



REAL ESTATE ECONOMICS AND FINANCE (EC203)

Course duration: 54 hours lecture and class time (Over three weeks)

Summer School Programme Area: Economics

LSE Teaching Department: Department of Geography and Environment

Lead Faculty: Dr Felipe Carozzi (f.carozzi@lse.ac.uk) and Dr Linday Relihan (l.relihan@lse.ac.uk) (Dept. of Geography & Environment)

Pre-requisites: Introductory microeconomics and introductory statistics.

Introduction:

This course is an introduction to the theoretical and practical functioning of urban real estate markets using concepts from urban economics, finance and real estate economics.

Course Overview:

In the first half of the course, we will cover the productive and consumption advantages of urban areas and location patterns within cities. We will see how these help determine demand for residential and commercial real estate, as well as looking at differences in supply for different types of properties. We will also discuss the impact of policy, with a special focus on taxation and urban planning.

Equipped with this framework, the second half of the course will explore how demand and supply for space determine real estate asset prices and how to measure them. We will then discuss how those measures can be used to value commercial real estate, as well as other techniques for valuation, focusing on cash-flow analysis. From there, we will explore how those valuations, financial leverage, and portfolio considerations are used to make real estate investment decisions. Finally, we will investigate the drivers of real estate cycles and emerging market trends to study their implications for investment outcomes.

This course will be particularly relevant for students interested in employment in real estate related fields in the public or private sector; or for students who are considering further education in this field.

Assessment:

Formative assessment will be carried out via a mid-term exam during class time between Block 1 and 2. **Note: Student marks on the formative assessment will be the only opportunity for students to assess their performance before the summative assessments at the end of the course.**

Summative assessment will be carried out via a case study and a final exam, which will contribute 25% and 75% to the final grade, respectively. The case study will focus on the valuation of a mixed-use commercial property, incorporating urban theory into the risk and return calculations for a cash-flow based valuation. Work on the case study will take place during class time in Block 2 and be due at the end of the final class. For the final exam, students will have to answer a subset of the available questions based on material from both Block 1 and Block 2.

The final exam will take place on Friday of week 3, the precise time and location of the exam will be circulated at the end of week 2.

Topics:

Block 1

1. Course introduction. Real Estate values over space and time
 - a. Course introduction and overview
 - b. Real Estate wealth and location
 - c. Cross-sectional patterns in real estate prices
 - d. Longitudinal patterns in real estate prices
 - e. Actors in real estate markets (households, firms, governments)
 - f. Cities.
2. Why do cities exist? Agglomeration economies and urban consumption
 - a. Urbanization history
 - b. Trade, Factory and Knowledge cities
 - c. Agglomeration economies
 - d. Consumption cities
3. City Systems, city size and prices
 - a. Agglomeration and congestion forces
 - b. The net utility framework
 - c. Spatial equilibrium and optimal city size
 - d. Economic shocks and prices
 - e. Urban growth
4. Monocentric City Model and spatial equilibrium
 - a. Motivating facts
 - b. The standard urban model
 - c. Evidence
 - d. Using the MCM: comparative statics
 - e. Amenities in the MCM
 - f. Polycentric cities
5. Real estate supply, demand and equilibrium
 - a. Housing Demand and Tenure Choice
 - b. Construction costs, land costs
 - c. Supply elasticities and prices
 - d. The stock-flow model
6. Public policy and real estate
 - a. Externalities and urban planning
 - b. Rent controls and housing subsidies
 - c. Infrastructure and transport
 - d. Taxes

Block 2

1. Real estate price measurement
 - a. Median price
 - b. Hedonic regression
 - c. Repeat sales
 - d. Residential v. commercial real estate sectors
 - e. Discounted cash-flow
2. Real estate investment trusts
 - a. Characteristics of REITs
 - b. Valuation
 - c. Performance
3. Risk and Financial leverage
 - a. Risk assessment
 - b. Leverage and returns
 - c. Leverage and risk
 - d. Borrowing decisions
4. Mortgages
 - a. Basic formula
 - b. Types of mortgages
 - c. Securitization
 - d. International comparison of mortgage markets
5. Dynamics of the last housing boom and bust
 - a. Subprime borrowers
 - b. Financial liberalization
 - c. Contagion
 - d. Response and recovery
6. Emerging market forces in real estate
 - a. Gentrification
 - b. Online retail
 - c. Climate change

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Textbooks:

Ball, Michael, Colin Lizieri, and Bryan MacGregor. *The economics of commercial property markets*. Routledge, 2012.

