartments, with market premiums or price discounts on different characteristics

# Literature review - Housing price indexes methodologies

**Coulson**

2012

International Encyclopedia of Housing and Home

Presentation of methodologies in hedonic prices and repeated sales

**Graddy, Hamilton & Pownal-Campbell**

2011

Real Estate Economics

Repeat sale methodology

**Prasad & Richards**

2006

Reserve Bank of Australia Research Discussion Paper

Using median sales price with stratification

**Chau, Wong, Yiu, Leung**

2005

Journal of Real Estate Literature

Constructing repeated sales index



# Literature review - Housing price indexes methodologies

## International Monetary Fund

2004

Compilation Guide on Financial Soundness Indicators

General presentation of the methods

## Fisher, Gatzlaff, Geltner & Haurin

2003

Real Estate Economics

The effect of constant liquidity and application in developing transaction based indices

## Case, Schiller

1987

National Bureau of Economic Research, Working Papers

The fundamental approach to weighted repeated sale method.

## Statistics Austria

- Austrian Federal Ministry of Finance from its property acquisition tax database
- Entire country
- Started: 2010
- Monthly
- Segmentation and weighted index on transactions

## Austrian National Bank (OeNB)

- two different breakdowns – one by regions (Vienna and Austria excluding Vienna) one by types of property (condominiums and single-family houses)
- Entire country
- Monthly
- Hedonic price index

## Austrian Economic Chambers - Immobilienpreisspiegel

- a survey among real estate trustees and estate agents.
- Entire country
- Monthly
- Presenting listing prices

## RE/MAX ImmoSpiegel

- data from the land registry, or the platform [www.immobilien.net](http://www.immobilien.net)
- Entire country
- Bi-annual
- immoDex – median list price

## Czech Statistical Office

- Data from the real estate agencies
- Entire country
- Quarterly
- Weighted arithmetical average

## Hypoteční banka

- Quarterly
- Base: 2008
- Entire country
- Monthly
- Average market price - realistic estimates of market prices

## Hungarian Central Statistical Office

- Data from National Tax and Customs Administration of Hungary (NAV)
- Entire country
- Quarterly since 2007
- Weighted average of the price indices of second hand homes and new homes

## FHB Mortgage Bank

- Quarterly
- Base: 2000
- Since 1998
- Entire country
- Data from FHB and APEH database
- Hedonic methods

## National Statistical Institute

- Data since 1993 through a survey which covers real estate agencies where real transaction price of a dwelling sold by a household is registered
- Quarterly
- Hedonic method

## BULGARIAN PROPERTIES' Indexes

- Monthly since 2006
- Uses own listing database
- Asking price indexes for 4 important cities
- Base: 2000
- Average asking price per sq.m.

## Statistical Office of the Slovak Republic

- Data since 1993 through a survey which covers real estate agencies where real transaction price of a dwelling sold by a household is registered
- Quarterly
- Average market prices

## Central Statistical Office of Poland

- Data: final market price collected through an administrative data source
- Quarterly
- Entire country since 2006
- chain-linked Laspeyres-type price Hedonic method



## Statistical Office Republic of Slovenia

- Data: real estate agents, notaries and the Tax Administration of the Republic of Slovenia through statistical survey
- Entire country since 2010
- Hedonic method

## National Institute of Statistics & National Bank of Romania & National Union of Notary in Romania

- Surveying Notary Chambers on actual transactions
- Entire country
- Started: 2009
- Base year: 2009
- Main objective: quarterly evolution
- Hedonic price method

## Ziarul Financiar & Coldwell Banker

- Listing from Anuntul Telefonic newspaper
- 3 bedroom apartments in Bucharest on area
- Monthly
- Average listing price excluding ground level and top level, for apartments built between 1980 to 1990

## Eurobank Property services

- Own database
- Entire country
- Base year: 2005
- Quarterly
- Hedonic price method based on different characteristics

## Imobiliare.ro

- Listings
- Bucharest and major cities
- Since: 2008
- Weekly/Monthly
- Average selling price per sqm

## Department of Financial Analysis and Valuation, The Bucharest University of Economic Studies

- Multiple listing service database – actual transactions (Flexmls)
- Bucharest ARM Index – general view & area
- Started: 2015
- Base year: 2013
- Main objective: price/sqm and price/unit
- Quarterly – analyzing from Q1 2013
- Median sale price – weighted on type of dwelling and area
- Using stratification

# Comparison

- 18 indexes from which 8 official that follow the Eurostat Owner Occupied Housing project
- Use of databases:
  - governmental tax databases
  - surveys
  - listings
- Recurrence is monthly or quarterly
- Models used:
  - hedonic (but relative low information on the methodology)
  - average price on selected type of apartments

# Conclusions

- Each country focus on the house price indices at the local level without a view on regional comparison
- The adoption of house price indices is relatively new (starting from end of 2000s')
- The regional characteristics should be taken into consideration
- More details information about methodologies used are needed for proper assessment of the indices

# Thank you!

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