The impact of taxing vacancy on housing markets: Evidence from France

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Motivation

- Vacancy is a relatively common phenomenon (10% of the stock in Euro Area).
- While some level of vacancy might be unavoidable it is often seen as an obstacle for housing affordability
- Access to housing has worsened in recent years which has encouraged public intervention to tackle vacancy
- This paper: assess the impact of one of these interventions, a tax on vacancy housing

Motivation

Understanding housing vacancies

High vacancy rates in cities are puzzling in a context of

- High housing demand (due to net migration, reduction of credit constraints, ageing, etc.).
- Very inelastic (almost fixed in the short term) supply.
- High population density, land scarcity and rigid construction regulation.

Then, why is there housing vacancy?

- Market frictions (searching costs, transaction costs, uncertainty)
- Voluntary vacancy (inactive units)
  - Strong tenant protection in the French rental market
  - Option problem: uncertainty about the evolution of house prices or rents (Cunningham, 2006)

Motivation

Why aiming at a reduction of vacancy?

- Easier (faster) way to increase available housing units without increasing the housing stock.
- Negative externalities of vacancy (Lee, 2008; Immergluck and Smith, 2006)
  - Reduction of the value of the property
  - Increased perception of insecurity

Countries have used different tools to deal with vacancy

- Decriminalize squatting (Holland)
- Vacancy registration fee (US)
- Vacancy tax (UK, Israel, France, Catalunya, País Vasco)

However, there is still no proper evaluation of a tax on vacancy

This paper

- First attempt to evaluate the impact of a tax on vacancy on housing markets.
- Context: Tax on Vacant Apartments in France (in place since 1999)
- Theoretical Model to understand the creation of vacancy
- Empirical Analysis: Matching Difference-in-Difference Approach
- Results preview: strong and significant negative effect of the tax on vacancy rate. Units are shifted towards primary residences

Theoretical Model

Two sources of vacancy ($\mathbb{V} = v + i$.)

- *Open vacancies* (v): resulting from market frictions. In equilibrium, there is a positive level of structural vacancy (Wheaton, 1990)
- *Inactive stock, voluntary vacancy* (i) :
  - Due to price uncertainty (Cunningham, 2006). Like in 2nd generation Job Search models: first offer rejected in expectation of a better one.
  - Vacancy as an opportunity to improve the quality of a unit or better search the demand
  - Strategic holding of vacant units in the presence of restrictions on rent adjustment (Gabriel and Nothaft, 2001). French regulation is strongly pro-tenant.

Theoretical Model

Adapt Desgranges & Wasmer (2000) search and matching model of the rental market by including a participation decision. Why?

- Account for inactive stock
- In France, owners are exempted from the tax if they are trying to sell/rent the unit

Partial equilibrium S&M model in the short-term

- Owners choose whether or not to participate
- They differ in outside option b_j if they don't participate (i)
- If they do, they have a risk of not finding a tenant (v)

Predictions

- A tax decreases i, increases v, decreases $\mathbb{V}$
- Rents should decrease in the ST and increase in LT

Institutional Setting

Taxe sur les Logements Vacant (TLV)

Timing	- Announced in 1998 - Implemented in 1999
Rationale	- To re-introduce apartments into the market
Vacant Apt.	- Empty of furniture for at least two years
Tax Rate	- 1st year: 10% of the rental value (average of 350€/year, 2% of the average price) - 12.5% the second year and 15% in subsequent years
Large cities	- Municipalities belonging to urban units of more than 200,000 inhabitants - And having a "substantial disequilibrium between supply and demand"

Institutional Setting

Other Taxes: TH and THLV

Taxe d'Habitation (TH)

Application	- Tax administrated at the municipal level
Who pays	- Everyone living in an apartment, regardless of the occupation status (all but vacant apartments)
Tax Rate	- Average France: 8,8% ($\approx$ 7% for primary residence) - Average TLV municipalities: 14,5%
Municipalities	- All

Taxe d'Habitation sur les Logements Vacants (THLV)

