

Urban Economics

Lecture 8: Low-Income Housing Policy

Spring 2024

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Outline

In this lecture, we discuss housing policy

- What are the effects of rent control?
- How should we subsidize poor/low-income households?
- What are the relative merits of
 - *giving people money,*
 - *giving people money earmarked for housing consumption and*
 - *giving people housing units that are cheaper than free-market units*

The lecture does not follow the textbook

Rent control

Rent control

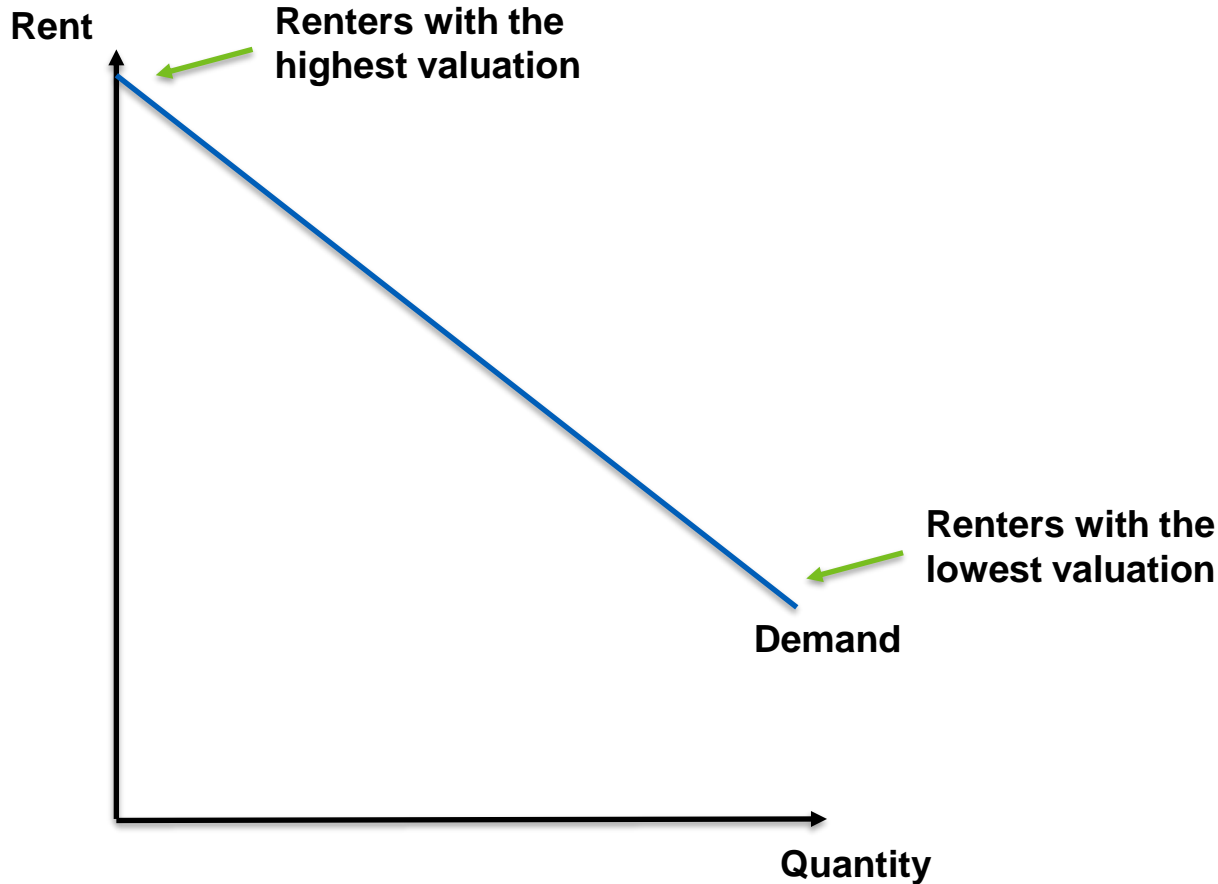
Rent control is government regulation that sets a limit on the amount that a landlord can charge

- These can be strict rent ceilings or limits on rent increases
- They can apply to all rental units or only to existing contracts so that rents in new contracts are unregulated

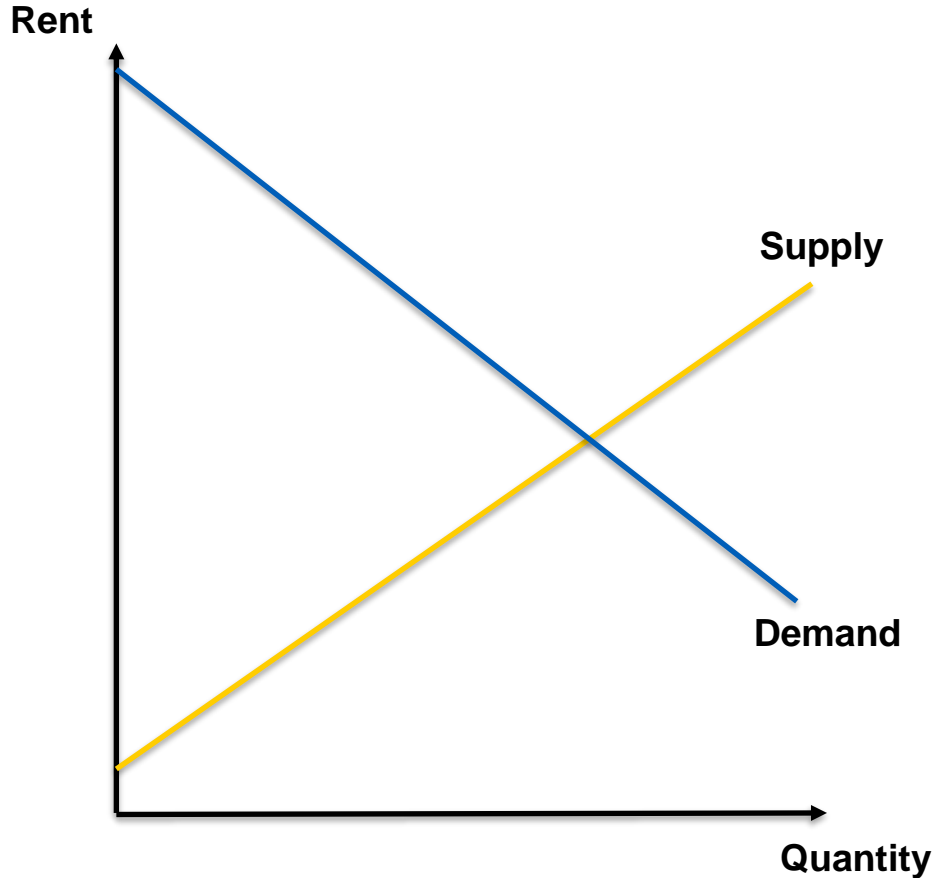
The goal is to provide affordable housing and housing security, but rent control may have adverse effects on