Brueggeman, W. B. and J. D. Fisher (2005) *Real Estate Finance & Investments* (13th edition or newer), New York City, NY: McGraw-Hill/Irwin.

O'Sullivan, Arthur. *Urban economics*. McGraw-Hill/Irwin, 2007.

McDonald, J. F. & D. P. McMillen, 2011, [*Urban Economics and Real Estate, Theory and Policy*](#) (2nd Edition), Blackwell

Reading List (Provisional):

Block I

Lecture 1

Core Reading: Jowsey, Ernie. *Real Estate Economics*. New York: Basingstoke; Palgrave Macmillan, 2011. Chapter 3

Lecture 2

Core Reading: O'Sullivan, A. *Urban economics*. McGraw-Hill/Irwin. 2007. Chapter 2.

Brueckner, Jan K. *Lectures on urban economics*. MIT Press, 2011. Chapter 1.

Glaeser, Edward L., Jed Kolko, and Albert Saiz. "Consumer city." *Journal of economic geography* 1.1 (2001): 27-50.

Lecture 3

Core Reading: O'Sullivan, A. *Urban economics*. McGraw-Hill/Irwin. 2007. Chapter 4.

Brueckner, Jan K. *Lectures on urban economics*. MIT Press, 2011. Chapter 11.

McCann, Philip. *Modern urban and regional economics*. Oxford university press, 2013. Chapter 2.

Lecture 4

Core Reading: Brueckner, Jan K. *Lectures on urban economics*. MIT Press, 2011. Chapter 2.

Bertaud, Alain. *The Spatial Distribution of Land Prices and Density: The Models Developed by Economists*. Marron Institute NYU, 2015.

McDonald, John F., and Daniel P. McMillen. *Urban economics and real estate: theory and policy*. John Wiley & Sons, 2011. Chapters 5 & 6.

Lecture 5

Core Reading: Brueckner, Jan K. *Lectures on urban economics*. MIT Press, 2011. Chapter 6.

Jowsey, Ernie. *Real Estate Economics*. New York: Basingstoke; Palgrave Macmillan, 2011. Chapter 4.

DiPasquale, Denise, and William C. Wheaton. *Urban economics and real estate markets*. Vol. 23. No. 7. Englewood Cliffs, NJ: Prentice Hall, 1996. Chapters 1 & 10.

Lecture 6

Core Reading: O'Sullivan, A. *Urban economics*. McGraw-Hill/Irwin. 2007. Chapter 9.

Brueckner, Jan K. *Lectures on urban economics*. MIT Press, 2011. Chapter 7.

Block II

Lecture 1

Compulsory:

Archer, Wayne R., and David C. Ling. "The three dimensions of real estate markets: Linking space, capital, and property markets." *Real Estate Finance* 14.3 (1997): 5-11.

Ball, Michael, Colin Lizieri, and Bryan MacGregor. *The economics of commercial property markets*. Routledge, 2012, Chapter 10.

Case, Karl E., and Robert J. Shiller. "Prices of single family homes since 1970: New indexes for four cities." (1987).

Rosen, Sherwin. "Hedonic prices and implicit markets: product differentiation in pure competition." *Journal of political economy* 82.1 (1974): 34-55.

Optional:

Case, Karl E., and Robert J. Shiller. "The efficiency of the market for single-family homes." (1988).

Nichols, Joseph B., Stephen D. Oliner, and Michael R. Mulhall. "Swings in commercial and residential land prices in the United States." *Journal of Urban Economics* 73.1 (2013): 57-76.

Brueggeman, W. B. and J. D. Fisher (2005) *Real Estate Finance & Investments* (13th edition or newer), New York City, NY: McGraw-Hill/Irwin, Chapters 3, 9, 10.