Timing	- Approved in 2006 (modified in 2013)
Application	- Tax administrated at the municipal level
Vacant Apt.	- Empty of furniture for at least **five** years
Tax Rate	- Same as TH, average THLV mun: 12,3%
Municipalities	- The ones not concerned by TLV and that approve it at the municipal council

Methodology: Data

FILOCOM dataset

- Exhaustive fiscal dataset: data on all the apartments paying (or not) the Taxe d'Habitation (TH).
- Biannual data from 1995 to 2013. Used from 1995 to 2005.
- Data is aggregated at the municipality level (panel is only possible at the municipal level)

Measure of vacancy:

- All apartments in the dataset not paying the TH (not primary nor secondary residency)

▸ Vacancy in France

Empirical Strategy

Treatment: 300 (without Paris). Control: 623

Empirical Strategy

Difference-in-Difference Strategy

Estimated Model

$$\Delta V_{m,t} = \delta TLV_m + \gamma_1 \Delta X_{m,t} + \gamma_2 X_{m,t-1} + \varepsilon_{mt} \quad (1)$$

Control group: Municipalities belonging to urban units of more than 200,000 inhabitants AND not concerned by the TLV in 1999.

- $\Delta V_{m,t}$: difference in vacancy rate 1997-2001
- $\Delta X_{m,t}$: surface area, rental value, household size, population, annual income and proportion of social housing.
- $\gamma_2 X_{m,t-1}$: specific time trend for each covariate

Empirical Strategy

All Years | With Paris | PS

Empirical Strategy

What about the "substantial disequilibrium between supply and demand"?

Descriptive statistics from 1997

	Treatment		Control				
	Mean	Std Dev.	Mean	Std Dev.	Difference	t-value	p-value
Vacancy Rate	6.32	3.18	5.87	2.88	-0.45	2.14	0.03
Private Vacancy Rate	6.39	3.25	6.05	2.99	-0.34	1.54	0.12
Rental Value (€)	18,200	5,055	15,156	4,487	-3,044	9.26	0.00
Surface Area (m^2)	90.24	13.71	84.63	11.40	-5.61	6.55	0.00
Primary Residence	89.21	9.81	91.60	5.83	2.39	-4.62	0.00
Household Size	2.77	0.27	2.74	0.23	-0.03	1.94	0.05
Average Income (€/year)	22,463	5,587	19,027	5,427	-3,435	8.92	0.00
Population	15,485	42,171	13,090	40,436	-2,395	0.83	0.41
Population Growth 90-97	7.3	11.86	3.96	9.06	-3.34	4.73	0.00
Population Density	1,194	1,499	918	985	-276	3.33	0.00
Social Housing	10.36	12.40	12.86	11.93	2.50	-2.95	0.00

Empirical Strategy

Matching Difference-in-Difference Strategy

Estimation of Propensity Score with Probit Model

$$PS(TLV_m = 1|X_m) = \Phi(\beta X_m) \tag{2}$$

X_m includes pre-reform (1995) levels of: income, surface area, ln(population), % social housing, rental value, household size, [vacancy trend (95-97)]

Observations are then matched through a Kernel Algorithm

Empirical Strategy

Balancing Test for the covariates

	Unmatched /Matched	Mean T	Mean C	Difference	t-value	p-value
Average Income	U	19,015	16,532	2,483	6.95	0.00***
(€/year)	M	19,015	19,523	-508	-1.11	**0.27**
Surface (m^2)	U	89.75	84.06	5.69	6.79	0.00***
	M	89.75	89.65	0.106	0.1	**0.92**
Population	U	15,485	13,090	2,395	0.83	0.41
	M	15,485	15,101	384	0.1	**0.92**
Population Growth	U	7.30	3.96	3.34	4.73	0.00***
	M	7.30	6.26	1.04	1.18	**0.24**
% Social Housing	U	0.10	0.12	-0.02	-2.81	0.01***
	M	0.10	0.10	-0.00	-0.36	**0.72**
Rental Value	U	2,692	2,239	451	9.25	0.00***
	M	2,692	2,671	21	0.34	**0.73**
Household Size	U	2.77	2.74	0.03	1.94	0.05**
	M	2.77	2.77	0.00	0.03	**0.98**
Vacancy Trend 95-97	U	-0.06	-0.21	0.15	1.68	0.09*
	M	-0.06	0.03	-0.09	-0.9	**0.37**

