Residential migration and the Covid-19 crisis: Towards an urban exodus in France? [1]

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Journées de Méthodologie Statistique

30th March 2022

1. This work benefited from financial support from Plan Urbanisme Construction Architecture (PUCA)

Context I

Urban exodus, a popular topic in the press:

Since the beginning of the crisis we hear about attractiveness of:

- less dense areas
- large green spaces, bigger homes...

Yet, this is not a new phenomenon

- 57% of people living in urban areas wanted to leave them (IFOP, 2019 [2])
- Main obstacles: lack of services (for 60%), lack of transport infrastructures (for 53%) and difficulties in accessing employment (for 46%)

Increase of remote work

2. https://www.ifop.com/publication/le-retour-a-la-campagne/

Context II

Changes in the rural real estate market:

- Transaction volumes in rural areas have increased by 13 % since March 2020 [3]
- Increase in prices

	1 year	2 years	5 years	10 years
Paris	-2%	-3.2%	19.9%	21.6%
10 largest cities	3.5%	10%	35.1%	36.8%
50 largest cities	3.5%	10%	28.9%	24.3%
Rural Areas	7.9%	11.9%	17.1%	5.8%
France	5%	10.3%	22.1%	16.4%

Table – Real Estate prices evolution in March 2022 - Meilleurs Agents

Do we face an urban exodus?

3. 2021 Meilleurs Agents Press Conference:"Quelles sont les nouvelles tendances pour le marché immobilier ?"

Goal of this paper

Provide some early answers to establish whether the Covid-19 crisis has modified the intentions of French residents to move

thanks to original data based on users' behaviour on the Meilleurs Agents website

Literature

Discrete Choice Models

McFadden (1978), Train (2003), Aissaoui (2016), ...

Household location choices

Trade-off between prices and accessibility to employment

Waddell (1993) ; Srour et al. (2002) ; Rivera and Tiglao (2005) ; Cornelis et al. (2012) ; Ettema (2010)

Spatial and social amenities

Pinjari et al. (2009) ; Kim et al. (2005) ; Bayoh et al. (2006) ; Zondag and Pieters (2005) ; Filion et al. (1999) ; Gueymard (2006) ; De Palma et al. (2005, 2007) ; Goffette-Nagot and Schaeffer (2013)

Household characteristics

Waddel (1993) ; Walker and Li (2007); Habib and Miller (2007)

Covid-19 crisis

Ramani and Bloom (2021), Brueckner et al. (2021)

Contribution

1. First study about the consequences of Covid-19 on residential mobility in France
2. Use of original data from traffic on the Meilleurs Agents platform

Platform Data Description

Meilleurs Agents

- Leader in online real estate estimates and information in France
- Attracts 2.4 million unique visitors per month
- 500,000 online estimates per month

Mobility Path using data from Estimate tool

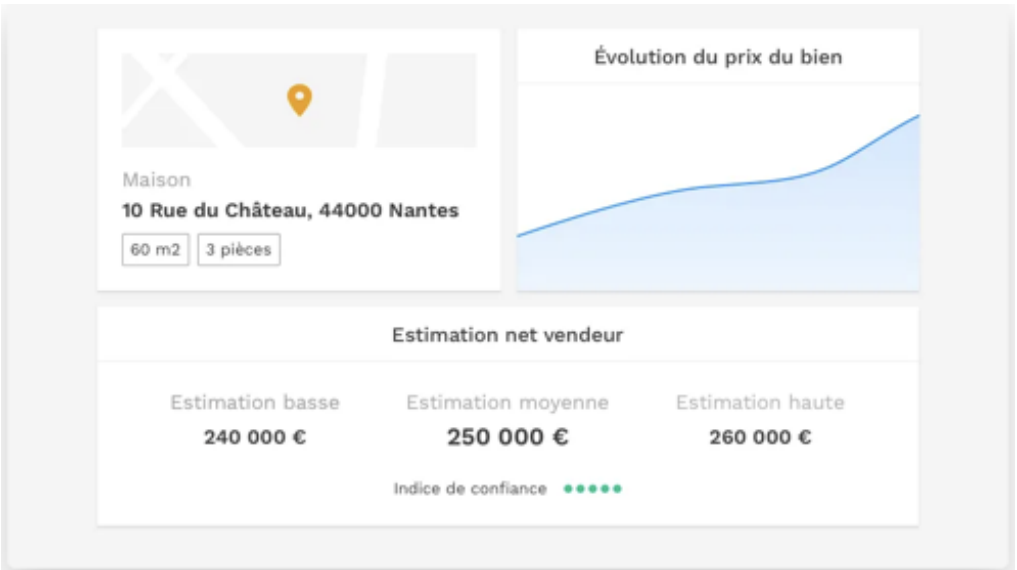
Owner Estimation
Principal residence
Origin City