Lecture 2

Compulsory:

Peter Linneman, "The Equitization of Real Estate", *Wharton Real Estate Review*, Fall 2006

Brueggeman, W. B. and J. D. Fisher (2005) *Real Estate Finance & Investments* (13th edition or newer), New York City, NY: McGraw-Hill/Irwin, Chapter 21.

Optional:

Ambrose, Brent W., Michael J. Highfield, and Peter D. Linneman. "Real estate and economies of scale: the case of REITs." *Real Estate Economics* 33.2 (2005): 323-350.

Gyourko, Joseph, and Edward Nellling. "Systematic risk and diversification in the equity REIT market." *Real Estate Economics* 24.4 (1996): 493-515.

Gyourko, Joseph, and Todd Sinai. "The REIT vehicle: its value today and in the future." *Journal of Real Estate Research* 18.2 (1999): 355-375.

Lecture 3

Compulsory:

Brueggeman, W. B. and J. D. Fisher (2005) *Real Estate Finance & Investments* (13th edition or newer), New York City, NY: McGraw-Hill/Irwin, Chapter 12, 13.



Hoesli, Martin, Elion Jani, and André Bender. "Monte Carlo simulations for real estate valuation." *Journal of Property Investment & Finance* 24.2 (2006): 102-122.

Lecture 4

Compulsory:

Brueggeman, W. B. and J. D. Fisher (2005) *Real Estate Finance & Investments* (13th edition or newer), New York City, NY: McGraw-Hill/Irwin, Chapter 4, 5, 6.

Green, Richard K., and Susan M. Wachter. "The American mortgage in historical and international context." *Journal of Economic Perspectives* 19.4 (2005): 93-114.

Optional:

Piskorski, Tomasz, and Alexei Tchisty. "Stochastic house appreciation and optimal mortgage lending." *The Review of Financial Studies* 24.5 (2011): 1407-1446.

Lecture 5

Compulsory:

Mian, Atif, and Amir Sufi. "House prices, home equity-based borrowing, and the US household leverage crisis." *American Economic Review* 101.5 (2011): 2132-56. 6

Dokko, Jane K., Benjamin J. Keys, and Lindsay E. Relihan. "Affordability, Financial Innovation, and the Start of the Housing Boom." (2015).

Ferreira, Fernando, and Joseph Gyourko. *A new look at the US foreclosure crisis: Panel data evidence of prime and subprime borrowers from 1997 to 2012*. No. w21261. National Bureau of Economic Research, 2015.

Optional:

Campbell, John Y., Stefano Giglio, and Parag Pathak. "Forced sales and house prices." *American Economic Review* 101.5 (2011): 2108-31.

Gerardi, Kristopher, et al. "Making sense of the subprime crisis." *Brookings Papers on Economic Activity* 2008.2 (2008): 69-159.

Keys, Benjamin J., Amit Seru, and Vikrant Vig. "Lender screening and the role of securitization: evidence from prime and subprime mortgage markets." *The Review of Financial Studies* 25.7 (2012): 2071-2108.

Lecture 6

Compulsory:

Baum-Snow, Nathaniel, and Daniel A. Hartley. "Accounting for central neighborhood change, 1980-2010." (2016).



Relihan, Lindsay E., "Is Online Retail Killing Coffee Shops? Estimating the Winners and Losers of Online Retail using Customer Transaction Microdata." (2017).

Giglio, Stefano, et al. *Climate change and long-run discount rates: Evidence from real estate*. No. w21767. National Bureau of Economic Research, 2015.

Optional:

Behrens, Kristian, Brahim Boualam, Julien Martin, and Florian Mayneris, "Gentrification and pioneer businesses." (2018).

Emerging Trends in Real Estate 2019: US and Canada, Urban Land Institute.

Emerging Trends in Real Estate 2019: Europe, Urban Land Institute.



Credit Transfer: If you are hoping to earn credit by taking this course, please ensure that you confirm it is eligible for credit transfer well in advance of the start date. Please discuss this directly with your home institution or Study Abroad Advisor.

As a guide, our LSE Summer School courses are typically eligible for three or four credits within the US system and 7.5 ECTS in Europe. Different institutions and countries can, and will, vary. You will receive a digital transcript and a printed certificate following your successful completion of the course in order to make arrangements for transfer of credit.

If you have any queries, please direct them to summer.school@lse.ac.uk