

- Buildings for Future?! -

WS 2021/2022

Lecturer

Leo Reutter, MSc., MSc.; accompanying: Prof. Dr. Georg von Wangenheim

Class type:

Seminar

Language

English

Prerequisites:

Basic economics

Modules:

NaWi: Ökonomik der Umwelt, Ökonomie von Stadt und Region;

EB&Go: 3B, 6;

WiRe: W1, W3

Content:

Each week we will look at the topic “decarbonizing residential heating” from a different perspective of economics and discuss the respective literature.

- Overview of potentials, costs, challenges regarding the decarbonization of residential heating.
- Overview of institutional barriers that hinder the decarbonization of residential heating.
- Overview of policies to overcome the barriers.
- Insight into research design and methodology of different economic sub-disciplines.

Learning outcomes:

- Literature competence
 - Drasp economic literature
 - Evaluate the quality of research articles
 - Comprehend embeddedness of literature
 - Critically identify connections, similarities, and discrepancies between sub-disciplines
- Writing competence
 - Write concisely
 - Produce text in a regular rhythm
 - Abide by formatting guidelines
 - Reference properly
- Speaking competence
 - Convey complex subjects understandably
 - Design longer presentations in an entertaining and informative way
 - Moderate a discussion

Examination:

- Written portion (50%):
 - Term paper consisting of “discussion papers” and “framework paper”
 - 11 discussion papers (3% each, sum: 33%)
 - 1 page
 - Ca. 600-1,000 words
 - Short summary of the assigned literature
 - Discussion of the assigned literature, e.g.
 - Did the research question and the matter convince you?
 - What were exceptionally strong arguments?
 - Which arguments were weaker?
 - How do the assigned papers interlink?
 - Potentially: do the assigned papers connect to previously discussed literature?
 - Take-home-message
 - 1 Sentence
 - What did I learn from discussing the assigned literature?
 - This may refer to the content, the methodology, to writing research papers...
 - Reference list
 - Framework paper (17 %)
 - Ca. 4 pages of content + cover page + Table of contents + Reference list over the entire assigned literature
 - Ca. 2,400-4,000 words
 - Contextualizing discussion of the entire assigned literature
 - Connecting the content
 - Developing an own thesis on the topic
 - Assessing the most convincing paper (and why)
 - Assessing the least convincing paper (and why)
- Oral portion (50%) (individual or groups of up to three students)
 - Detailed presentation on one of the assigned papers (25%)
 - 45-60 minutes
 - Detailed presentation
 - Scope of the paper
 - Methodology
 - Results
 - Discussion of all of that week’s assigned literature (see above)
 - Moderating the seminar discussion (15%)
 - 30-45 minutes
 - Preparing discussion questions, policy implications, evaluation theses on the papers
 - Regular and qualified contributions to the discussion (10%)

Grading scheme:

| 0-49: 5 | 50-54:4 | 55-59:3,7 | 60-64:3,3 | 65-69:3 | 70-74:2,7 | 75-79:2,3 | 80-84:2 | 85-89:1,7 | 90-94:1,3 | 95-100:1 (| Points of 100 possible points: Grade |)

Assigned literature (will be uploaded to moodle in time):

- **Motivations for energy efficiency investment – owner-occupier**
 - *Friege, Jonas (2016): Increasing homeowners' insulation activity in Germany: An empirically grounded agent-based model analysis. In Energy and Buildings 128, pp. 756–771. DOI: 10.1016/j.enbuild.2016.07.042.*
 - *Galvin, Ray (2014): Why German homeowners are reluctant to retrofit. In Building Research & Information 42 (4), pp. 398–408. DOI: 10.1080/09613218.2014.882738.*
- **Economic costs and benefits of energy efficiency investment – owner-occupier**
 - *Hahn, Jonas; Hirsch, Jens; Bienert, Sven (2018): Does "clean" pay off? Housing markets and their perception of heating technology. In Property Management 36 (5), pp. 575–596. DOI: 10.1108/PM-08-2017-0051.*
 - *Wahlström, Marie H. (2016): Doing good but not that well? A dilemma for energy conserving homeowners. In Energy Economics 60, pp. 197–205. DOI: 10.1016/j.eneco.2016.09.025.*
- **Modernization behavior in condominiums**
 - *Hauge, Åshild Lappegard; Thomsen, Judith; Löfström, Erica (2013): How to get residents/owners in housing cooperatives to agree on sustainable renovation. In Energy Efficiency 6 (2), pp. 315–328. DOI: 10.1007/s12053-012-9175-5.*
 - *Roodenrijs, Judith C. M.; Hegger, Dries L. T.; Mees, Heleen L. P.; Driessen, Peter (2020): Opening up the Black Box of Group Decision-Making on Solar Energy: The Case of Strata Buildings in Amsterdam, the Netherlands. In Sustainability 12 (5), p. 2097. DOI: 10.3390/su12052097.*
- **Landlord-tenant-dilemma Overview / Theory**
 - *Jaffe, Adam B.; Stavins, Robert N. (1994): The energy paradox and the diffusion of conservation technology. In Resource and Energy Economics 16 (2), pp. 91–122. DOI: 10.1016/0928-7655(94)90001-9.*
 - *Bird, Stephen; Hernández, Diana (2012): Policy options for the split incentive: Increasing energy efficiency for low-income renters. In Energy policy 48, pp. 506–514. DOI: 10.1016/j.enpol.2012.05.053.*
- **Landlord-tenant-dilemma landlords' behavior**
 - *Adan, Hassan; Fuerst, Franz (2015): Modelling energy retrofit investments in the UK housing market. In Smart and Sust Built Env 4 (3), pp. 251–267. DOI: 10.1108/SASBE-03-2013-0016.*
 - *Ambrose, Aimee R. (2015): Improving energy efficiency in private rented housing: Why don't landlords act? In Indoor and Built Environment 24 (7), pp. 913–924. DOI: 10.1177/1420326X15598821.*
- **Landlord-tenant-dilemma tenants' behavior**
 - *Banfi, Silvia; Farsi, Mehdi; Filippini, Massimo; Jakob, Martin (2008): Willingness to pay for energy-saving measures in residential buildings. In Energy Economics 30 (2), pp. 503–516. DOI: 10.1016/j.eneco.2006.06.001.*
 - *Collins, Matthew; Curtis, John (2018): Rental tenants' willingness-to-pay for improved energy efficiency and payback periods for landlords. In Energy Efficiency 11 (8), pp. 2033–2056. DOI: 10.1007/s12053-018-9668-y.*
- **Landlord-tenant-dilemma market capitalization of investment**

