

The role of new analytical methods for real estate market analysis: How to teach them?

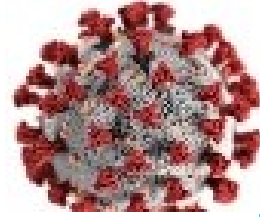

Paloma Taltavull de La Paz
University of Alicante

17th ERES Education Seminar
on-line, Delft, December 2021

Agenda

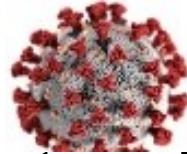
- Introduction. The covid change
- A case: housing economics course
- Teaching methods
- Knowledge requirements

Introduction




- Last two years, main attention went to the ways to teach, due to ..

 - And students/teachers isolation

- Forgot crucial issues, as new complementary or basic knowledge
 - Tools from artificial intelligence?

Introduction

- 1st worry:



- Changes in teaching methods:

- from face-to-face  on-line
- From on-line  to hybrid
- From hybrid  to face-to-face

- Increase the amount of e-resources for teaching exponentially

- No full free access!!. Pity.



Introduction

- 2nd worry (started before covid):
 - Dramatical changes in the methodologies and topics (very fast introduction)
 - Machine learning tools \longrightarrow every field
 - New 'hot topics' \longrightarrow Energy, decarbonization, financial market evolution, sustainability in buildings....
 - Require changes between/across subjects
 - Contents
 - Methods
 - Quite specialised, and highly needed in the RE companies.



Introduction

- 2nd worry (started before covid):
 - Specialised non-RE knowledge requirements:
Computing artificial intelligence methods
 - Their role in real estate?
 - Scrap data
 - Analysis: conventional methods, programs (R, Stata, Eviews,...)
 - What happens with the theory?, markets knowledge.
 - New trends: sustainable energy buildings, decarbonization and huge investment cycle, lack of affordability
- How to do it in a framework of:
 - Limited time to be devoted to RE subject
 - Different origins of Students (specialization and background)
 - Different skills... all in the same group

A case study. Housing economics

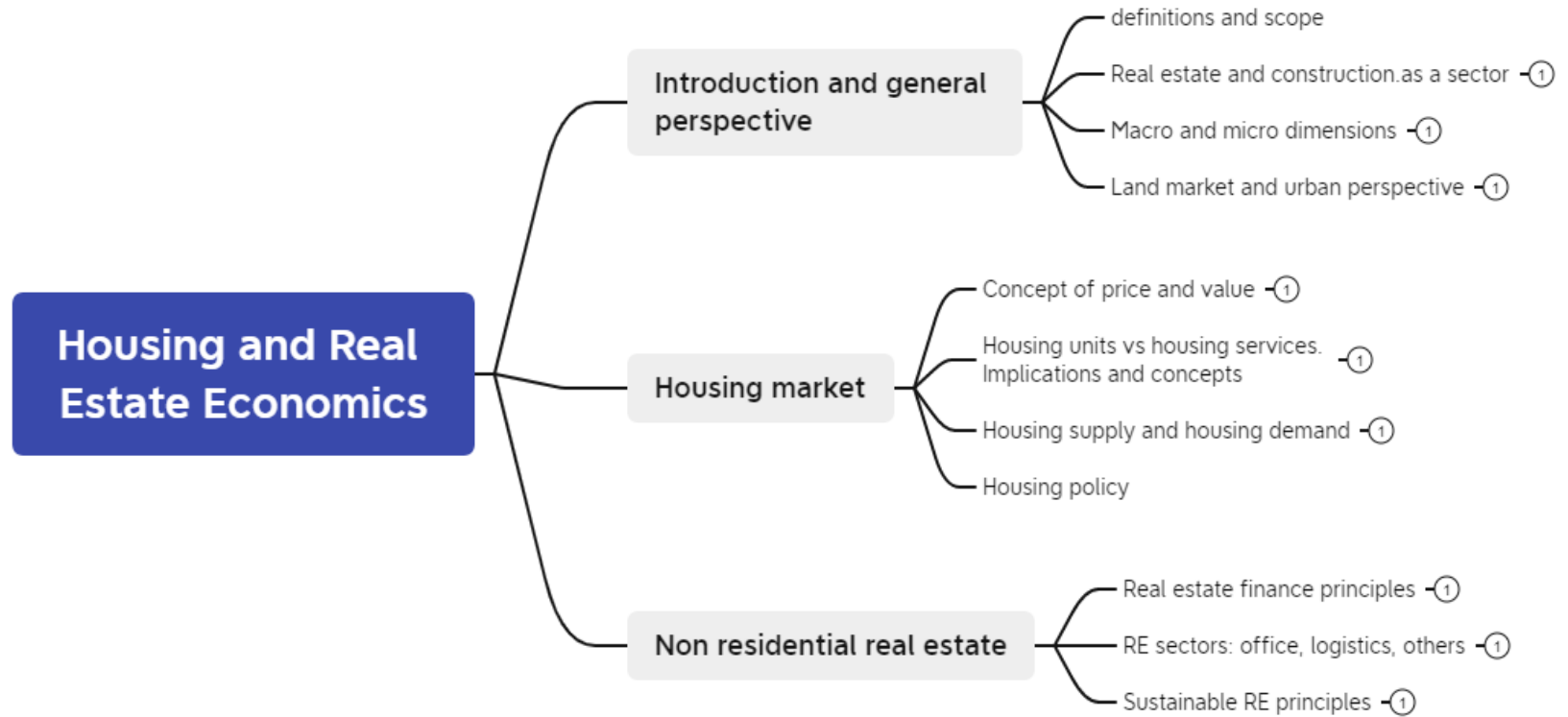
- Master course in applied economics (5 credits)
 - One subject, not other real estate content
 - 2nd semester
- Two compulsory subjects of analytical techniques (10 credits in total, 1st and 2nd sem)
- 50% for theory and 50% of applied learning
- Students comes from:

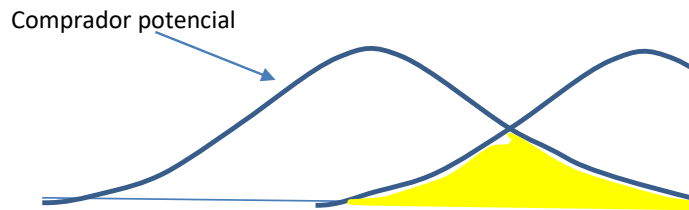


ERES – economics, business, sociology, engineering, law, philosophy..

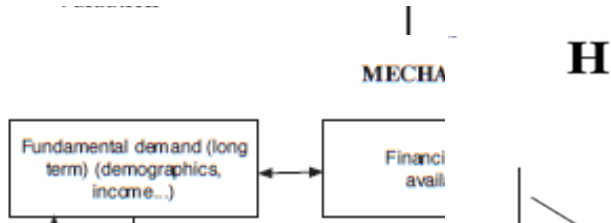


Housing economics. Structure

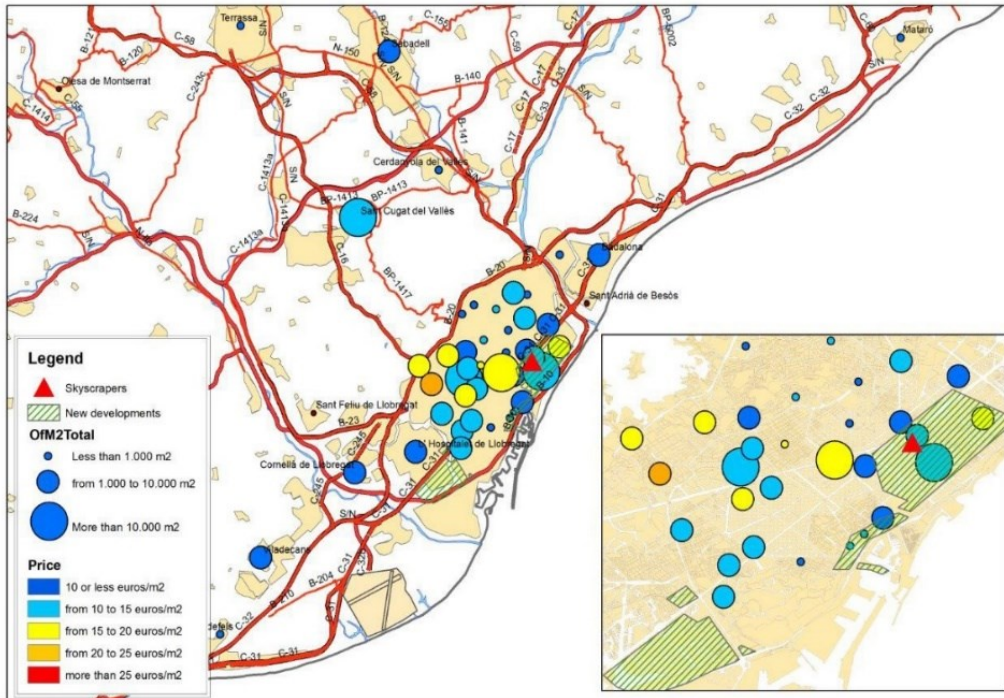




Bajo precio de reserva

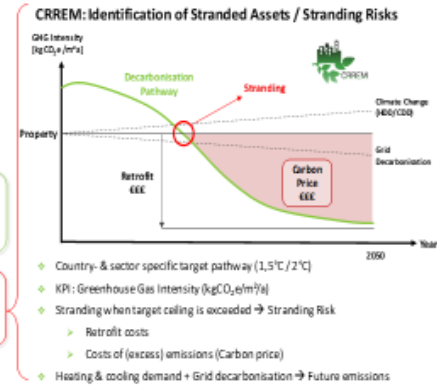
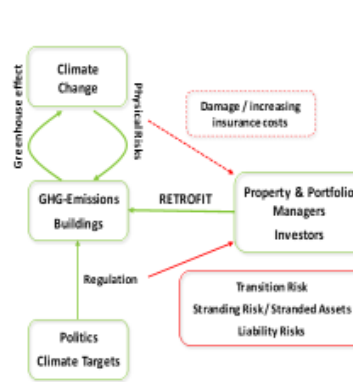


Offices.Barcelona Metropolitan Area, January 2011



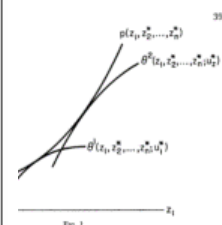
Riesgo de obsolescencia energética (stranding risk)

El concepto de stranded assets.



74

le consumo

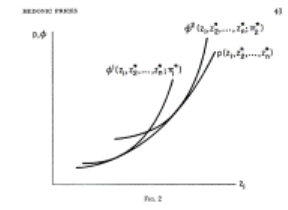


$$p(z_1, z_2, \dots, z_n; \alpha),$$

$$y = m\theta, z_1, \dots, z_n, m$$

$$U_m / U_x = \theta.$$

Decisión de producción



$$p_i(z) = C_{pi}(M_i, z_1, \dots, z_n) / M_i, \quad i = 1, \dots, n$$

$$p(z) = C_M(M, z_1, \dots, z_n)$$

$$C_M(M, z_1, \dots, z_n) = \phi,$$

$$\phi(z_1, z_2, \dots, z_n; \pi, \beta)$$

strucción

- Decremento de la demanda
- Aumento de las vacantes
- Aumento de la finalización de obras
- Reducción en la nueva construcción

Tiempo

la ra

Housing economics tool requirements

- Then:
 - Time series and cross-section analysis (prediction analysis)
 - Spatial analysis
 - New methods
 - Aggregate and very granular data (hedonic, distances, economic models, rental and property, financial analysis....)
 - Data?

Housing economics tool requirements

- New techniques?.
 - Data... scrapping websites and searching for 'hidden' data.
 - Institutions are improving the free available datasets
 - Artificial Intelligence methods to analyse like machine learning (random forests, ...), Maths development
 - Sufficient output for real estate knowledge?. NO,
 - New developments.... XAI .

Housing economics tool requirements



Housing economics tool requirements



- Do you think that we can help them learn all in 5 credits?,
 - or in 10 credits?
- Are we going through a new design of RE courses or degrees?
- Remote teaching? materials?
 - Should theory components evolve?
- Experiences

Thanks for your attention

Waiting for your experiences and proposals!!