



The Price Effects of Banning Price Parity Clauses in the EU: Evidence from International Hotel Groups

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The views and opinions expressed in this paper are the authors' and do not necessarily reflect those of the European Commission.

The context: platform regulation

- *Big platforms*: online platforms provide amazing and mostly free services, **but** at various points in the 2010s everyone started realising that these platforms were growing (too) big...
- Problems related to:
 - ① new and old types of abuse of dominant position
 - ② the responsibility of platforms for their products and services
- Need for new platform rules became apparent, but no agreement on how...
- The “EU way”: first pieces of regulation for large online platforms, both coming into full force in 2024, to respond to the two challenges above
 - ① The Digital Markets Act
 - ② The Digital Services Act

More details at: [EC's Shaping Europe's digital future webpage](#)

Price parity clauses: what are they?

An example of Booking.com's wide Price Parity Clauses (wide PPCs)



\$ 200



<https://www.sonesta.com/us/massachusetts/cambridge/royal-sonesta-boston>

≥ \$ 200



≥ \$ 200

Price parity clauses: what are they?

An example of Booking.com's narrow Price Parity Clauses (narrow PPCs)



\$ 200



\$ 180 ?



<https://www.sonesta.com/us/massachusetts/cambridge/royal-sonesta-boston>

≥ \$ 200

▶ A further example of narrow PPCs being respected

Price parity clauses: what are they?

An example of no Price Parity Clauses (no PPCs)



\$ 180 ?



<https://www.sonesta.com/us/massachusetts/cambridge/royal-sonesta-boston>

\$ 170 ?



\$ 180 ?

Price parity clauses: definition and controversies

- Online Travel Agency (OTA) charge a fee (%) to hotels if a room is sold through their website
- The hotels set the final price on the OTAs' websites, on their own website, and on all other sales channels (walk-ins, e-mail, GDS, etc.) - the "agency model" (Johnson, 2017)
- OTAs impose Price Parity Clauses (PPCs, aka platform MFNs) to prevent sellers from selling at lower prices on other sales channels
- A number of high profile cases in the mid-2010s: (i) hotels and OTAs, (ii) Apple e-books, (iii) Amazon use of PPCs in US, (iv) UK price comparison websites
- In August 2015, France was the first country to ban *all types of PPCs* from platforms of the lodging sector; other countries followed from 2016 onward [▶ PPCs in Europe](#)
- Narrow PPCs, which prevent sellers from charging lower prices on the direct channel, are still legal in many EU countries. The DMA (art. 5.3) prevents gatekeeper platforms from using PPCs

The expected impact of removing PPCs

- The competition policy literature (Fletcher and Hviid, 2016; Tirole, 2016; Baker and Scott-Morton, 2018) and antitrust enforcers (e.g., Bundeskartellamt, 2016, European Competition Network, 2017) mostly agrees on the **anti-competitive nature of PPCs**
 - particularly if imposed by large platforms, as Booking.com and Expedia in the EU (90% of the OTA transactions in the period of our study, Hotrec, 2016)
- In this paper:
 - **Main research question:** What is the impact of banning *all types of PPCs* on hotel prices?
 - **Event:** Loi Macron, France, August 2015
 - **Data** from three major international hotel groups, with establishments across the EU
 - Important: monthly transaction data from **all booking channels**
- The removal of PPCs is expected to lead to:
 - (i) lower agency fees
 - (ii) lower prices

▶ price effects

Literature and contribution

- Growing literature on the removal of PPCs, mainly in the lodging sector [▶ More on the literature](#)
 - The focus is mainly on the *probability* that the direct channel is cheaper and other variables (e.g., availability of a hotel on Booking.com)
 - Hunold et al. (2018): Germany bans Booking.com from using PPCs, Kayak data
 - Ennis et al. (2023): removal of wide PPCs from Booking.com, EU vs rest of the World, hotel group data
- Price effects of removing all PPCs:
 - Mantovani et al. (2021): Macron Law, Booking.com data
- This paper:
 - (i) price effects on all booking channels, (ii) transaction data from international hotel groups