- E.g. housing supply, quality and allocation

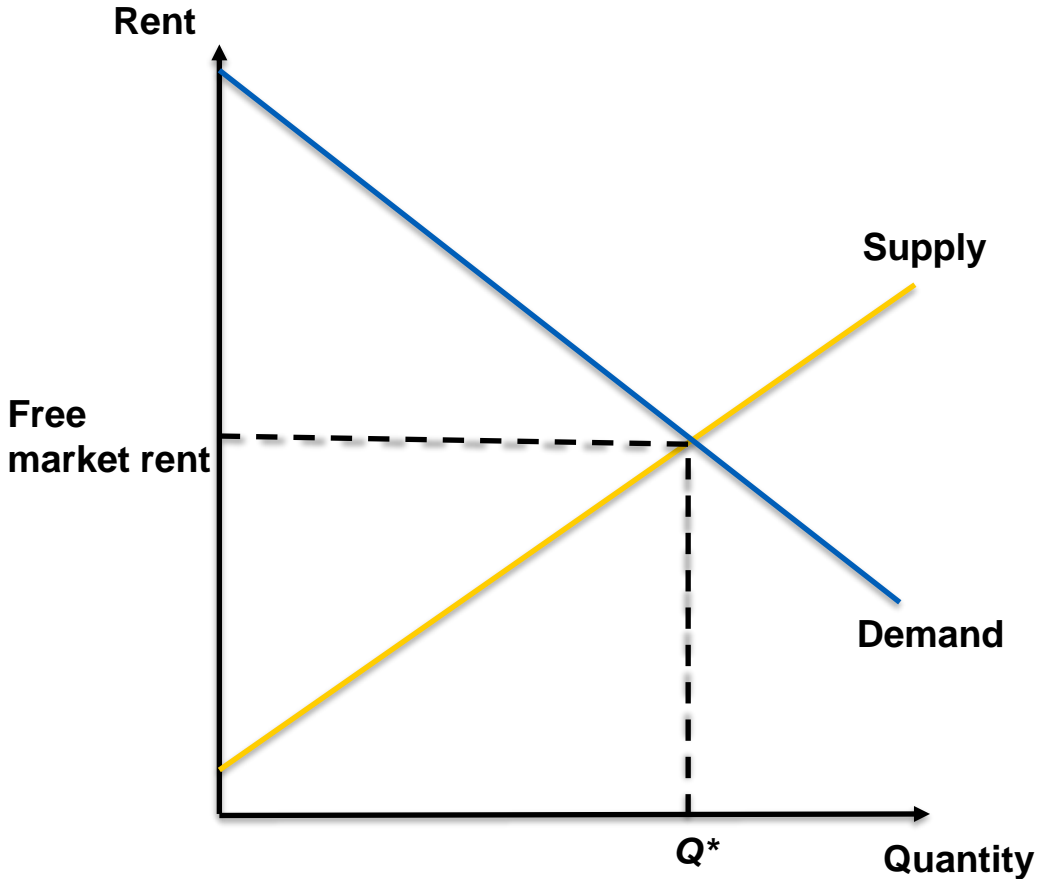
Equilibrium in the rental market



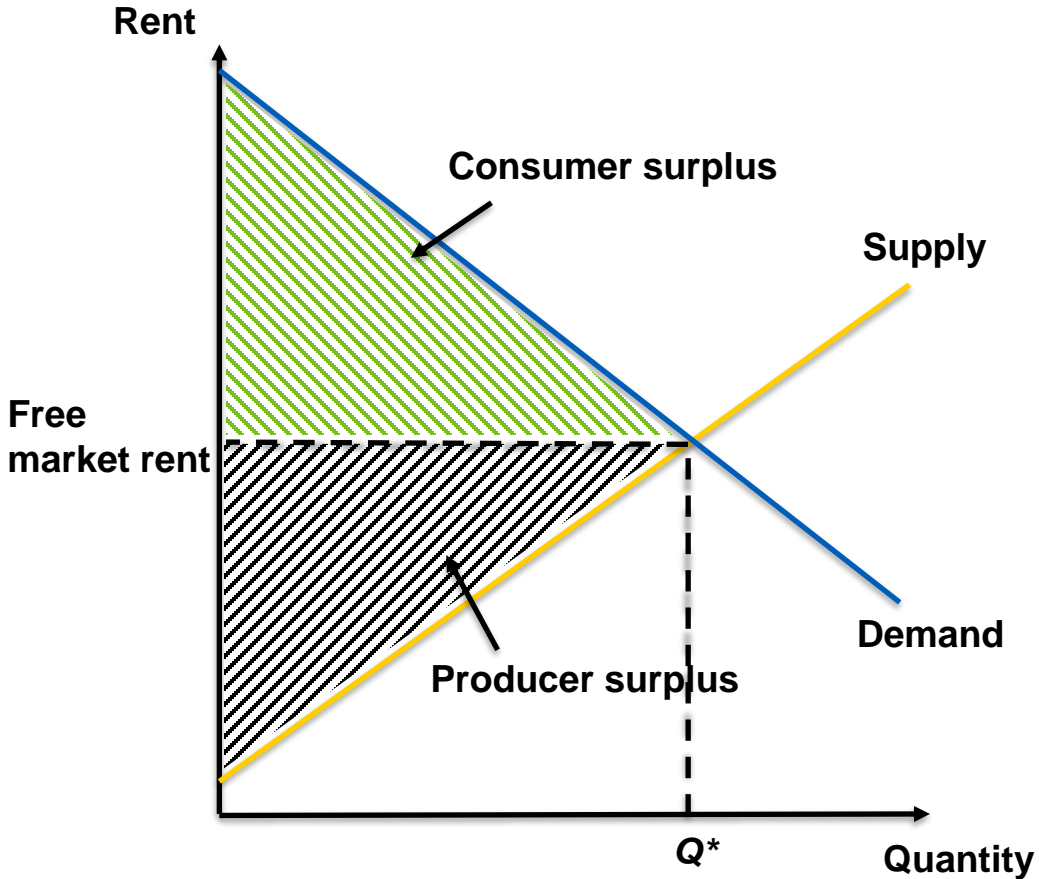
Equilibrium in the rental market



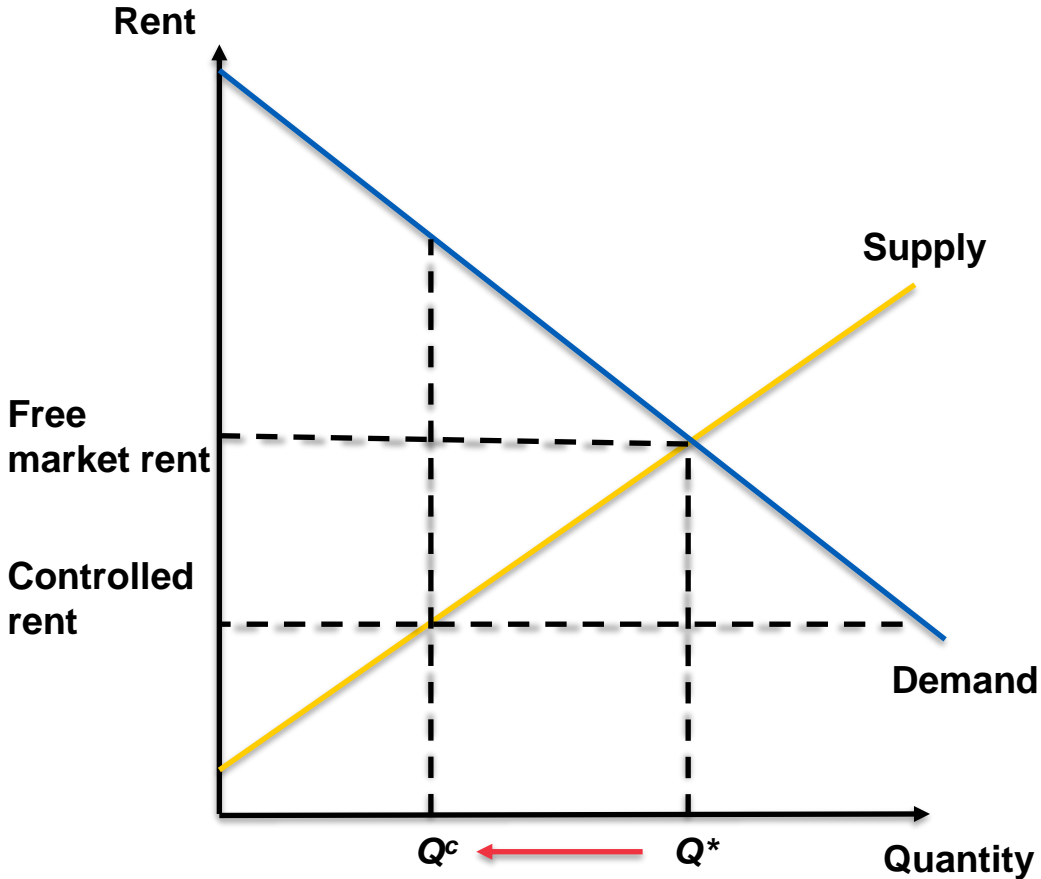
Equilibrium in the rental market



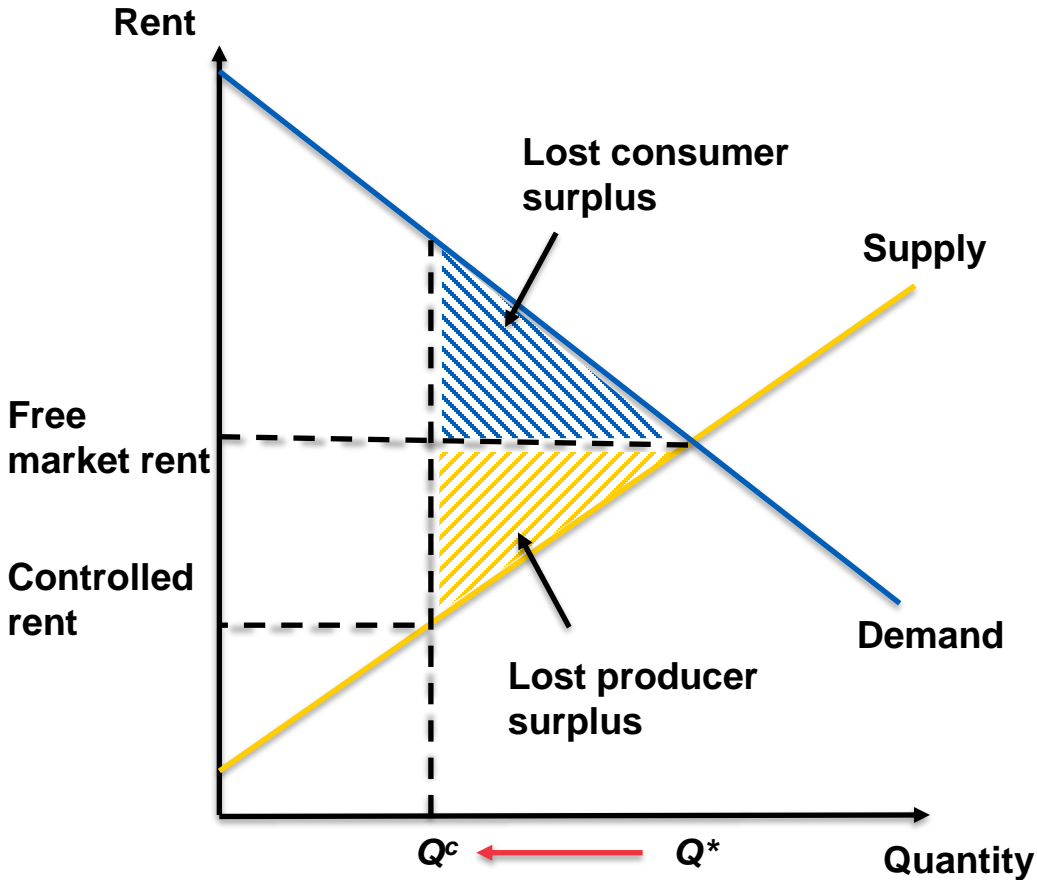
Equilibrium in the rental market



Welfare loss due to undersupply

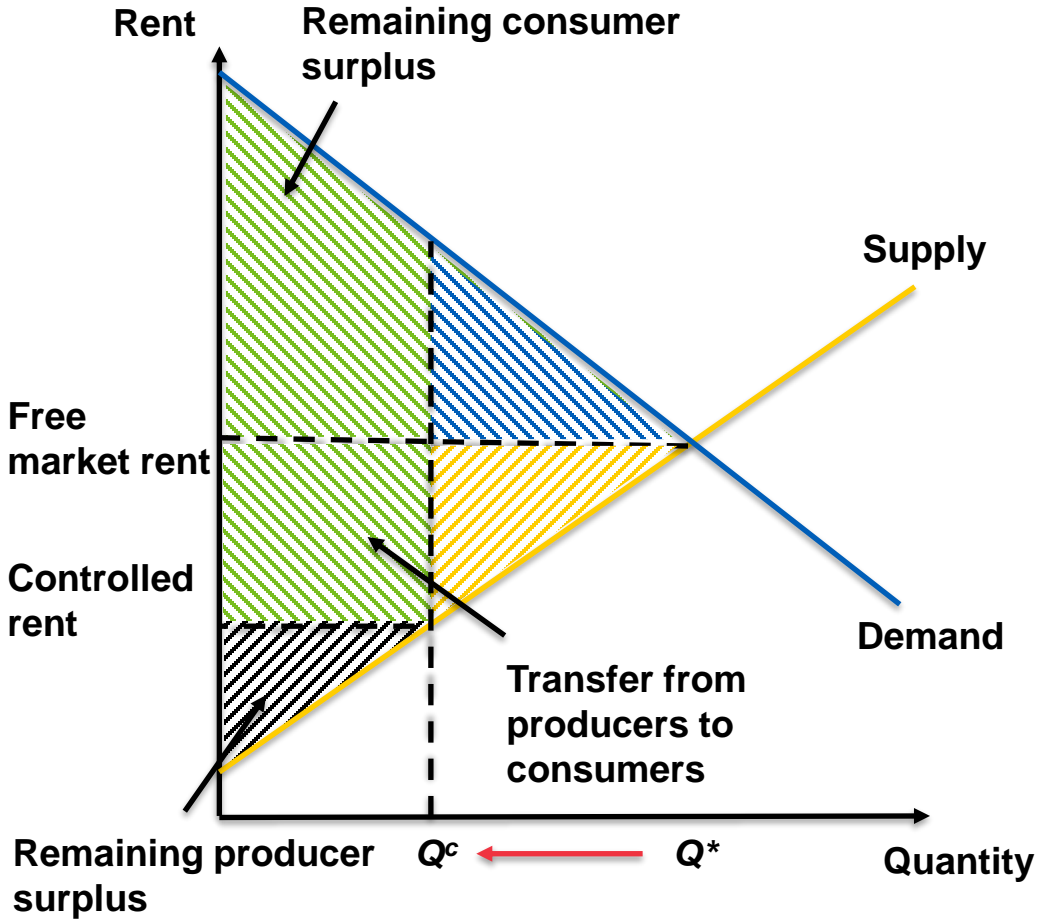


Welfare loss due to undersupply

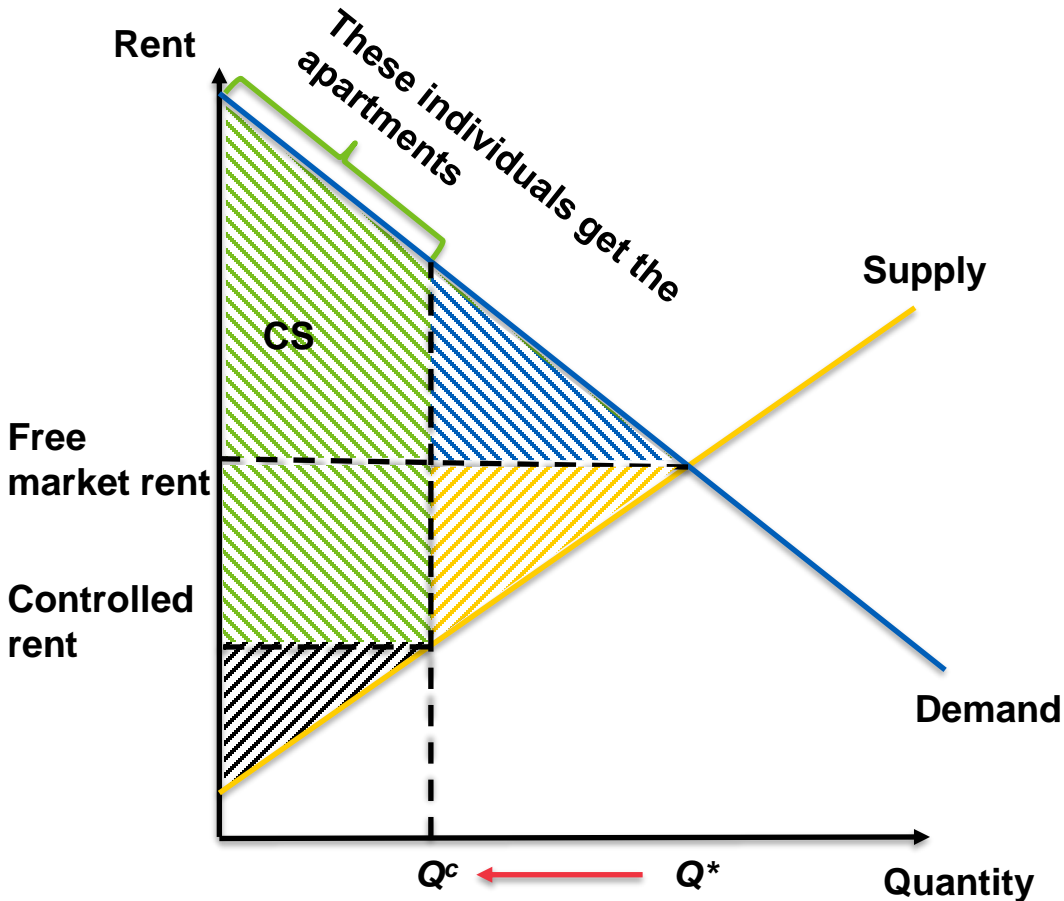


Welfare loss due to undersupply
= Lost consumer surplus
+ lost producer surplus

Welfare loss due to undersupply



Welfare loss due to undersupply

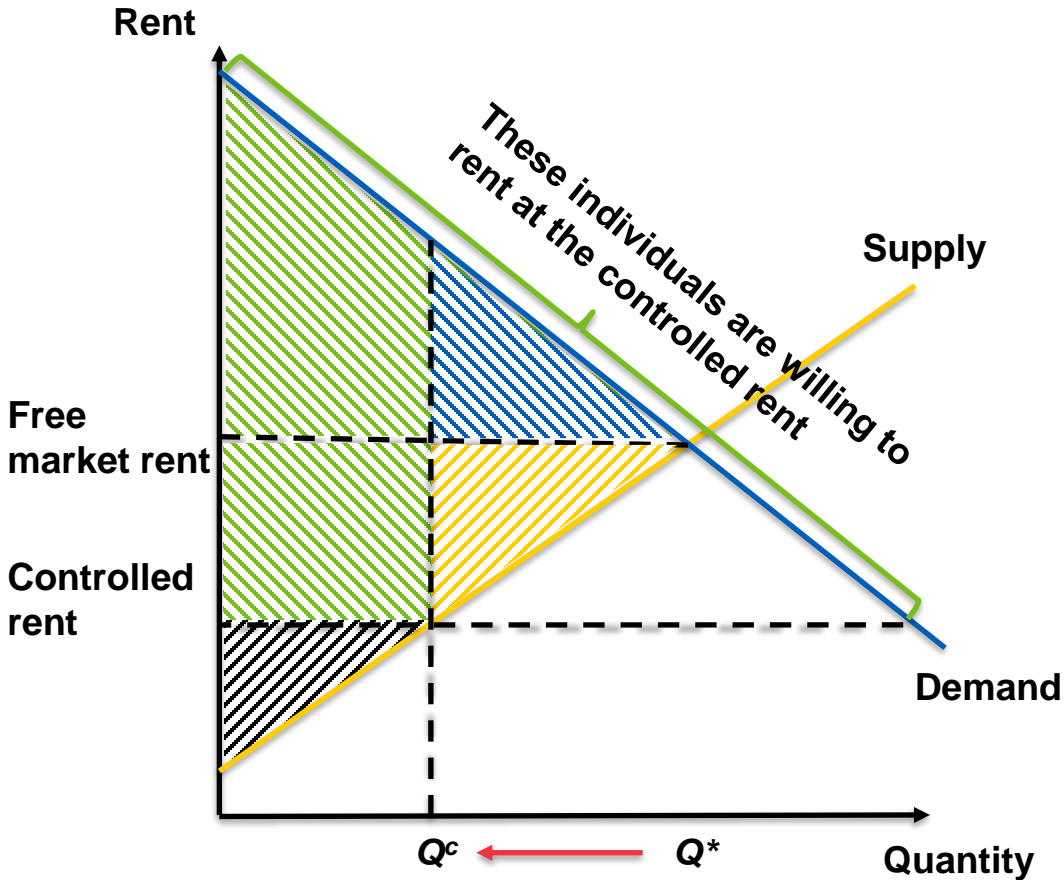


In the analysis so far, the only **welfare loss came from undersupply**

However, this is true only if the individuals or households who value the apartments most get the rent-controlled apartments

This is why we get the remaining consumer surplus (CS)

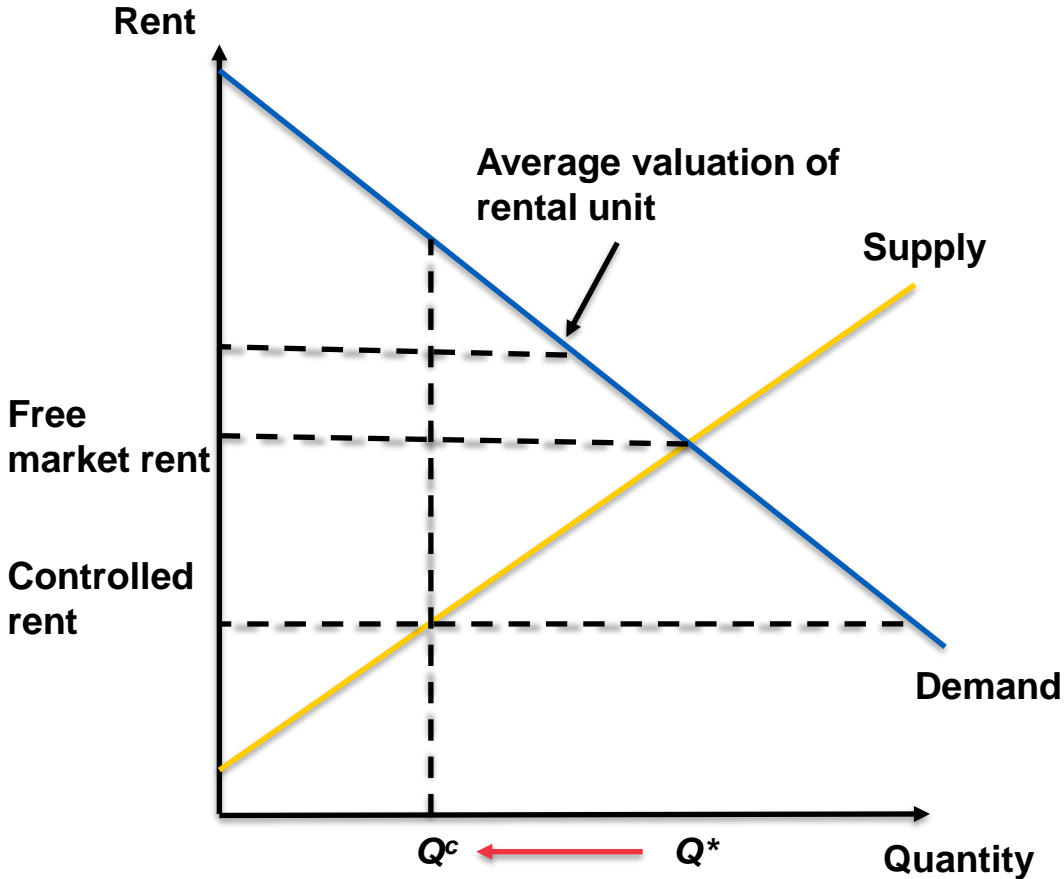
Welfare loss due to misallocation



However, this is unlikely to happen

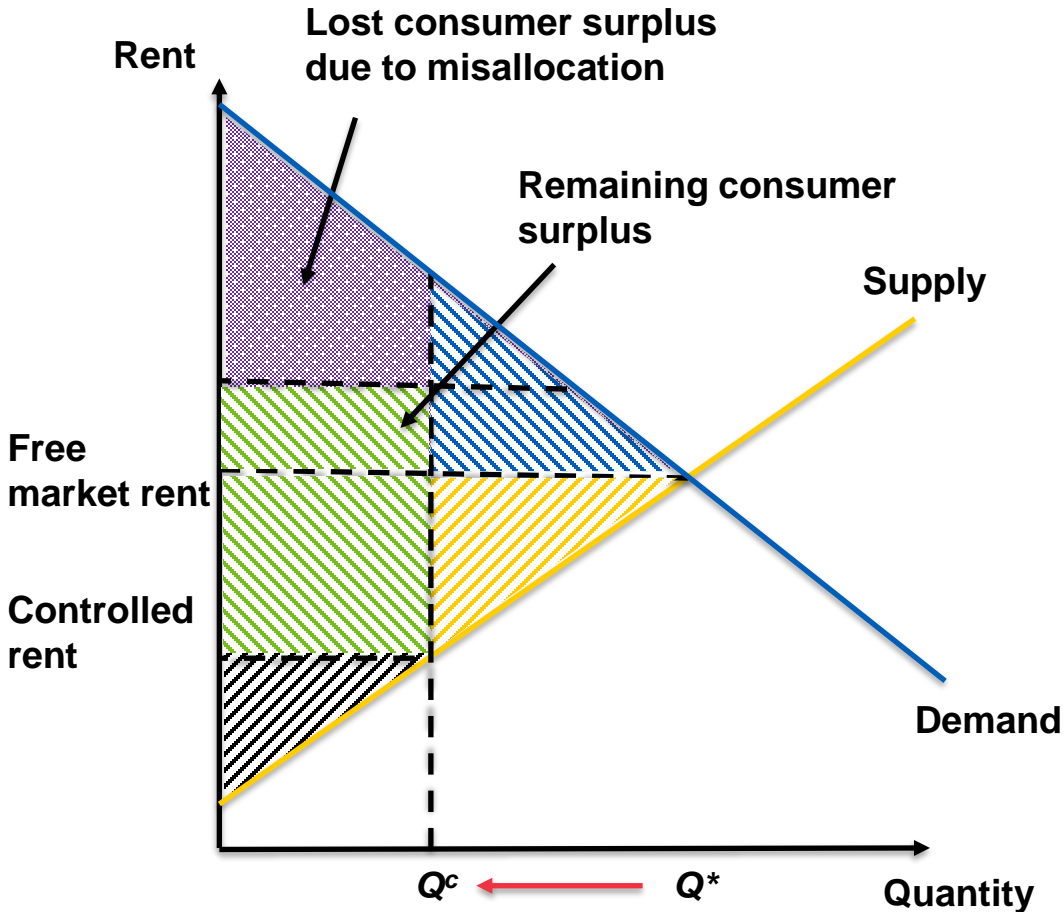
Under rent control, some renters who would never have rented an apartment under free market rents, obtain rental apartments

Welfare loss due to misallocation



Consider what happens if apartments are **allocated randomly** to everyone who is willing to rent

Welfare loss due to misallocation



This **reduces consumer surplus!**

This happens because the average person who gets a rent-controlled apartment does not value that apartment as much as the people who value the apartment most

The welfare loss due to misallocation can be larger than the welfare loss due to undersupply

Partial rent control and free market prices

In some cases, only part of the housing stock is under rent or price controls

- For example, public rental housing (ARA) and Hitas in Finland

In these cases, there are also going to be welfare losses from misallocation

- However, in these cases there are other interesting effects worth considering

The analysis framework helps to understand these other effects as well

Partial rent control and free market prices

When only some fraction of the city's housing stock is price- or rent-controlled, control may influence the price and rent level in the free market

This is because now the people competing on the free-market apartments have on average higher valuation for them

- For example, some people would not have moved to Helsinki in the absence of rent-controlled units
- Assuming that public rentals and Hitas apartments do not add to the housing stock (reasonable assumption)

Low-income housing policy

How to subsidize the poor?

The simplest way is to give money that is not earmarked to anything

- People are free to choose how to spend their money

Alternatively, we can earmark the subsidy to housing

- At least part of the subsidy must be used to pay for housing

There are two ways of doing this:

1. **Tenant-based programs**, such as the Finnish **housing allowance** system (HA) or **housing vouchers** etc.
2. **Place-based programs**, such as the ARA-system in Finland, which offers rental housing at below market level rents

These subsidies may also overlap

Comparing different subsidy types