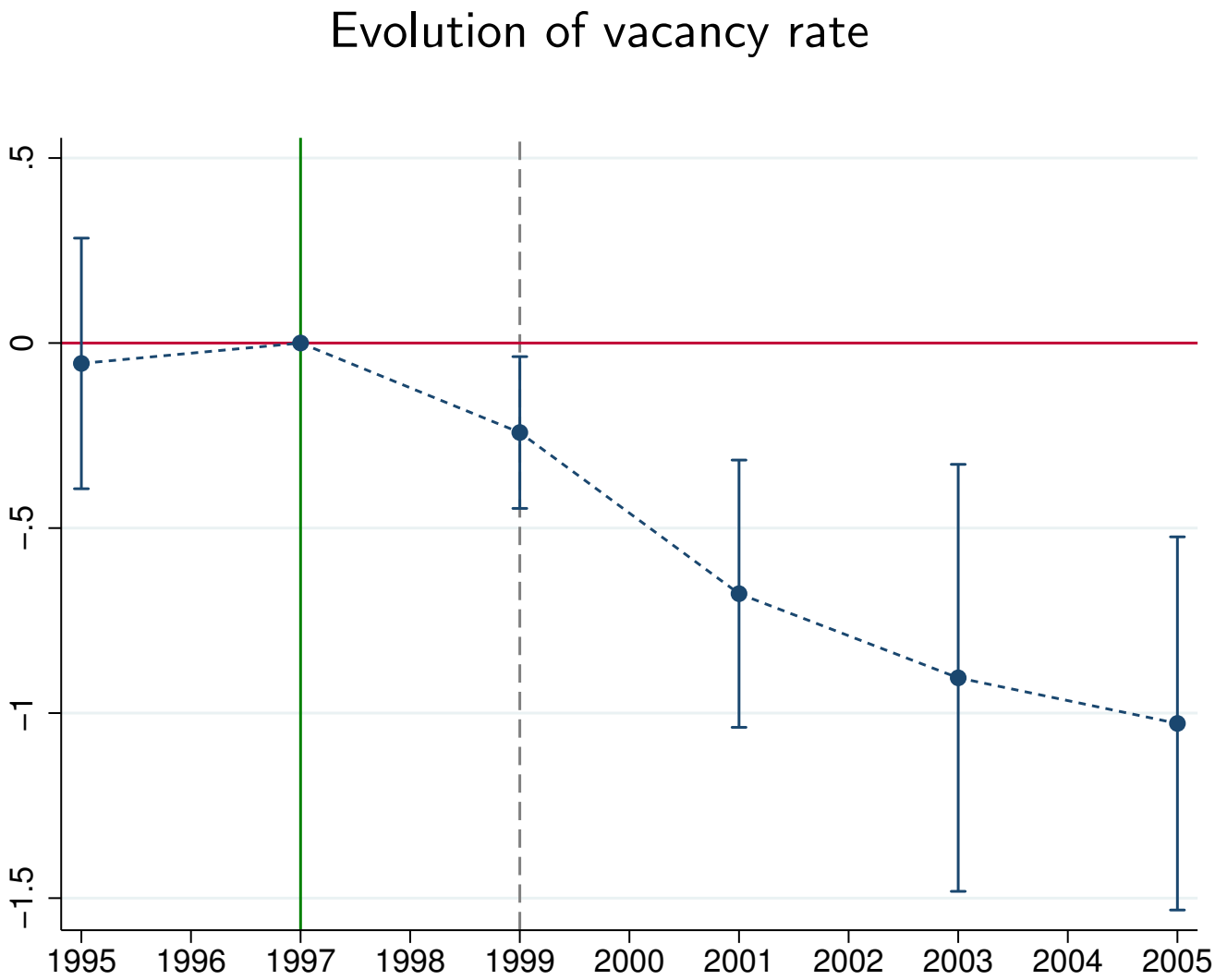
Results

Effect of TLV on vacancy rate, comparing 1997 *vs.* 2001

	OLS				Matching	
	(1)	(2)	(3)	(4)	(5)	(6)
TLV	-0.910***	-0.728***	-0.553**	-0.151	-0.867***	-0.827***
	(0.175)	(0.199)	(0.234)	(0.273)	(0.137)	(0.138)
HighVac				0.166		
				(0.159)		
TLV*HighVac				-0.812***		
				(0.191)		
Housing Controls		X	X	X	X	X
Demographic Controls		X	X	X	X	X
Vacancy Pre-Trend						X
Specific Time Trends			X	X		
N	923	923	923	923	923	923

▸ SRU

Empirical Strategy



▸ Anticipation

Robustness Tests

Robustness Test: Testing the impact of TLV on different samples

	Regions with both T and C units			Adoption of THLV in 2008		
	OLS		Matching	OLS		Matching
	(1)	(2)	(3)	(4)	(5)	(6)
TLV	-0.800***	-0.646**	-0.899***	-0.627***	-0.638***	-0.795***
	(0.233)	(0.344)	(0.189)	(0.145)	(0.137)	(0.132)
Housing Controls	X	X	X	X	X	X
Demographic Controls	X	X	X	X	X	X
Vacancy Pre-Trend			X			X
Specific Time Trends		X			X	
N	515	515	515	901	901	901