$\longleftrightarrow$

Buyer Estimation
Searched residence
Destination City

- User's status: Owner or Buyer
- Estimation date
- Dwelling characteristics
- Dwelling location

96,807 links between an estimation of a principal residence owned and a dwelling searched for **77,709** different users

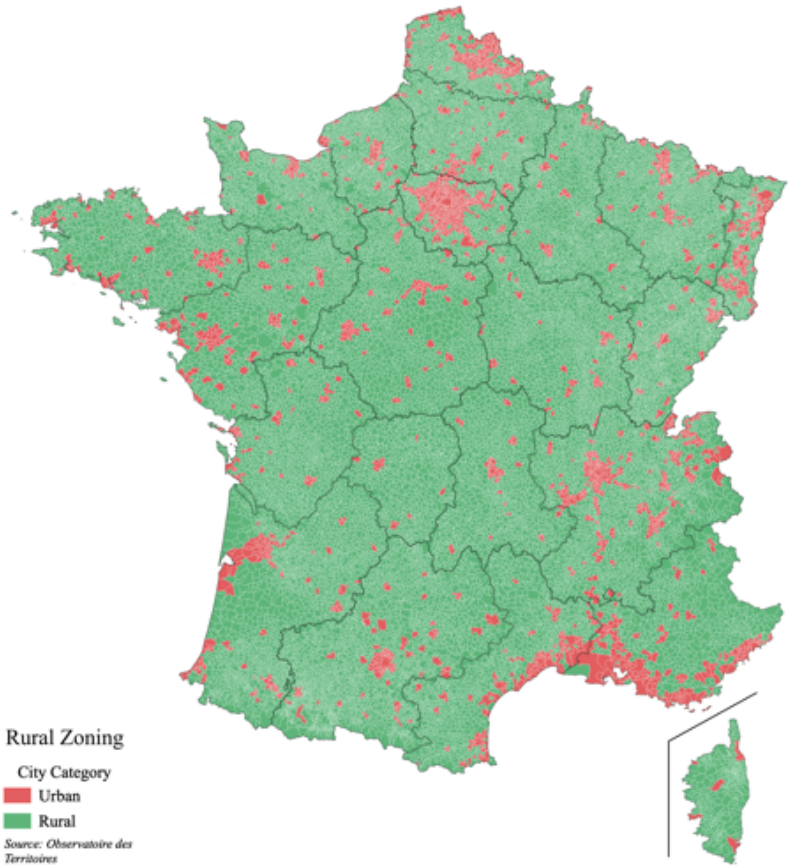


Platform data processing

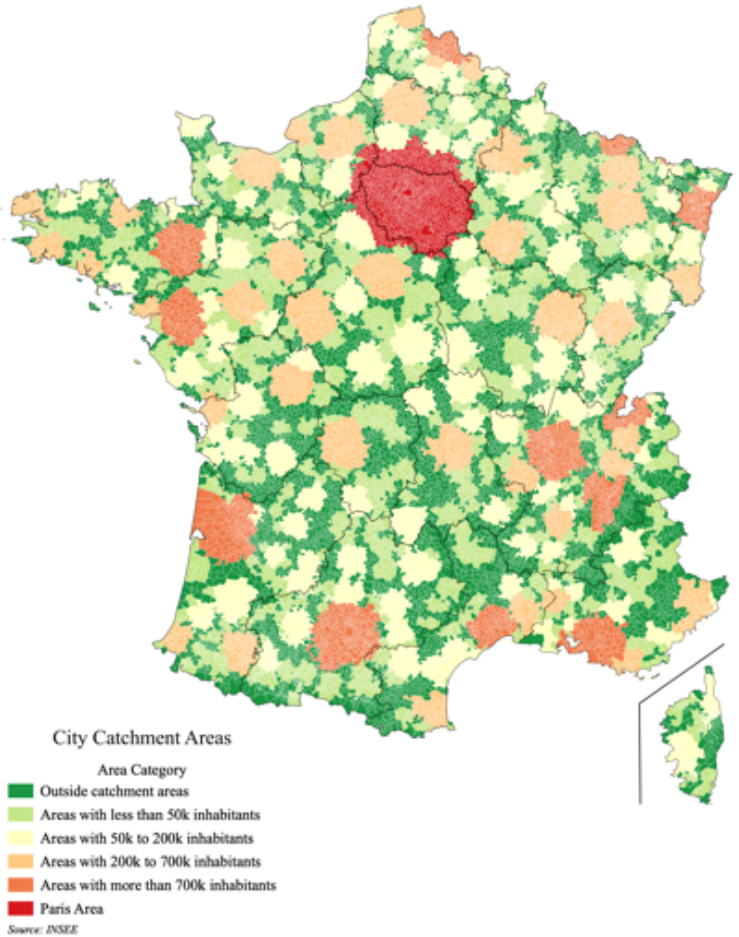
1. Keep buyer estimates from January 1, 2019, to September 20, 2021
2. Remove the outliers
3. Account for multiple estimates by the same user
4. Keep the owner-estimates done for principal residences
5. Merge owner-estimates and buyer-estimates by user ID