Consider a household living in a public housing unit (owned by the municipality) with a monthly rental cost of €700

The rent of the unit is below the market rent, which for a similar free-market unit would be €1000

- By occupying the public housing unit instead of a free-market unit, the **household has €300 more to spend** on something else
- The **municipality forgoes the €300** and must either increase taxes on all taxpayers or provide less or lower quality public services

Thus, the tenant receives a €300 subsidy

- In other words, all the taxpayers own an asset that they rent to one household (in this example) at a discount (1000–700)

Comparing different subsidy types

Let's consider two alternative **budget neutral** subsidy schemes

1. A housing allowance:

- The household must pay the market rent (€1000), but the municipality gives the household a €300 housing allowance
- This can be used to rent any housing unit

2. A general monetary subsidy:

- The household must pay the market rent, but the municipality gives the household a €300 subsidy that can be used on anything
- Housing, other consumption, savings

Comparing different subsidy types

1. Housing allowance

- The **household cannot be any worse off**
 - *It can continue to live in the same unit and have as much money for other consumption after housing costs (rental cost after housing allowance is €700)*
 - *The household can move to another unit, and it **moves only if the move makes the household better off***
 - It can move to a cheaper unit (smaller or different n'hood) and use some of the subsidy on food, clothes etc.

2. General monetary subsidy

- Again, the **household cannot be any worse off**
 - *It can continue to live in the same unit and have as much money for other consumption after housing costs*
 - *The household can move to another unit, and it **moves only if the move makes the household better off***
 - *Can also move, e.g., back home and pay no rent*

Comparing different subsidy types

The place-based subsidy was the worst way of subsidizing households, and the housing allowance was worse than the monetary subsidy

- Household loses the subsidy if they move => constrains choices and creates lock-in
- Given the costs of the subsidies to taxpayers (that is, the amount of subsidy that was given to a household)

Why are these type of housing subsidies so prevalent if they seem to be worse than simply giving money?

- There are several issues that were left out of these simple comparisons

Why subsidize housing?

The classic justification for using **in-kind transfers**, instead of cash transfers, is that poor households do not consume enough of the subsidized good

- Donor preferences
- The household member who chooses the level of consumption in the household does not consider the welfare of other members (e.g. a parent does not take enough care of the children's needs)
- Residential stability

Imperfect information where the government is unable to distinguish between the neediest and others

- Can be used as a way for people who truly need the subsidy, to self select (live with parents vs. live on your own)

Housing allowance vs. public housing – Redistribution

Both are transfers to some households funded by taxes

Which of the subsidies is better targeted to households who are in most need of subsidies?