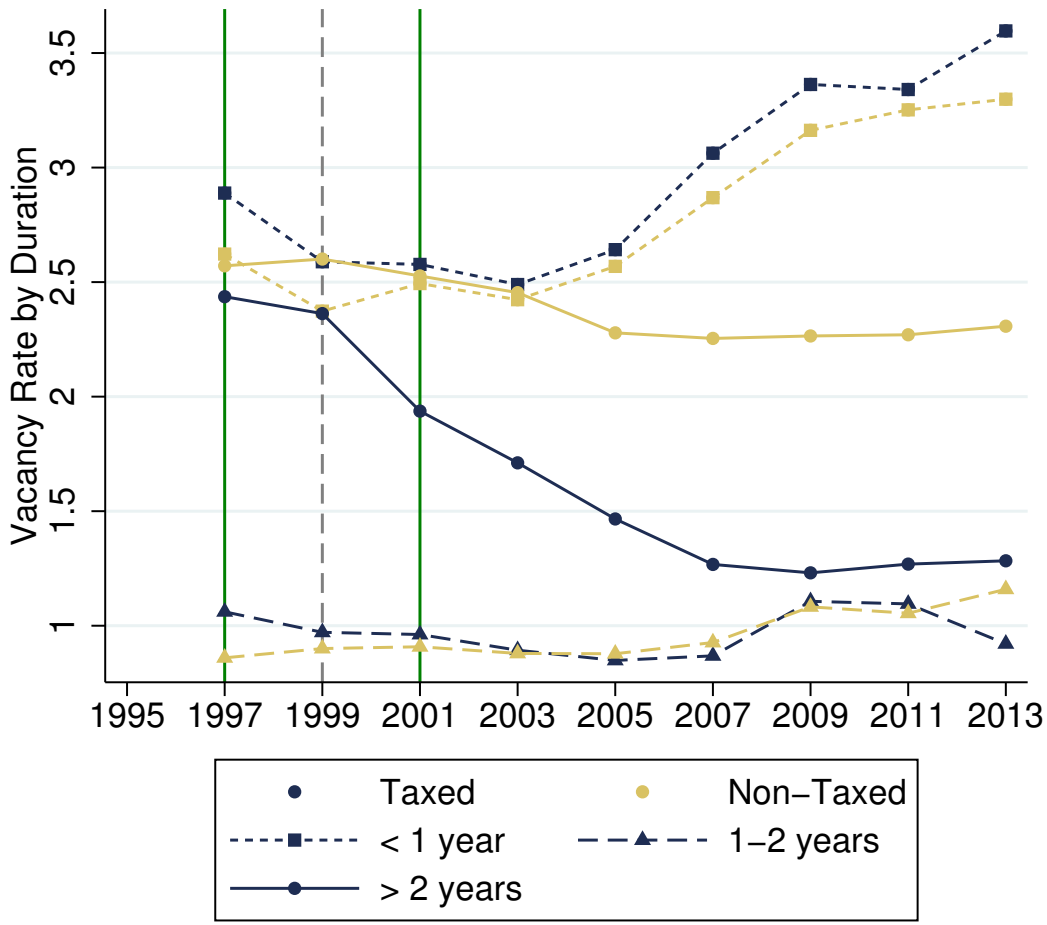
Robustness Tests

Effect of the tax by duration of vacancy

	OLS			Matching		
Vacancy Rate by Duration	$<$ 1 year (1)	1-2 years (2)	$\geq$ 2 years (3)	$<$ 1 year (4)	1-2 years (5)	$\geq$ 2 years
TLV	-0.071 (0.131)	-0.103 (0.065)	-0.380*** (0.122)	-0.133* (0.071)	-0.143*** (0.047)	-0.552*** (0.062)
Mean of C in 1997	2.62	0.86	2.57	2.62	0.86	2.57
Housing Controls	X	X	X	X	X	X
Demographic Controls	X	X	X	X	X	X
Specific Time Trends	X	X	X			
Vacancy Pre-Trend				X	X	X
N	923	923	923	923	923	923

Empirical Strategy

Evolution of vacancy rate



Robustness Tests

Exploit the exogeneity of the timing of the release of a new definition of the urban units with respect to the timing of the tax.

Definition of Urban Units

- Definition of 1990: used to select taxed UU
- Definition of 1999: released some months after the tax

Result: 73 municipalities were added to the taxed urban units, after the implementation of the tax.

Robustness Tests

Robustness Tests

Robustness Tests

Effect of TLV on vacancy rate, bordering municipalities

	OLS			Matching	
	(1)	(2)	(3)	(4)	(5)
TLV	-0.762***	-0.378*	-0.463***	-0.601*	-0.647*
	(0.244)	(0.202)	(0.146)	(0.317)	(0.331)
Housing Controls		X	X	X	X
Demographic Controls		X	X	X	X
Specific Time Trends			X		
Vacancy Pre-Trend					X
N	181	181	181	181	181

▸ social

Understanding the effect