- Hyland, Marie; Lyons, Ronan C.; Lyons, Seán (2013): *The value of domestic building energy efficiency — evidence from Ireland*. In *Energy Economics* 40, pp. 943–952. DOI: 10.1016/j.eneco.2013.07.020.
- Kholodilin, Konstantin A.; Mense, Andreas; Michelsen, Claus (2017): *The market value of energy efficiency in buildings and the mode of tenure*. In *Urban Studies* 54 (14), pp. 3218–3238. DOI: 10.1177/0042098016669464.
- **Financing energy efficiency investment**
 - Brown, Donal; Sorrell, Steve; Kivimaa, Paula (2019): *Worth the risk? An evaluation of alternative finance mechanisms for residential retrofit*. In *Energy policy* 128, pp. 418–430. DOI: 10.1016/j.enpol.2018.12.033.
 - Töppel, Jannick; Tränkler, Timm (2019): *Modeling energy efficiency insurances and energy performance contracts for a quantitative comparison of risk mitigation potential*. In *Energy Economics*. DOI: 10.1016/j.eneco.2019.01.033.
- **CO₂-taxation**
 - Runst, Petrik; Thonipara, Anita (2020): *Dosis facit effectum why the size of the carbon tax matters: Evidence from the Swedish residential sector*. In *Energy Economics* 91, p. 104898. DOI: 10.1016/j.eneco.2020.104898.
 - Criqui, Patrick; Jaccard, Mark; Sterner, Thomas (2019): *Carbon Taxation: A Tale of Three Countries*. In *Sustainability* 11 (22), p. 6280. DOI: 10.3390/su11226280.
- **Case Study Sweden**
 - Femenías, Paula; Mjörnell, Kristina; Thuvander, Liane (2018): *Rethinking deep renovation: The perspective of rental housing in Sweden*. In *Journal of Cleaner Production* 195, pp. 1457–1467. DOI: 10.1016/j.jclepro.2017.12.282.
 - Vogel, Jonas Anund; Lundqvist, Per; Blomkvist, Pär; Arias, Jaime (2016): *Problem areas related to energy efficiency implementation in Swedish multifamily buildings*. In *Energy Efficiency* 9 (1), pp. 109–127. DOI: 10.1007/s12053-015-9352-4.
- **Socio-economic dimension**
 - Halkos, George E.; Gkampoura, Eleni-Christina (2021): *Evaluating the effect of economic crisis on energy poverty in Europe*. In *Renewable and Sustainable Energy Reviews* 144, p. 110981. DOI: 10.1016/j.rser.2021.110981.
 - März, Steven (2018): *Assessing the fuel poverty vulnerability of urban neighbourhoods using a spatial multi-criteria decision analysis for the German city of Oberhausen*. In *Renewable and Sustainable Energy Reviews* 82, pp. 1701–1711. DOI: 10.1016/j.rser.2017.07.006.

Schedule:

Date	Topic	Speaker
21.10.2021	Class administration and first overview of the topic	Leo Reutter
28.10.2021	General overview	Leo Reutter
04.11.2021	Motivations for energy efficiency investment – owner-occupier	Student(s)
11.11.2021	Economic costs and benefits of energy efficiency investment – owner-occupier	Student(s)
18.11.2021	Modernization behavior in condominiums	Student(s)
25.11.2021	Landlord-tenant-dilemma Overview / Theory	Student(s)
02.12.2021	Landlord-tenant-dilemma landlords' behavior	Student(s)
09.12.2021	Landlord-tenant-dilemma tenants' behavior	Student(s)

16.12.2021	No seminar because Leo Reutter attends a conference	
13.01.2022	Landlord-tenant-dilemma market capitalization of investment	Student(s)
20.01.2022	Financing energy efficiency investment	Student(s)
27.01.2022	CO2-taxation	Student(s)
03.02.2022	Case Study Sweden	Student(s)
10.02.2022	Socio-economic dimension	Student(s)
17.02.2022	Class review and evaluation	Leo Reutter

For further information, see moodle