- This is an empirical question (example coming up)

Housing allowance vs. public housing – Fairness

Are similar people treated similarly in the subsidy schemes?

Anyone who is eligible for the housing allowance receives the housing allowance (you must apply for it)

- Similar people are treated similarly
- Depends on program characteristics (e.g. US housing vouchers)

There is a limited number of public housing units available, and everyone cannot obtain a unit

- Similar people are not treated similarly
- Often, the application process is a black box

Housing allowance vs. public housing – Segregation and social mixing

Segregation may be a problem if there are **neighborhood effects**

- It may matter who your neighbors are

Neighborhood level

- Public housing buildings can be scattered throughout the city, which may lead to less segregation at neighborhood level
- At the same time, it is difficult to affect where high-income households live
- The housing allowance can also help low-income households to choose higher quality neighborhoods

Housing allowance vs. public housing – Segregation and social mixing

Building level

- Public housing units are often provided so that entire buildings contain only public housing units
- You get a cheap apartment, but you must live with other low-income people => **leads to segregated buildings**
- This can be mitigated through tenant selection so that also middle- and high-income households can obtain a unit
- Housing allowance recipients can live in free market buildings with, e.g. homeowners

**Ultimately, effects on segregation is an empirical question
(example coming up)**

Housing allowance vs. public housing – Transparency

Housing allowance criteria are transparent

- The total costs of the system are transparent and are reported systematically

The criteria for obtaining public housing units are not transparent

- The costs of the system are not reported systematically

Because of these differences there is a constant public pressure on the housing allowance, but practically no public debate about the costs of the public housing system

Housing allowance vs. public housing – Effects on market rents

Both subsidies aim to help the tenants, however the **economic incidence** (who actually benefits) of a subsidy may not be the same as the **statutory incidence**

- This is because prices may change and if so, part of the subsidy is captured by landlords in the form of higher rents
- Both subsidies may increase housing demand and if supply does not adjust, market rents and prices may increase
- In the case of public housing units this might be slightly difficult to understand (See rent control slides)

Details of the programs are crucial in understanding these effects

Housing allowance vs. public housing – Effects on total housing stock

Do public housing units add to the housing stock or simply replace private units that would have been built anyway?

- Whenever prices are above construction costs private developers have an incentive to build
- In these areas, public housing crowd-outs private construction
- If prices are below construction costs, private developers do not have incentives to build
- In these areas, public housing units may increase the total housing stock, but these are areas where housing is already cheap

Depends on what happens to prices and rents

Housing allowance vs. public housing – Exclusion from the private market

Some households may be excluded from the private rental market

- For example, not able to get credit and pay the rental deposit even with a housing allowance
- Public housing units may be the only option for these people
- How many public housing units do we need just for this policy?

On the other hand, public housing units may provide better tenure protection and protection against rent risk

- But why would we want to give this to only some households?

Empirical examples



Contents lists available at [ScienceDirect](#)

Journal of Housing Economics

journal homepage: www.elsevier.com/locate/jhec



Delivering affordable housing and neighborhood quality: A comparison of place- and tenant-based programs

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ARTICLE INFO

Keywords:

Hedonic regression
Housing allowance
Place-based policy
Public housing

JEL codes:

H22
R21
R23

ABSTRACT

This paper analyzes the relative merits of large place- and tenant-based housing programs in Finland in terms of housing affordability and neighborhood quality. Using hedonic regression methods and household micro data, we find that the rent savings to public housing tenants are considerable and comparable in size to the housing allowance. Furthermore, this public housing subsidy is less targeted towards low-income households than the housing allowance. At the same time, low-income public housing tenants live in poorer, less educated and lower quality neighborhoods than similar low-income households living in private rental housing. This suggests that place-based programs may lead to more segregation than tenant-based alternatives even when neighborhood mixing is an explicit aim of the program, as is the case in Finland.

Tenant-based housing allowance

You receive a subsidy based on your rental contract (or housing costs if homeowner)

- So-called general housing allowance

Currently, the allowance is 70% of your rental payment – basic deductible

- Basic deductible depends on income (and family structure), the higher your income is the lower is your housing allowance
- And there is also a maximum rent ceiling
- If rent is above the ceiling, allowance compensates only up to the ceiling, not actual rent (Helsinki: 582 €/month for singles)
- Does not depend on the characteristics of the unit (within a municipality)

Place-based subsidy scheme

Focus on units owned by the city of Helsinki

Units are subject to regulation (often 40 years):

- Units cannot be sold
- Rents based on maintenance and capital costs and the idea is that the rents are below market rents => subsidy to tenants

Tenant selection

- Based on housing need, income and wealth
- Other objectives: diverse tenant structure within buildings and socially balanced neighborhoods => aims to prevent segregation

Our paper

Use detailed register data on the private and public rental housing units and their tenants in the city of Helsinki

We ask:

- How much do the public housing tenants benefit in terms of rent savings?
- What are the distributional effects (relative to HA)?
- How do the two subsidy schemes compare in delivering neighborhood quality and how do they affect segregation?

Analysis in a nutshell

Define subsidy to public housing tenants as

$$\text{Subsidy} = \text{predicted market rent} - \text{actual rent}$$

Predict market rents for public housing units using hedonic regression and private market data

- Data on market rents and unit attributes collected from www.vuokraovi.com in 2012 and 2013
- Data on actual rents from the city of Helsinki

Link the estimated subsidy to register data on households

Compare the neighborhoods (zip codes / buildings) of similar low-income hh's in public housing and private rental housing

Helsinki housing market

330,000 housing units in total

- 147,000 rental units
- 70,000 social housing (public housing and privately-owned subsidized rental housing)

Social housing stock:

- 43,000 regular rental units owned by city of Helsinki (public housing)
- 9,000 regular privately-owned subsidized rental units
- Rest: rental housing for elderly, students etc.

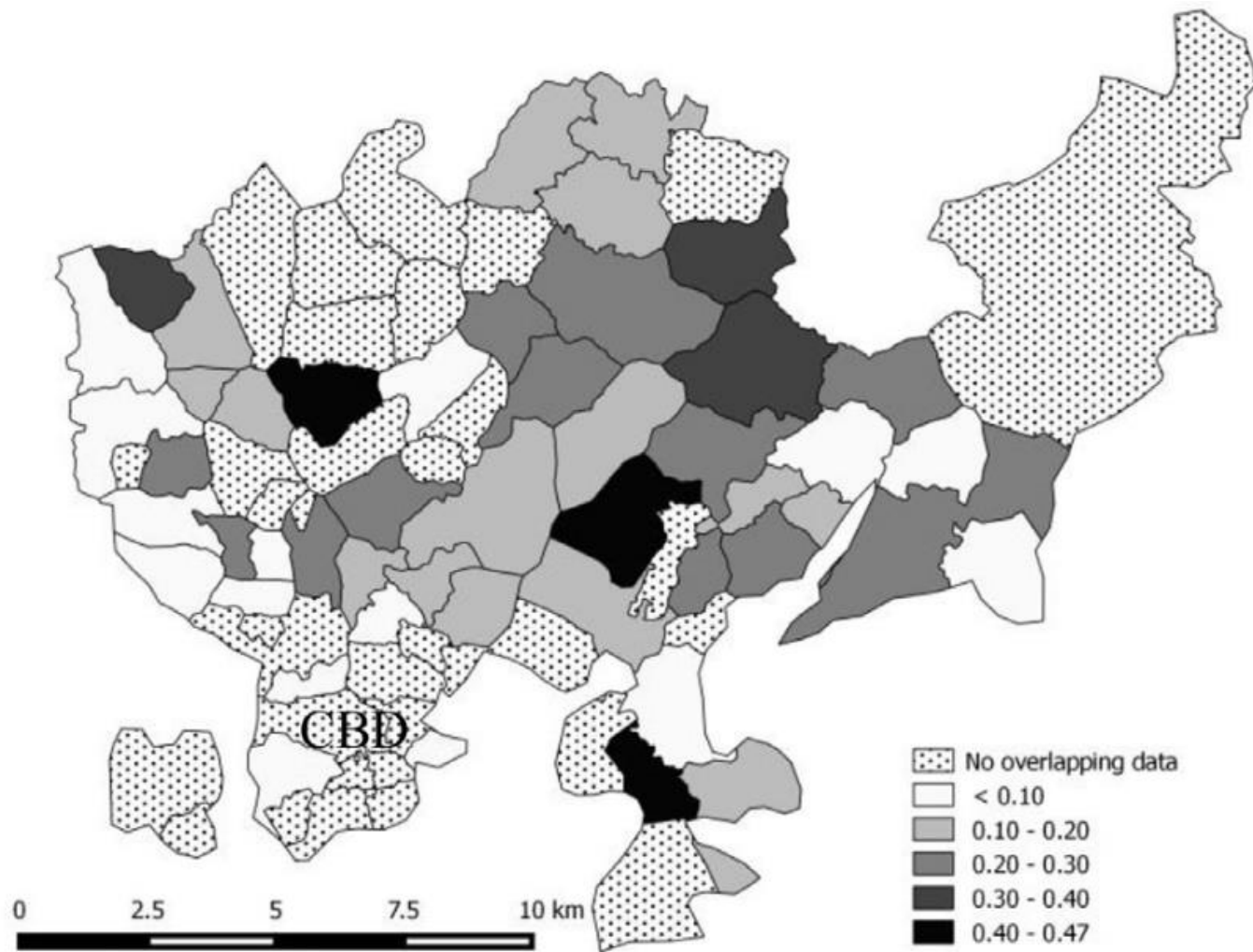
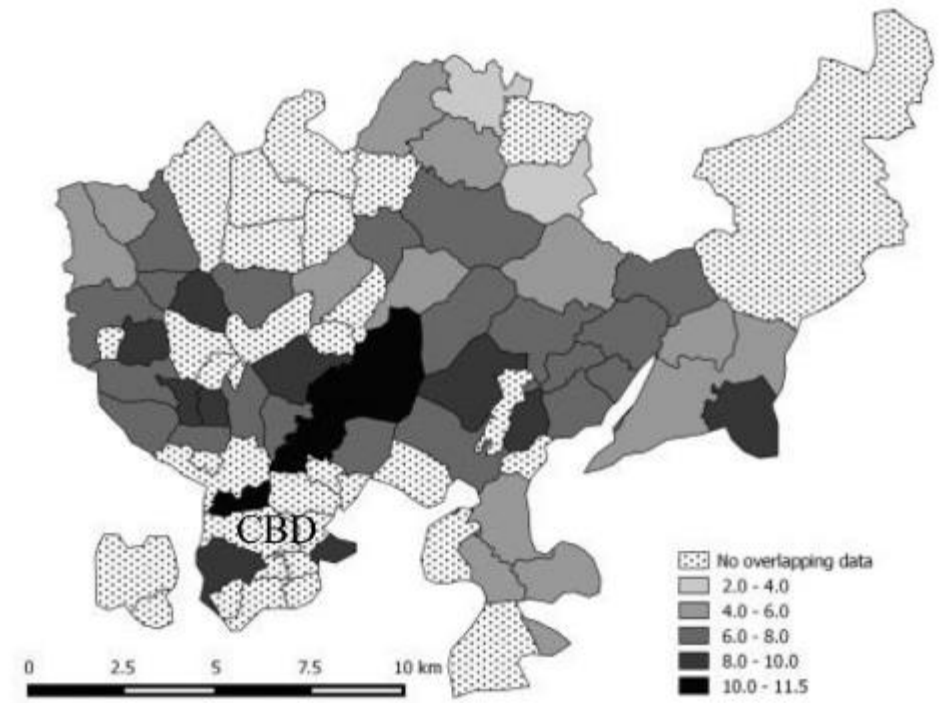
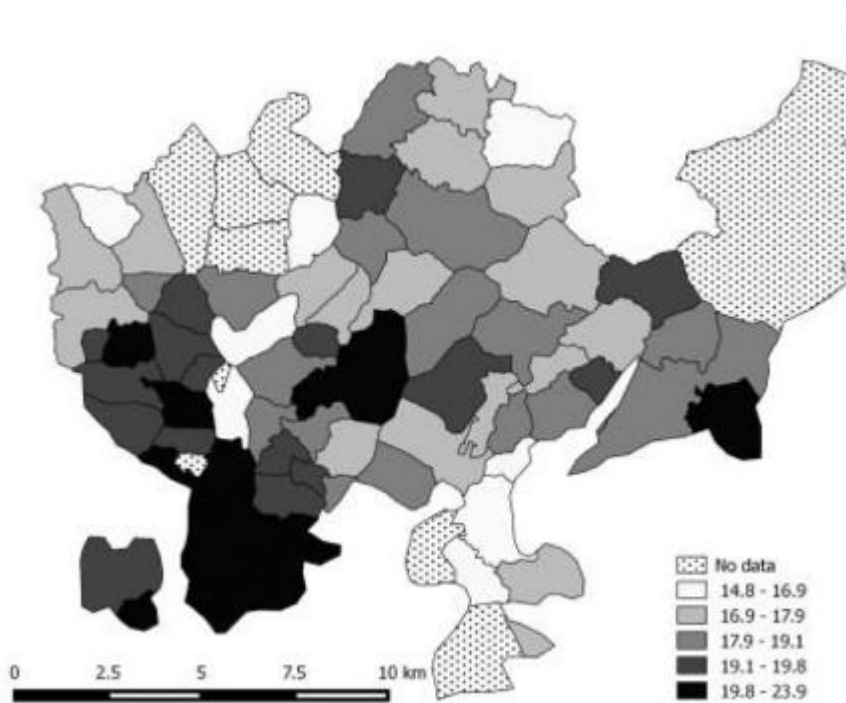
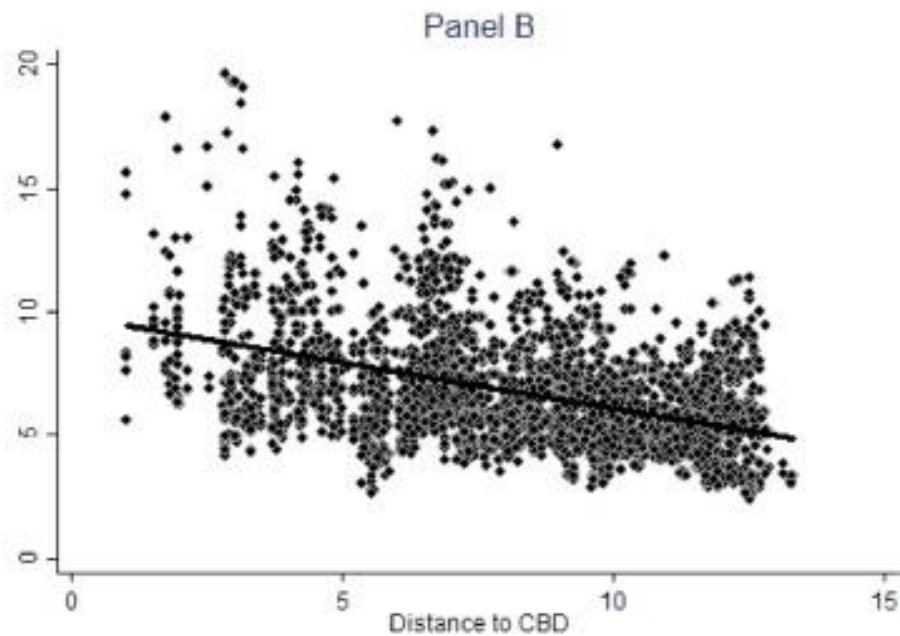
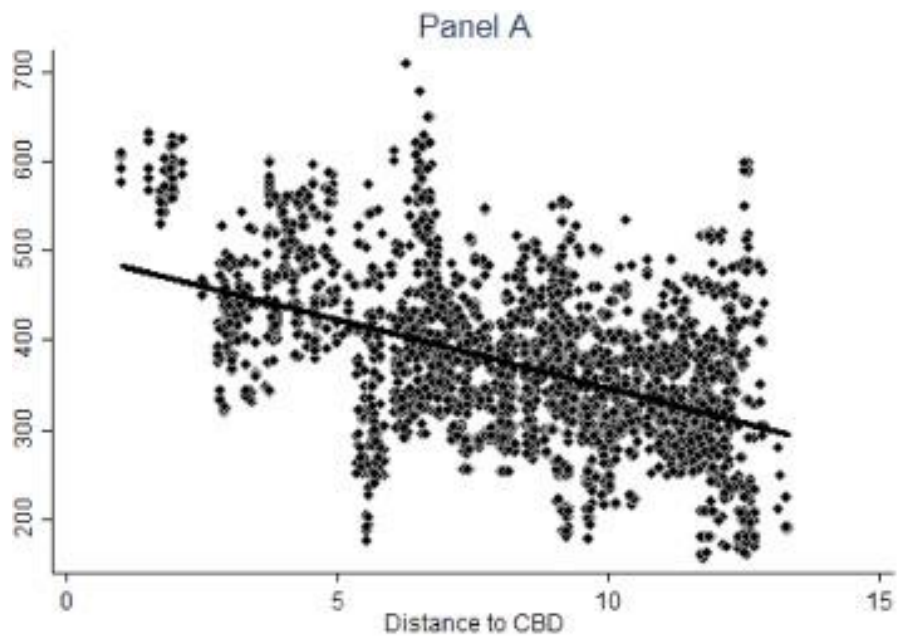