Effect of the tax on different outcomes

PS Matching	Vacancy Rate		Primary Residence		Secondary Residence		Ln(m^2 Price) -residual-		Ownership Changes	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TLV	-0.827***	-1.331***	0.762***	1.230***	-0.010	-0.033	0.060	0.084***	0.607***	0.595***
	(0.138)	(0.168)	(0.139)	(0.177)	(0.076)	(0.093)	(0.038)	(0.029)	(0.177)	(0.174)
Mean of C in 97	6.05		91.60		2.40		830.17		8.36	

PS Matching	New Construction		Household Size		% of Renters		Average Income	
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
TLV	0.408	-0.088	-0.030**	-0.000	0.441**	0.770***	-277.94	710.31***
	(0.248)	(0.275)	(0.014)	(0.012)	(0.179)	(0.236)	(228.49)	(227.71)
Mean of C in 97	2.05		2.74		19.97		19,027	

Post Period	2001	2005	2001	2005	2001	2005	2001	2005	2001	2005
Housing Controls	X	X	X	X	X	X	X	X	X	X
Demographic Controls	X	X	X	X	X	X	X	X	X	X
Vacancy Pre-trend	X	X	X	X	X	X	X	X	X	X
N	923	923	923	923	923	923	783	783	923	923

Conclusion

- Strong, negative and significant direct effect of the TLV on vacancy rate.
- Higher effect in municipalities with an initially higher level of vacancy.
- Results are robust across specifications, sample reduction, choice of control group and within urban units.
- Most of the vacant apartments moved to primary residences
- Effect driven by long term vacancy
- Increase in the proportion of rented units