Characteristics of the location

Rural Zoning : Observatoire des Territoires



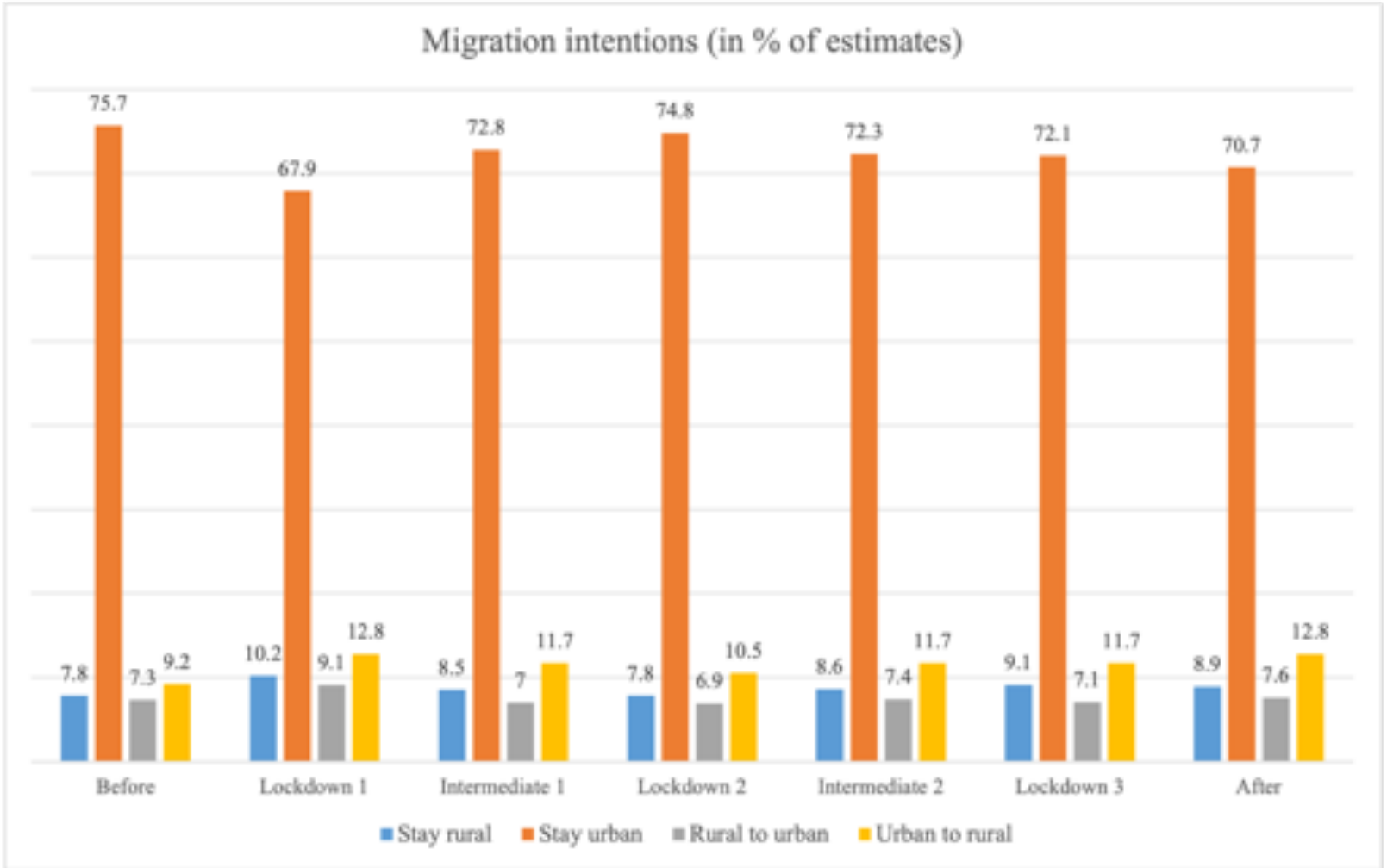
INSEE Zoning in Catchment Areas



+ Socioeconomic data from INSEE about municipalities

Median population income, services and equipment levels, age distribution of the population and structure of the housing stock