Fig. 1. Share of public housing units by zip code.

Market rents and subsidy across neighborhoods



Subsidy and to distance to CBD



Housing tenure and distribution of subsidy by income decile

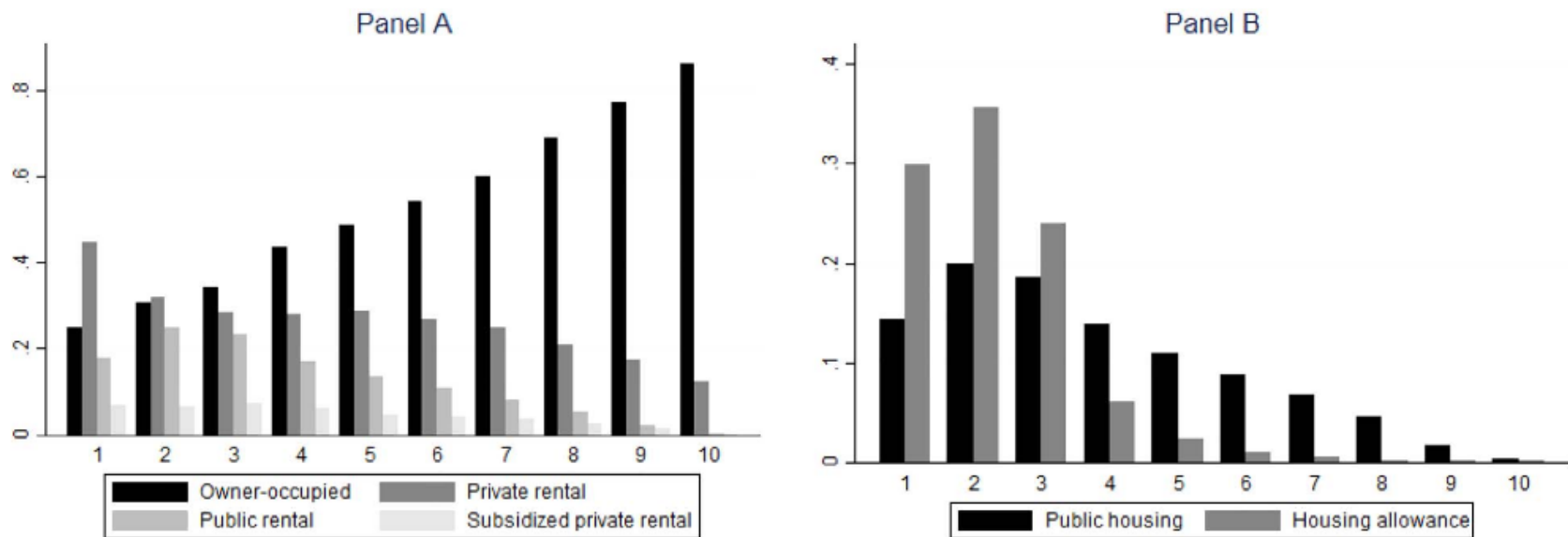


Fig. 5. Housing tenure and distribution of subsidy by income decile.

Notes: The income deciles are based on disposable income scaled by the OECD equivalence scale. Panel A describes the tenure structure of each income decile. Panel B describes the shares of the total public housing subsidy and the housing allowance received by households in each income decile.

Segregation

Public housing “collects” poor households into same buildings and neighborhoods

- It is an extra subsidy that a poor household receives IF the household moves to a building with other poor households

On the other hand, it may be possible to mitigate this by

- locating the buildings to high-priced neighborhoods and
- by applying tenant selection rules that allow middle- and even high-income households to occupy the units

Housing allowance recipients can choose their location more freely (within their budget constraint of course)

- They can use the allowance either to consume larger units and/or enter better quality n’hoods

Segregation

Neighborhood division:

- Zip codes and buildings

Consider four neighborhood “quality” measures:

- Median disposable income,
- Share of hh’s below local poverty line,
- Share of hh’s with master’s degree and
- Market rent per square meter

Compare exposure of public housing and private rental tenants to neighborhood quality by income quintile

Neighborhood exposure

Results from OLS regressions using hh level data.

Outcome variables measured at zip code level.

Sample includes only renters and zip codes with at least 20 hh's in our data.

	Median income (1)	Poverty rate (2)	Share with a master's degree (3)	Mean rent (€/m ²) (4)
Constant	23397*** (613.0)	0.199*** (0.011)	0.206*** (0.015)	20.90*** (0.606)
2. quintile	54.18 (122.7)	-0.004** (0.002)	0.002 (0.004)	0.051 (0.142)
3. quintile	683.9*** (171.8)	-0.011*** (0.002)	0.016*** (0.004)	0.326* (0.170)
4. quintile	1315*** (263.0)	-0.016*** (0.004)	0.034*** (0.006)	0.761*** (0.249)
5. quintile	2622*** (400.6)	-0.029*** (0.005)	0.066*** (0.010)	1.370*** (0.342)
1. quintile * public tenant	-2392*** (476.6)	0.014* (0.008)	-0.076*** (0.013)	-2.407*** (0.509)
2. quintile * public tenant	94.71 (145.0)	-0.000 (0.003)	0.003 (0.004)	0.029 (0.168)
3. quintile * public tenant	-253.6 (212.7)	0.002 (0.003)	-0.004 (0.006)	-0.259 (0.199)
4. quintile * public tenant	-742.81* (319.5)	0.007 (0.005)	-0.019** (0.008)	-0.456 (0.306)
5. quintile * public tenant	-1451** (565.5)	0.011 (0.008)	-0.036** (0.014)	-0.764* (0.412)
N	14,534	14,534	14,534	14,412
R ²	0.20	0.08	0.24	0.24
Household controls	yes	yes	yes	yes

Neighborhood exposure

Dummy variables (0/1) indicating the income quintile

Interaction terms of dummy variables

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Neighborhood exposure

A free market tenant in the lowest income quintile is exposed to neighbors whose median income is €23,397

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Neighborhood exposure

A free market tenant in the lowest income quintile is exposed to neighbors whose median income is €23,397

A free market tenant in the highest income quintile is exposed to neighbors whose median income is €26,019 (€23,397+€2622)

Evidence of segregation so that higher income people have higher income neighbors

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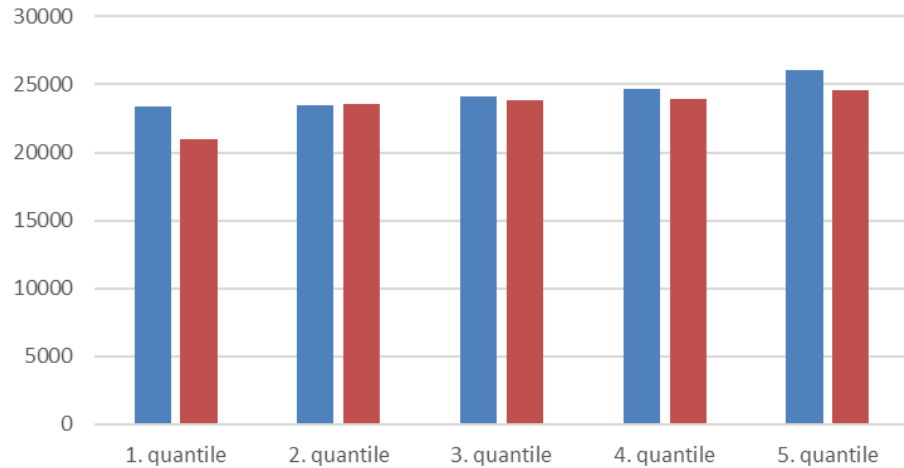
A free market tenant in the lowest income quintile is exposed to neighbors whose median income is €23,397

A public housing tenant in the lowest income quintile is exposed to neighbors whose median income is €21,005 (€23,397–€2392)