Describing Vacancy

	1997		2001		2013	
Type	%	Absolute	%	Absolute	%	Absolute
All communes	9.28	2,693,498	8.91	2,690,712	8.96	3,075,124
Urban communes	7.31	1,576,323	7.12	1,600,111	7.80	1,963,005
>200,000 hab	6.63	739,243	6.27	722,752	6.54	829,350
TLV	7,09	498,155	6.38	462,599	6.11	485,267
UU Paris	7.65	357,453	7.05	336,526	6.40	326,205
Paris	14.53	199,846	12.42	171,764	9.12	127,117

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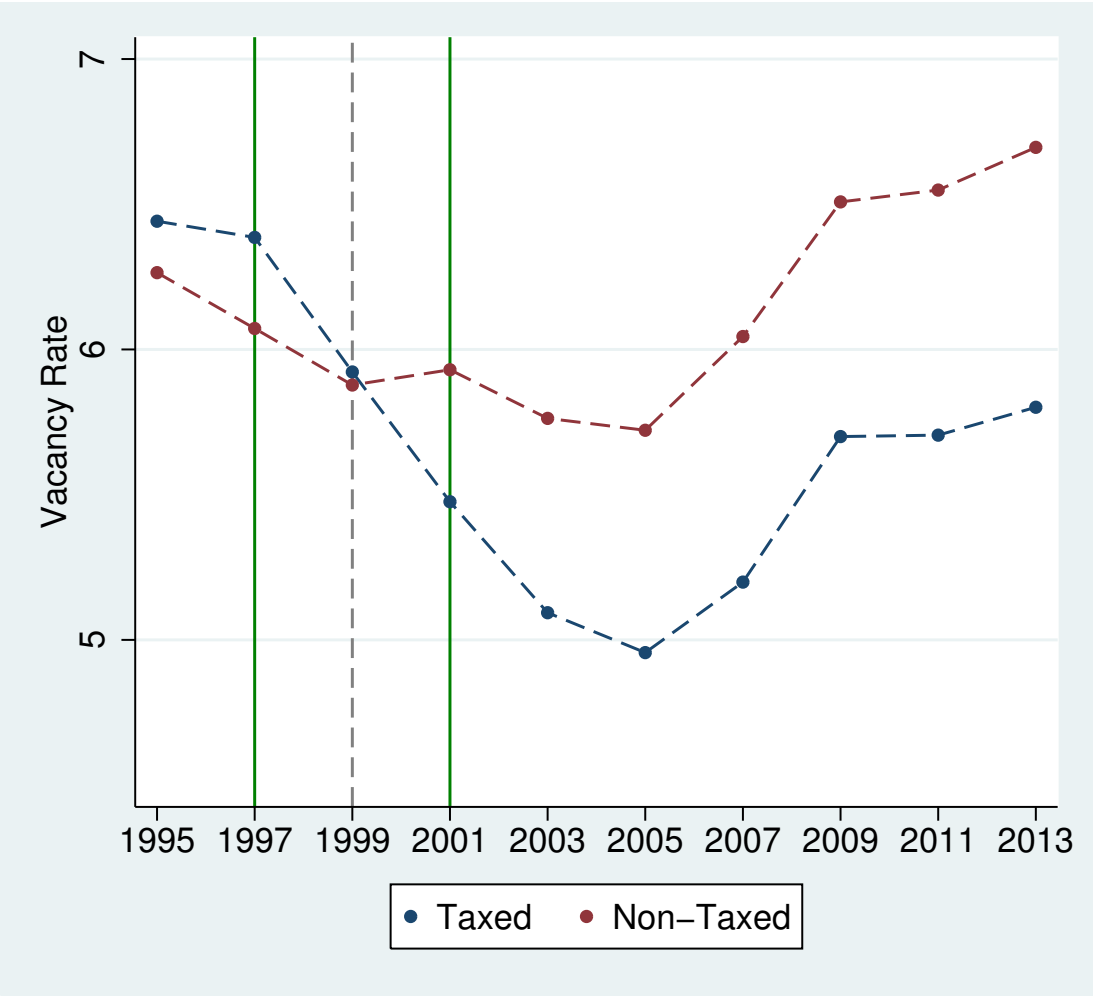
Evolution of vacancy rate