Descriptive Statistics

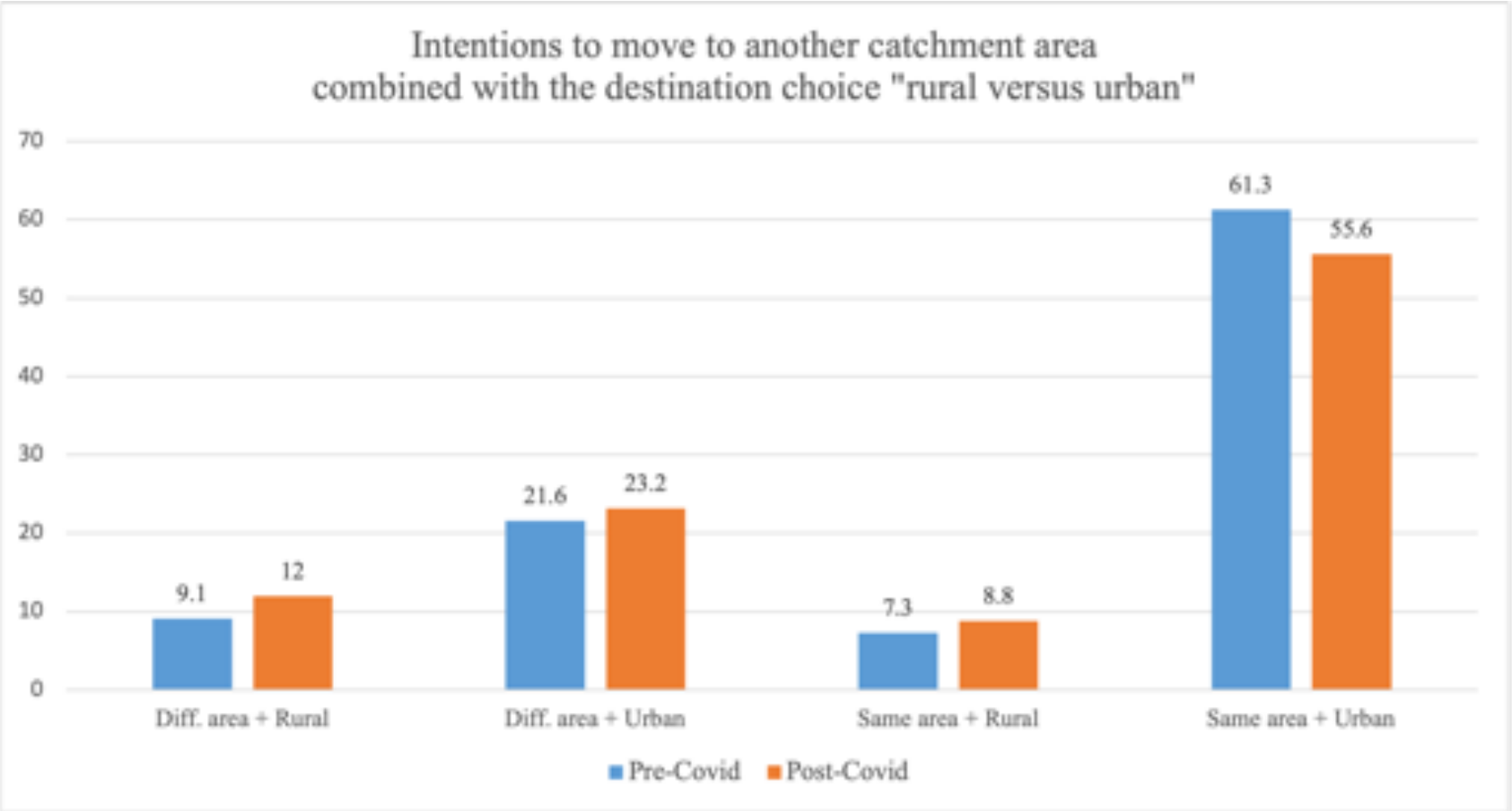


Before: 01/01/2019 to 11/03/2020
Lockdown 1: 12/03/2020 (announcement) to 10/05/2020
Intermediate 1: 11/05/2020 to 27/10/2020

Lockdown 2: 28/10/2020 (announcement) to 15/12/2020
Intermediate 2: 16/12/2020 to 30/03/2021

Lockdown 3: 31/03/2021 (announcement) to 02/05/2021
After: 03/05/2021 to 20/09/2021

Descriptive Statistics



Our approach

Has the Covid-19 crisis modified the residential location behavior of French people ?

For two sub-samples : urban resident and rural resident

1. Logit Models
→ Probability of staying in the same catchment area
→ Probability of choosing an urban destination

2. Nested Logit Model
→ Intentions of residents to move from a set of mutually exclusive alternatives and allowing certain alternatives in the choice set to be correlated

Nested Logit Model

Figure – Diagram of decision tree

Results : probability of staying in the same catchment area

Table – Logit estimation results; Odds Ratios

	Dependent variable: probability of staying in the same catchment area			
	Urban origin		Rural origin	
search_after_covid	0.868***		0.916**	
	(0.019)		(0.036)	
covidconf1		0.933		0.939
		(0.059)		(0.100)
covidinter1		0.916***		0.948
		(0.026)		(0.050)
covidconf2		0.940		0.990
		(0.069)		(0.134)
covidinter2		0.869***		0.977
		(0.029)		(0.055)
covidconf3		0.933		0.875
		(0.047)		(0.087)
covidafter		0.791***		0.858***
		(0.026)		(0.048)
Controls	Yes	Yes	Yes	Yes
Observations	81,646	81,646	15,161	15,161
Log Likelihood	−36,247.950	−36,232.510	−9,543.136	−9,540.378
Akaike Inf. Crit.	72,611.900	72,591.020	19,152.270	19,156.760
Note:				*p<0.1; **p<0.05; ***p<0.01