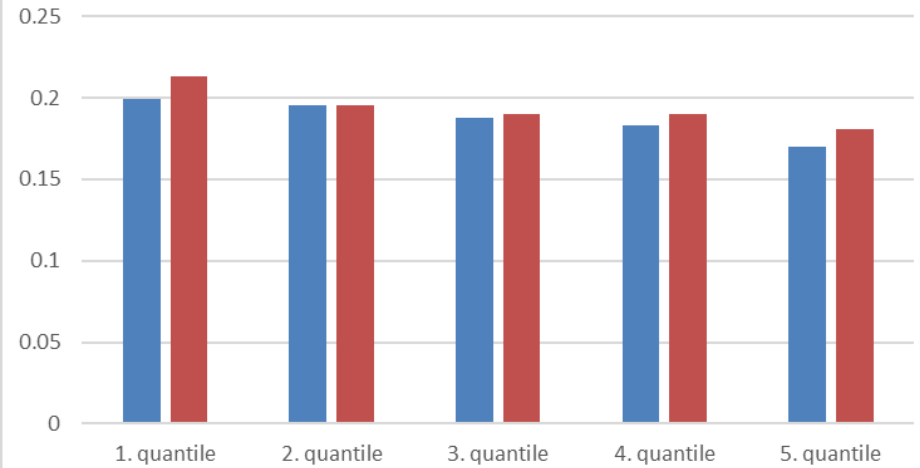
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1. quintile * public tenant	-2392*** (476.6)	0.014* (0.008)	-0.076*** (0.013)	-2.407*** (0.509)
2. quintile * public tenant	94.71 (145.0)	-0.000 (0.003)	0.003 (0.004)	0.029 (0.168)
3. quintile * public tenant	-253.6 (212.7)	0.002 (0.003)	-0.004 (0.006)	-0.259 (0.199)
4. quintile * public tenant	-742.81* (319.5)	0.007 (0.005)	-0.019** (0.008)	-0.456 (0.306)
5. quintile * public tenant	-1451** (565.5)	0.011 (0.008)	-0.036** (0.014)	-0.764* (0.412)
N	14,534	14,534	14,534	14,412
R ²	0.20	0.08	0.24	0.24
Household controls	yes	yes	yes	yes

Neighborhood exposure

Median income



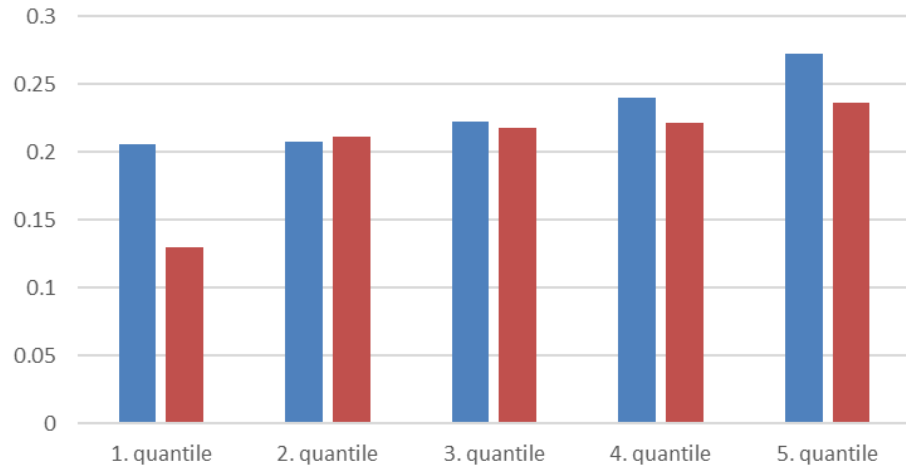
Poverty rate



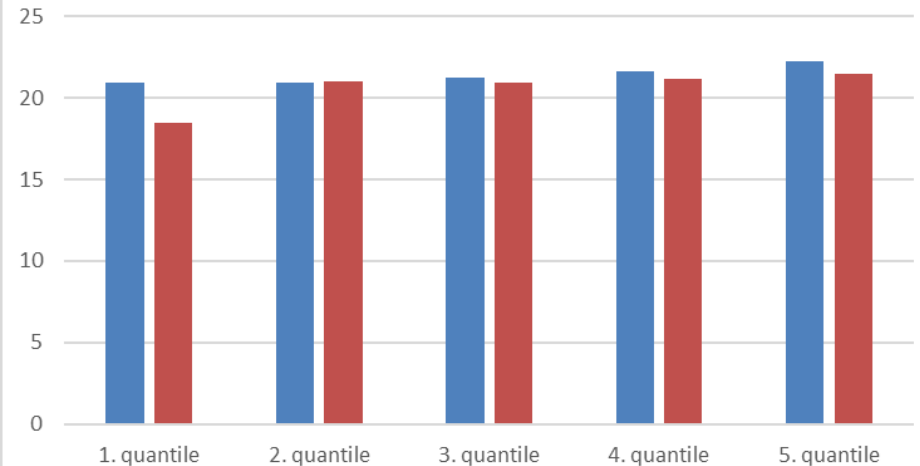
- Free market
- Public housing

Neighborhood exposure

Education



Rent (€/m2)



- Free market
- Public housing

Building exposure

Results from OLS regressions using hh level data.

Outcome variables measured at building level.

Sample includes only renters and buildings with at least 20 hh's in our data.

	Median income (1)	Poverty rate (2)	Share with a master's degree (3)
Constant	20320*** (687.5)	0.319*** (0.027)	0.191*** (0.017)
2. quintile	799.1*** (263.5)	-0.078*** (0.011)	0.001 (0.008)
3. quintile	2434*** (305.1)	-0.109*** (0.011)	0.006 (0.009)
4. quintile	4899*** (599.4)	-0.136*** (0.018)	0.059*** (0.011)
5. quintile	5913*** (747.6)	-0.149*** (0.020)	0.093*** (0.014)
1. quintile * public tenant	-4139*** (482.0)	0.083*** (0.022)	-0.122*** (0.010)
2. quintile * public tenant	515.5 (390.4)	-0.027 (0.020)	0.004 (0.009)
3. quintile * public tenant	-514.2 (512.1)	-0.005 (0.024)	-0.001 (0.010)
4. quintile * public tenant	-2863*** (853.4)	0.033 (0.034)	-0.060*** (0.013)
5. quintile * public tenant	-2896** (1198)	0.044 (0.045)	-0.087*** (0.020)
N	3,343	3,343	3,343
R ²	0.35	0.20	0.34
Household controls	yes	yes	yes

Segregation

Both private rental and public housing tenants in higher income quintiles live in better quality neighborhoods compared to tenants in lower income quintiles

Low-income public housing tenants live in lower quality neighborhoods than similar private rental tenants

- They live in zip codes with 10% lower median income, 7 percentage points lower share of hh's with a master's degree and lower market rent (2.4 Euros/m²)
- The same is true at the building level

The results hold when sample is restricted to include only hh's that received HA for 12 months

Conclusions – Eerola & Saarimaa

Public housing subsidy is comparable to HA in size in Helsinki

HA is better targeted to low-income households

- Of course, ultimately depends on potential rent effects

Low-income public housing tenants are more isolated into poorer neighborhoods and buildings compared to other low-income households

Results can be explained by lock-in effects together with other features of the program

Incidence of Housing Allowances: Quasi-Experimental Evidence*

Essi Eerola[†]

Teemu Lyytikäinen[‡]

Tuukka Saarimaa[§]

Tuuli Vanhapelto[¶]

2015 housing allowance reform

Before 2015 HA was capped by a ceiling on rent per m² and floor area:

$$HA = 0.8 \left[\min(Rent/m^2, MaxRent_m^2) \cdot \min(Floorarea, Max_m^2) - deductible \right]$$

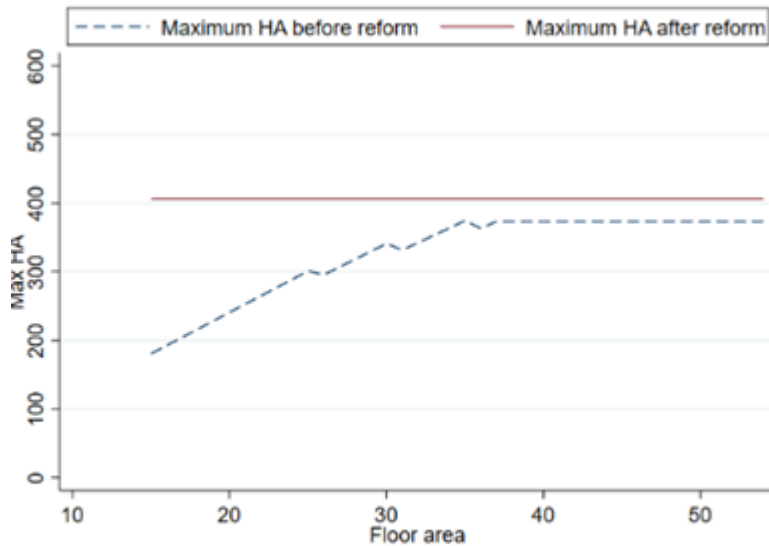
In 2015, the ceilings on rent per square meter and floor area were replaced by a ceiling on total monthly rent:

$$HA = 0.8[\min(Rent, MaxRent) - deductible]$$

***MaxRent_m²* and *MaxRent* vary by region - higher ceiling in large cities**

Before 2015, also construction year and heating system affected the allowance

Research design



(a) Maximum HA in Helsinki

Data on the universe of HA recipients from KELA, 2010–2020

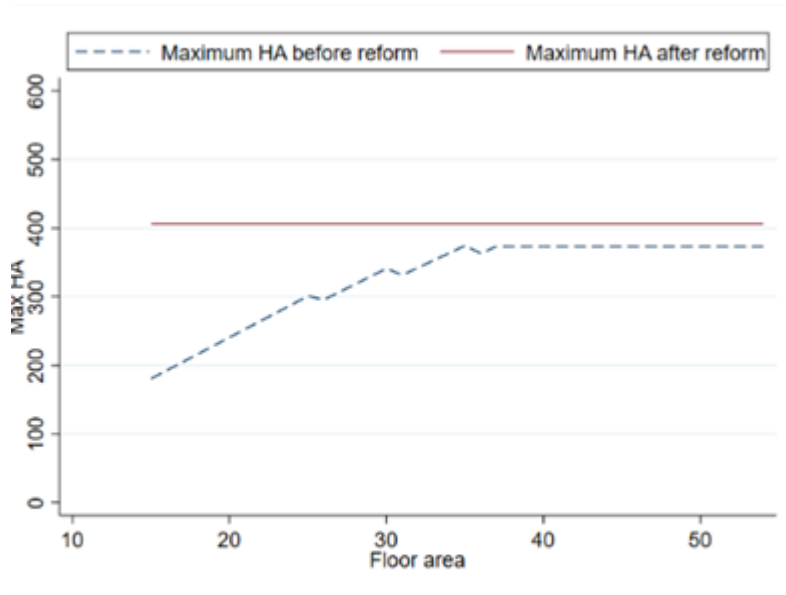
Simulate the change in HA for each housing unit due to the reform

- What the HA was in 2014 in the old system
- What the HA would be for this same housing unit with the new program parameters

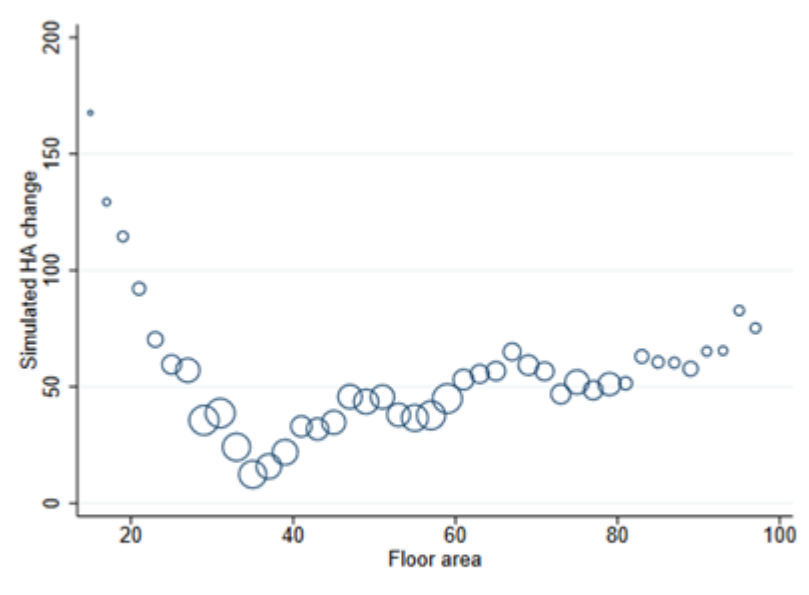
Use this “simulated change” as the treatment in a DID setup