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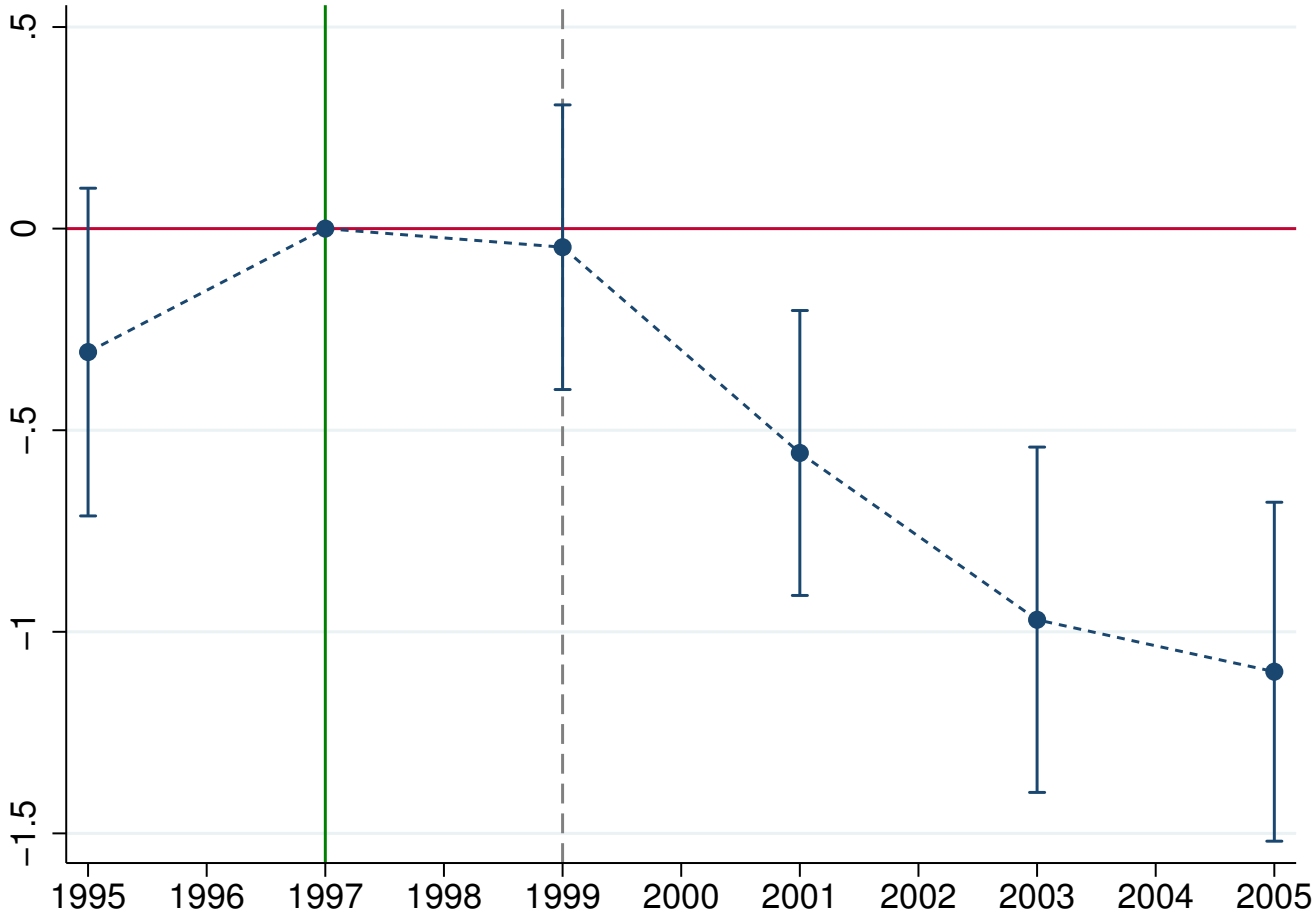
Annex