POST-COVID, the probability of searching in the same catchment area is

- 0.868 times lower for urban residents
- 0.916 times lower for rural residents

Particularly significant decrease after the end of the 3rd confinement

Results : probability of choosing urban over rural

Table – Logit estimation results ; Odds Ratios

	Dependent variable: choose urban over rural			
	Urban origin		Rural origin	
search_after_covid	0.911**		1.041	
	(0.044)		(0.070)	
covidconf1		0.887		1.293
		(0.126)		(0.192)
covidinter1		0.959		0.982
		(0.060)		(0.100)
covidconf2		1.110		1.140
		(0.167)		(0.270)
covidinter2		0.909		0.998
		(0.067)		(0.108)
covidconf3		0.916		0.882
		(0.104)		(0.167)
covidafter		0.857***		1.138
		(0.060)		(0.097)
Controls	Yes	Yes	Yes	Yes
Observations	81,646	81,646	15,161	15,161
Log Likelihood	−36,247.950	−36,232.510	−9,543.136	−9,540.378
Akaike Inf. Crit.	72,611.900	72,591.020	19,152.270	19,156.760
Note:				*p<0.1; **p<0.05; ***p<0.01

POST-COVID, the probability of searching in urban (versus rural) is:

- 0.911 times lower for urban, with an even larger effect after the end of the 3rd confinement

NS different for rural

Results : Nested Logit Model

	Dep. variable: staying in the same attraction area and choosing urban over rural			
	Urban origin		Rural origin	
search_after_covid:diff_aav_urb	0.915		0.975	
	(0.091)		(0.069)	
search_after_covid:same_aav_rur	0.848***		0.901**	
	(0.057)		(0.048)	
search_after_covid:same_aav_urb	0.802**		0.926	
	(0.089)		(0.071)	
covidconf1:diff_aav_urb		0.859		1.406*
		(0.261)		(0.182)
covidconf1:same_aav_rur		0.953		1.064
		(0.162)		(0.133)
covidconf1:same_aav_urb		0.788		1.110
		(0.253)		(0.195)
covidinter1:diff_aav_urb		0.942		0.957
		(0.124)		(0.097)
covidinter1:same_aav_rur		0.862*		0.918
		(0.077)		(0.066)
covidinter1:same_aav_urb		0.872		0.930
		(0.120)		(0.100)
covidconf2:diff_aav_urb		0.981		0.969
		(0.325)		(0.252)
covidconf2:same_aav_rur		0.622**		0.827
		(0.220)		(0.176)
covidconf2:same_aav_urb		0.997		1.238
		(0.314)		(0.250)
covidinter2:diff_aav_urb		0.904		0.903
		(0.137)		(0.106)
covidinter2:same_aav_rur		0.865*		0.916
		(0.087)		(0.073)
covidinter2:same_aav_urb		0.795*		1.001
		(0.133)		(0.111)
covidconf3:diff_aav_urb		0.935		0.964
		(0.209)		(0.161)
covidconf3:same_aav_rur		1.029		0.882
		(0.132)		(0.114)
covidconf3:same_aav_urb		0.856		0.915
		(0.203)		(0.176)
covidafter:diff_aav_urb		0.909		1.000
		(0.120)		(0.094)
covidafter:same_aav_rur		0.811***		0.873**
		(0.076)		(0.064)
covidafter:same_aav_urb		0.725***		0.848*
		(0.117)		(0.098)
Controls	Yes	Yes	Yes	Yes
Observations	81,646	81,646	15,161	15,161
Log Likelihood	−36,247.950	−36,232.510	−9,543.136	−9,540.378
Akaike Inf. Crit.	72,611.900	72,591.020	19,152.270	19,156.760
Note:				*p<0.1; **p<0.05; ***p<0.01

The probability that an urban resident will remain in the same AAV, rather than rural in another AAV, is:

- 0.848 times lower for a rural destination
- 0.802 times lower for an urban destination

Conclusion

Thanks to user's behaviour data on platform Meilleurs Agents, we show that since the beginning of the Covid-19 crisis:

1. French residents search moving further, i.e. in another catchment area
2. Urban French residents search more in rural areas
3. Urban French residents search more in rural areas in another catchment area

Limits

1. We can't study the intentions to move of all French population (renters, first-buyers)
2. Traffic on the Meilleurs Agents website varies over time and across the French territory which can create an issue of representativity
3. We do not observe households characteristics that matter in location choices

Next

1. Carrying out an inference causal analysis of Covid-19
2. Better characterizing changes in the intentions to migrate using a gravity model
3. Going further than urban/rural gradient by introducing more spatial heterogeneity

Thank you!