- Can follow the same units before and after the reform

Research design

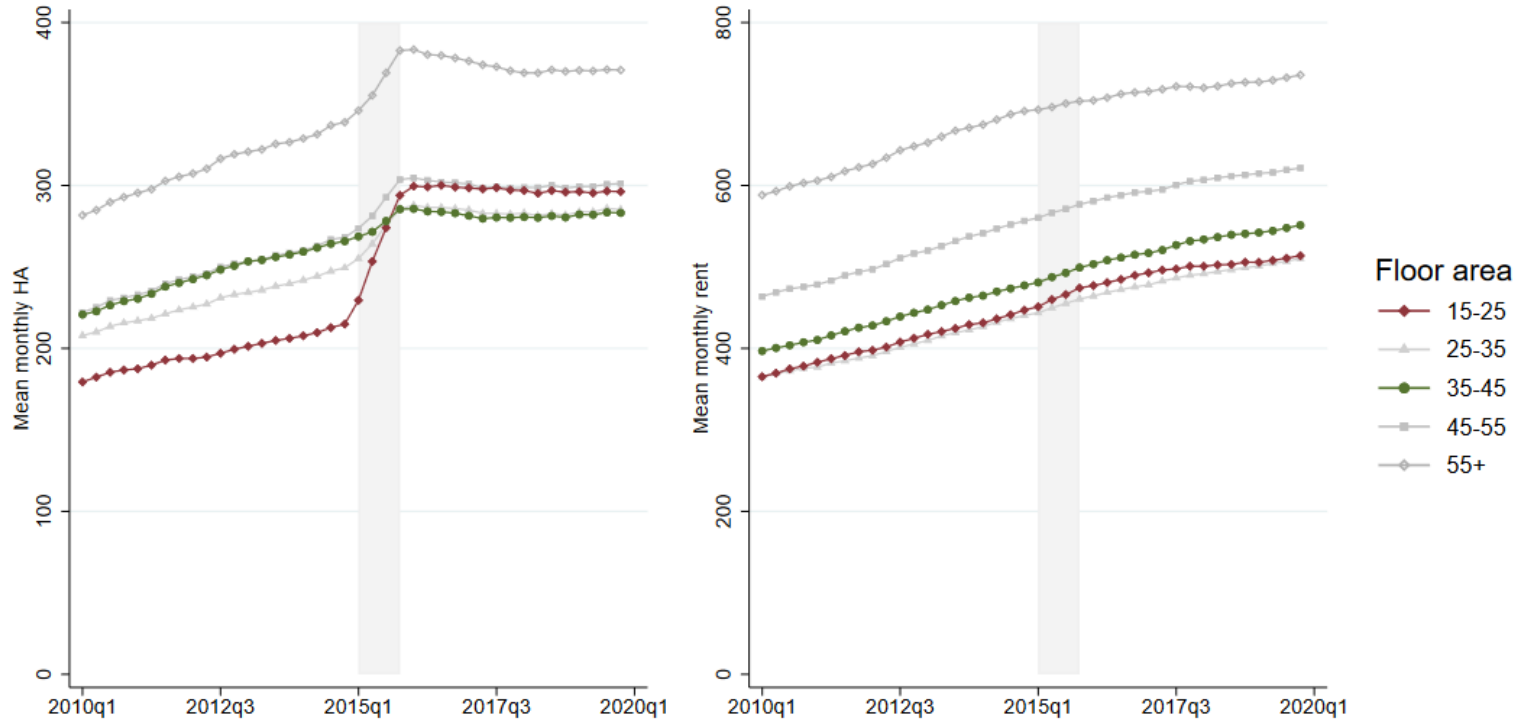


(a) Maximum HA in Helsinki



(b) Simulated HA change

Rent effects – all contracts



(a) All contracts.

Rent effects – new contracts



(b) New contracts

Simulated change as a continuous treatment – new contracts

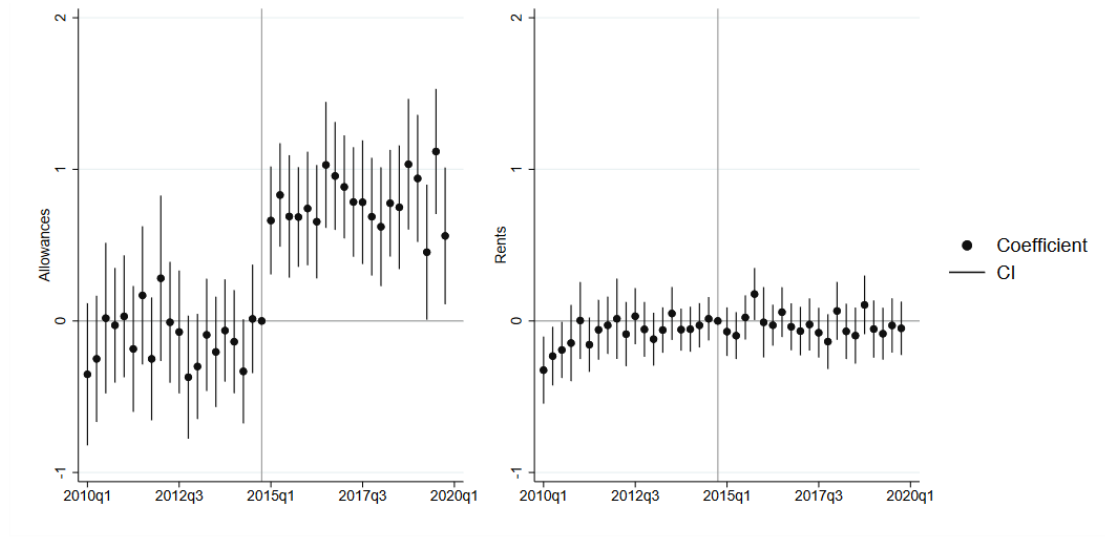


Figure 5: Comparison of monthly HAs and rents of units that received different-sized treatment doses, with housing unit fixed effects.

Notes: The figure plots coefficients from an event study regression in our fixed effects sample, where the outcome (HA or rent) is regressed on quarter fixed effects, housing unit fixed effects and treatment dose \times quarter fixed effects, omitting the last quarter before the reform. Dots and whiskers illustrate the point estimate and the 95% confidence intervals of the treatment \times quarter coefficients. Standard errors are clustered at the housing unit level.

Table 4: Continuous-treatment DID-IV estimates, with housing unit fixed effects.

	DID		IV
	(1)	(2)	(3)
	Allowance	Rent	Rent
HA change	0.899 (0.0339)	0.0242 (0.0161)	
Allowance			0.0270 (0.0177)
Month \times year FEs	✓	✓	✓
Unit FEs	✓	✓	✓
Outcome mean	314.1	577.3	577.3
N	22346	22346	22346
SE clustered by	Unit	Unit	Unit
N of clusters	11173	11173	11173
First-stage F			704.7

Notes: The table reports results from DID and IV regressions where the treatment or instrument is defined to be a simulated change in HAs as described in Section 2.3. Columns 1 and 2 report coefficients from a regression of the outcome on our measure of continuous treatment \times a post indicator. Column 3 reports the second-stage of an IV regression, where HAs are instrumented for by a continuous treatment \times post indicator. The first stage of this regression corresponds to column 1. All specifications contain month-by-year and housing unit fixed effects. Standard errors are clustered at the housing unit level.

The role of supply and demand

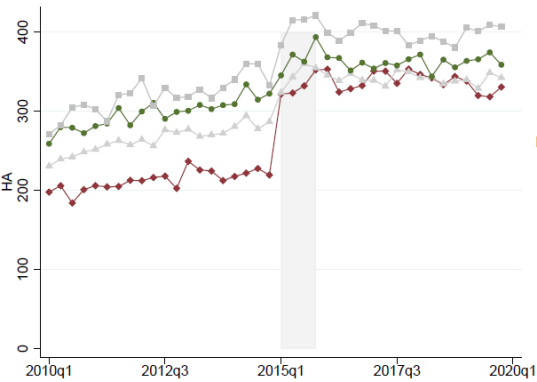
The observed effects of HA on rents are an equilibrium outcome stemming from changes in rental housing demand and supply

Our estimates of HA pass-through to rents are small

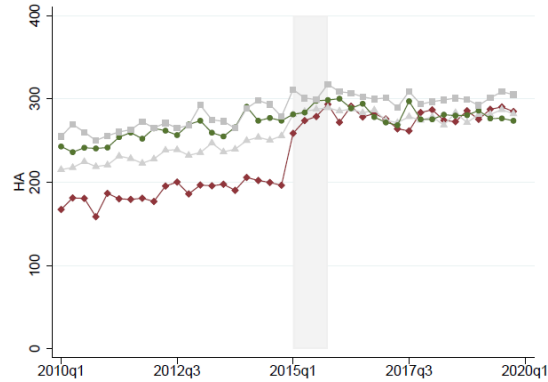
This could reflect either

- i. a high supply elasticity (a large increase in the quantity of treated units in the rental market), or
- ii. a low demand elasticity (a small change in the willingness to pay for treated units)