Keeping Paris urban unit in the sample

Evolution of vacancy rate



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Evolution of vacancy rate
Vacancy Rate
7
6
5
1995
1997
1999
2001
2003
2005
Taxed
Non–Taxed

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Annex: Additional Robustness Tests

Effect of TLV on vacancy rate, results by type of ownership

	Private Vacancy			Social Vacancy		
	OLS		Matching	OLS		Matching
	(1)	(2)	(3)	(4)	(5)	(6)
TLV	-0.728***	-0.553**	-0.827***	-0.314	-0.149	-0.493
	(0.199)	(0.234)	(0.109)	(0.582)	(0.707)	(0.863)
Mean of C in 1997		6.12			5.44	
Housing Controls	X	X	X	X	X	X
Demographic Controls	X	X	X	X	X	X
Vacancy Pre-Trend			X			X
Specific Time Trends		X			X	
N	923	923	923	923	923	923

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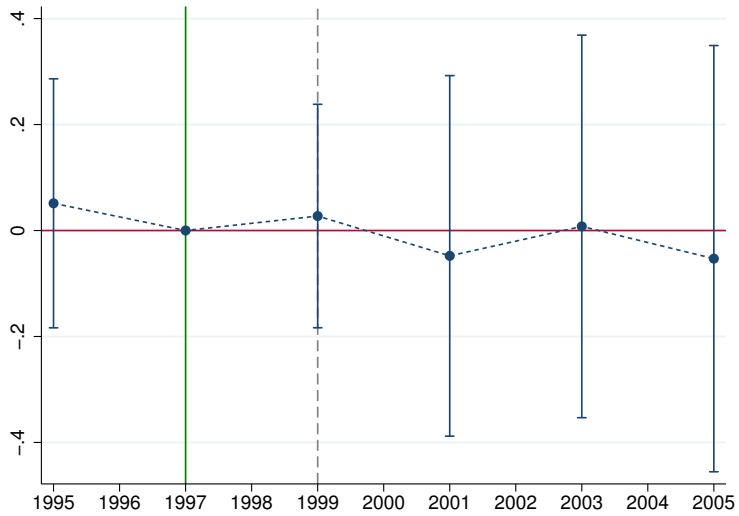
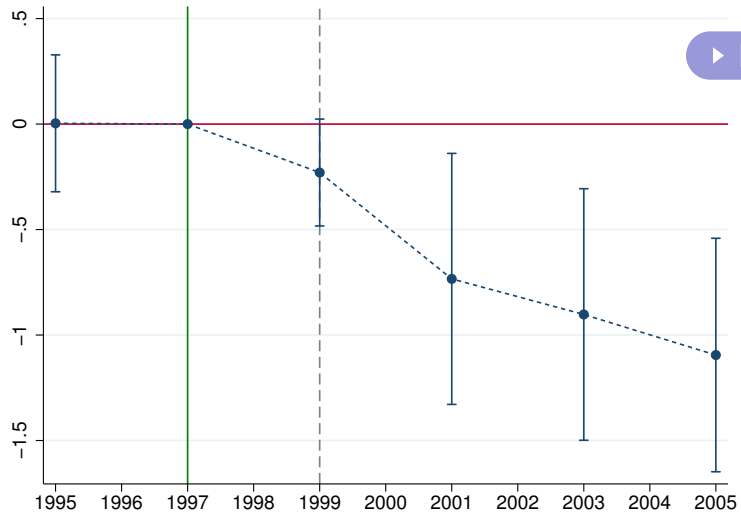
Evolution of vacancy rate
Vacancy Rate
4
5
6
7
1995
1997
1999
2001
2003
2005
Taxed
Non–Taxed in Control
Non–Taxed and <200,000

Annex

Event-study graph for anticipation effect



Control vs. $<$ 200,000



Treatment vs. $<$ 200,000

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