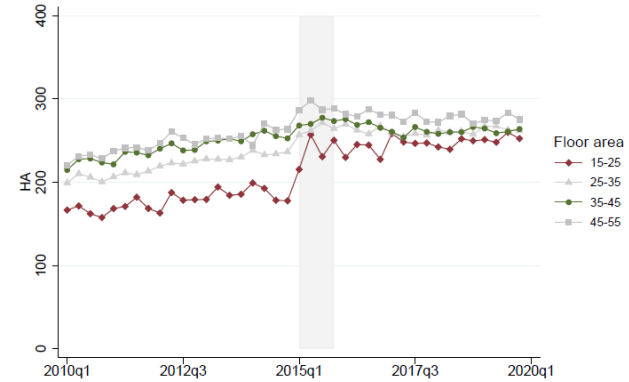
HA by region



(a) Helsinki MA

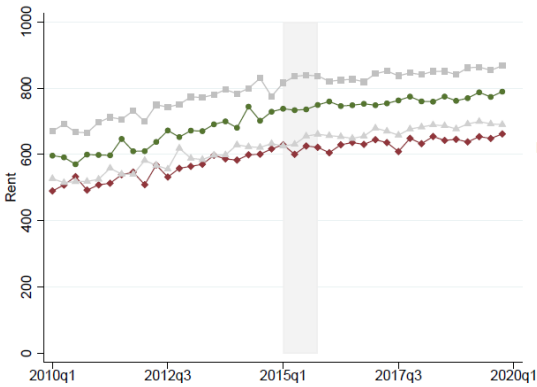


(b) Other large cities

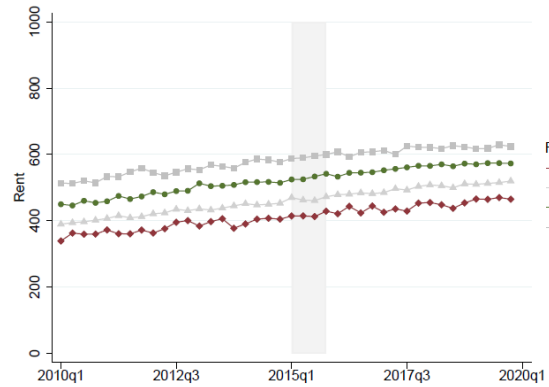


(c) Other Finland

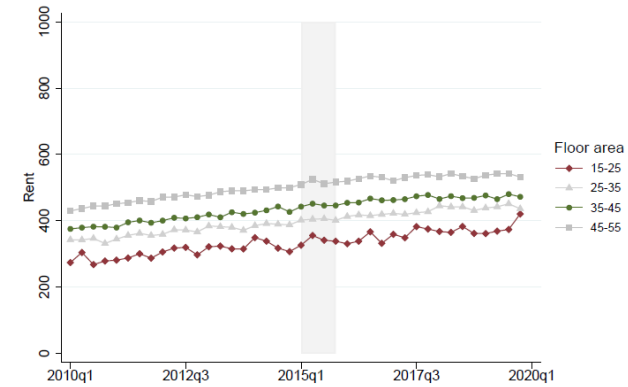
Rents by region



(a) Helsinki MA



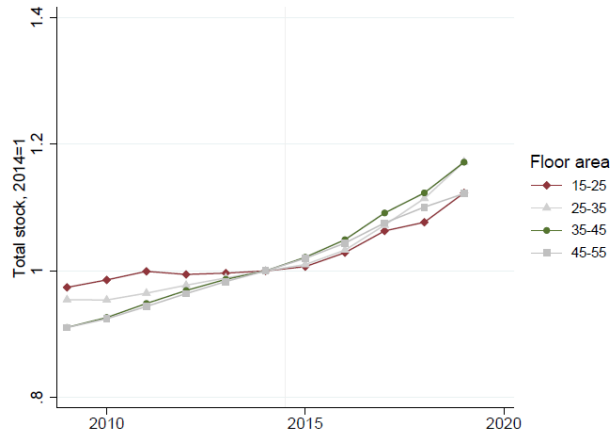
(b) Other large cities



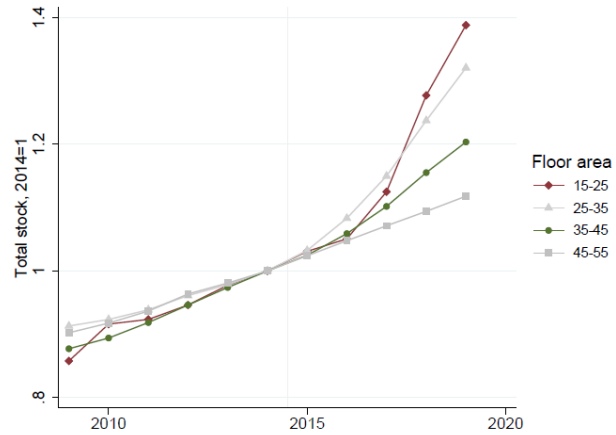
(c) Other Finland

Housing supply by region

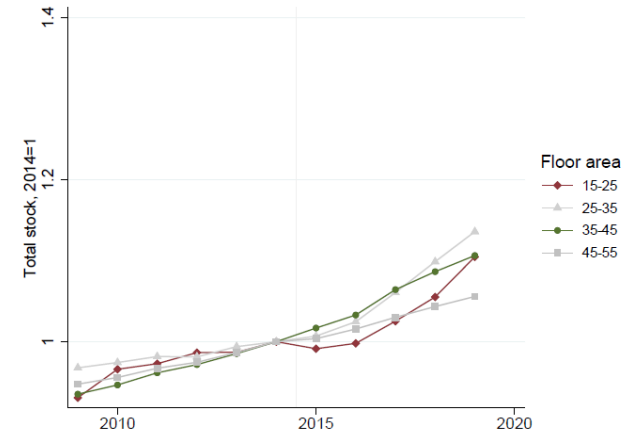
FOLK register data



(d) Helsinki MA

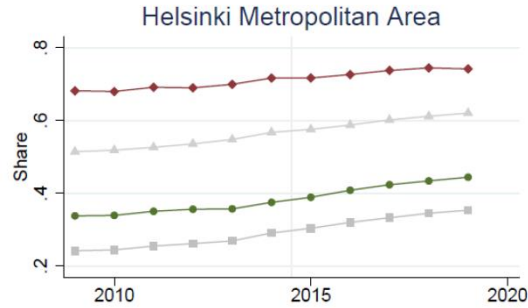


(e) Other large cities

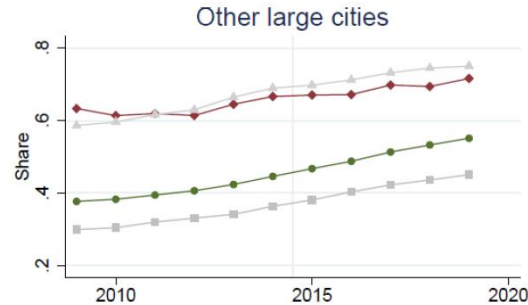


(f) Other Finland

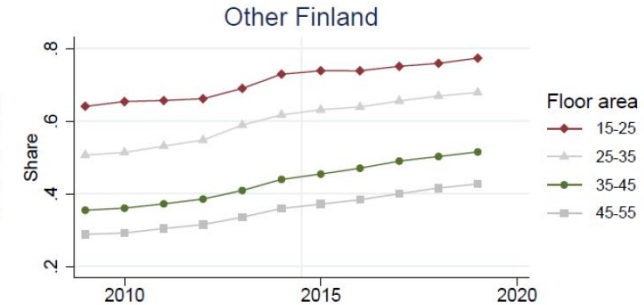
Conversion to free market rental by region FOLK register data



(a) Helsinki MA



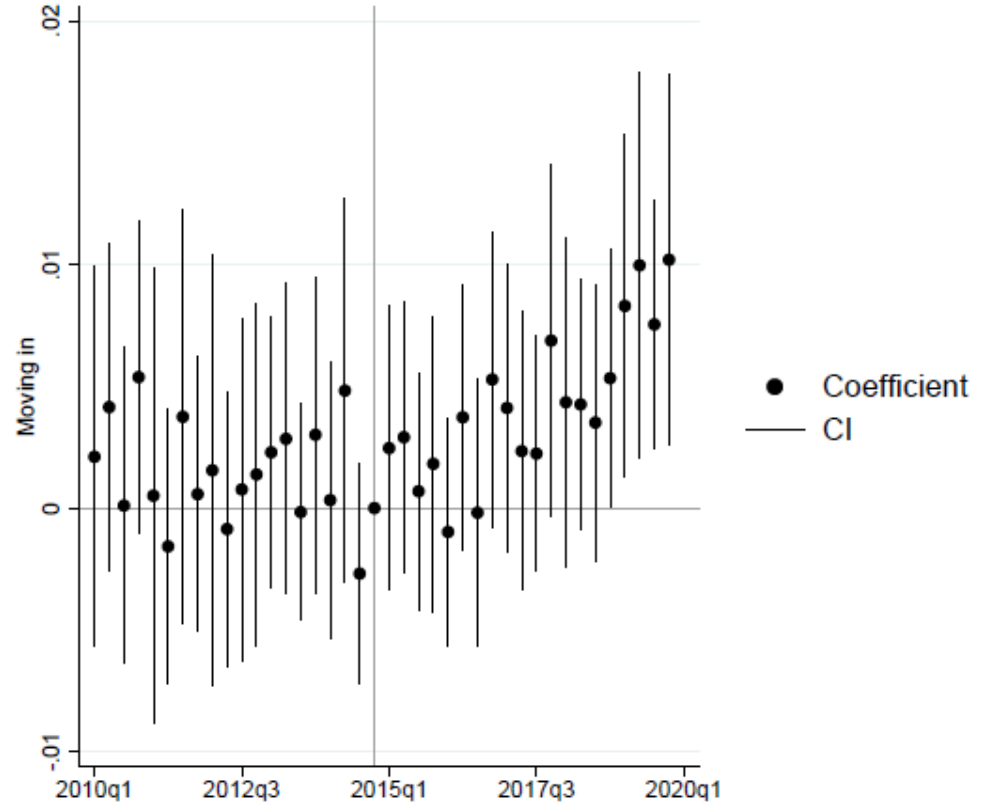
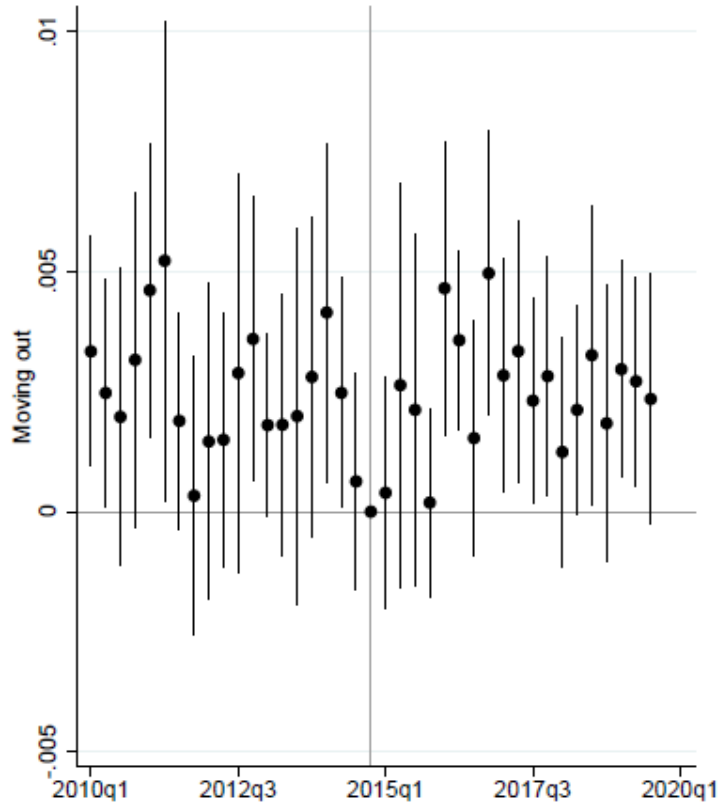
(b) Other large cities



(c) Other Finland

Demand-side responses

15–25m² vs. 35–45m²

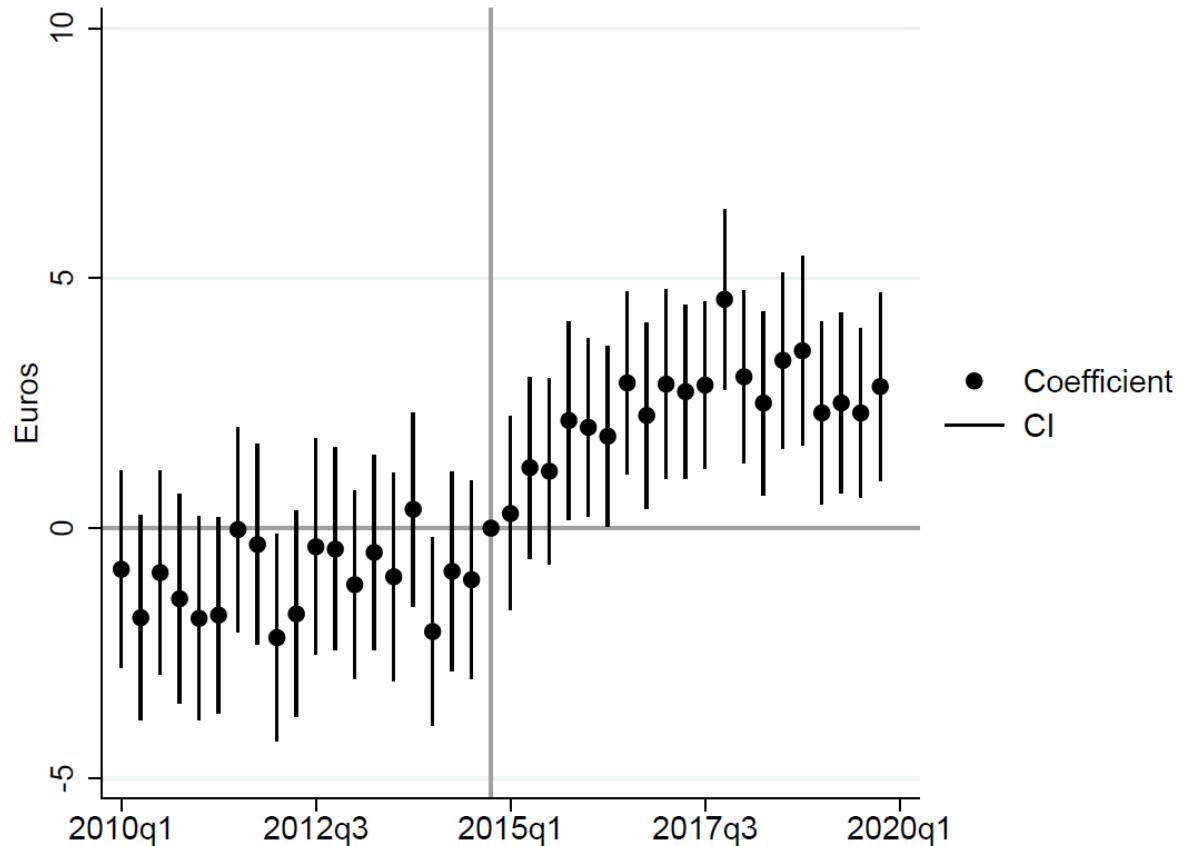


Demand-side responses

Do HA recipients move into units with a large Change in HA?

Why do we see so small demand-side responses?

Most likely due to frictions in the housing market and relatively short HA spells



Conclusions – Eerola et al. (2023)

Do not find evidence of the increased allowances passing through to landlords in the form of higher rents

- The 2015 reform increased monthly HA by some 70 euros in the treatment group (15–25m²) compared to the control group (35–45 m²), a 30 % increase relative to the pre-reform mean
- Despite this sizeable differential change in the HA, the difference in rents remained nearly unaffected
- Same result when applying the “simulated change” measure

Key contributions:

- Detailed register data and ability to follow the same housing units before and after (controls for housing quality)
- Data on (some) demand and supply side responses => unresponsive demand seems to be the key mechanism

Demand or supply subsidies?

Sometimes housing subsidy programs are divided into demand and supply subsidies (instead of tenant- and place-based)

This way of classifying subsidy programs is often misleading

- In many “supply side” programs the aim is to provide affordable housing that cheaper than market rents
- This is often done by somehow basing rents on costs

But this is a demand subsidy!

- You are lowering the price of housing relative to other goods

When the aim is to provide affordable housing through supply side program it usually entails a demand subsidy

The Finnish ARA system

ARA in a nutshell

- Developers get an interest subsidy on construction loan from the government and often a discount from the municipality on lot rent
- Developers and landlords have to pass on these subsidies into lower rents => demand subsidy

Is there a supply subsidy or can we use the ARA system to increase housing supply?

- We are providing subsidies to developers and landlords, but they have to pass them on to tenants
- The system itself does not create additional incentives to build housing compared to a profit maximizing developer

Recap

Rent control destroys welfare due to undersupply and misallocation

There are several ways to subsidize low-income households

- Cash, housing allowance, public housing

Different subsidy types have their pros and cons

- Fairness, transparency etc.
- Which subsidy is the best, depends on what you want to accomplish
- Cannot judge pros and cons without understanding effects of different policies