Data

- Data from three major international hotel groups
 - Sample of 200 hotels in 74 cities, 9 European countries
 - Unit of observation: hotel, month, booking channel
- Monthly data on prices, sales, booking channels. Period: July 2014 and June 2017
- Booking channels:
 - (i) Online Travel Agencies (OTA)
 - (ii) sales through the direct website of the hotel (WEB)
 - (iii) Central Reservation Office (CRO)
 - (iv) walk-ins, e-mails, phone calls (INN)and others including GDS, Wholesale, etc. [▶ Further details about channels](#)
- Hotel characteristics: star rating, segment (luxury, upper-scale, mid-scale,...), number of rooms, amenities, ...

Empirical strategy

- Difference-in-differences (DiD) design:
 - before and after the event (Loi Macron, 6th August 2015)
 - treated hotels (hotels in France) vs control group (other countries, but Austria and Germany)
- Dependent variables:
 - prices (log of prices per month, hotel, channel \times 100)
 - shares of sales per channel
- Identification assumptions:
 - ① Only hotels in France were affected by the Macron Law, and no other major exogenous shock has affected one of the two groups
 - ② In the absence of the Macron Law, the potential trend of French hotel prices, on average, would follow a similar trajectory to those in the control group (parallel trends)
 - ③ No anticipation in pre-treatment periods
- Estimation methods: (i) Difference-In-Differences (Borusyak et al., 2021)
(ii) Matrix Completion - Nuclear Norm (Athey et al., 2021)

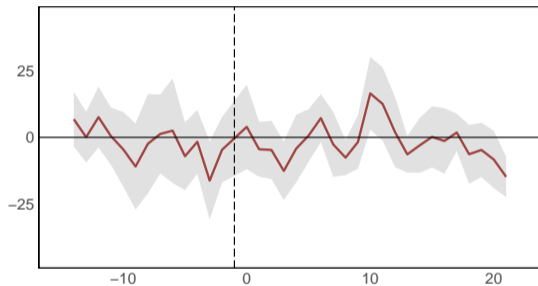
Sample descriptives

	Star Rating	Hotel Capacity	Room Nights	Price	OTA	Share	OTA
				WEB		WEB	OTA
France (n = 4037, T = 15)	4.10 (0.62)	172.67 (104.9)	3220 (2347)	179.63 (82.86)	178.85 (103.2)	16.9%	16.2%
Control (n = 21482, T = ∞)	3.91 (0.61)	199.05 (138.9)	3985 (3456)	127.15 (74.44)	122.86 (76.19)	17.3%	17.7%
Belgium (n = 3141, T = ∞)	3.61 (0.61)	160.33 (87.62)	2919 (1945)	125.41 (37.21)	115.04 (34.94)	17.3%	19.1%
Italy (n = 5373, T = ∞)	4.03 (0.49)	196.8 (113.7)	3728 (2729)	135.42 (74.32)	132.50 (77.85)	15.6%	16.0%
Netherlands (n = 3831, T = ∞)	4.10 (0.72)	195.35 (103.8)	4032 (2848)	168.75 (118.55)	169.40 (131.8)	15.7%	19.3%
Portugal (n = 2961, T = ∞)	4.06 (0.68)	161.38 (53.87)	3096 (1682)	117.08 (79.11)	116.71 (80.71)	12.7%	17.0%
Spain (n = 3688, T = ∞)	3.76 (0.62)	173.71 (96.54)	3287 (2202)	100.23 (47.10)	100.72 (53.14)	16.2%	11.8%
United Kingdom (n = 6319, T = ∞)	3.97 (0.63)	254.91 (203.8)	5648 (5003)	142.29 (93.41)	135.06 (94.66)	20.0%	20.5%
Overall (n = 36881)	4.00 (0.64)	209.83 (139.9)	4230 (3525)	140.92 (81.29)	136.83 (86.17)	16.6%	18.1%

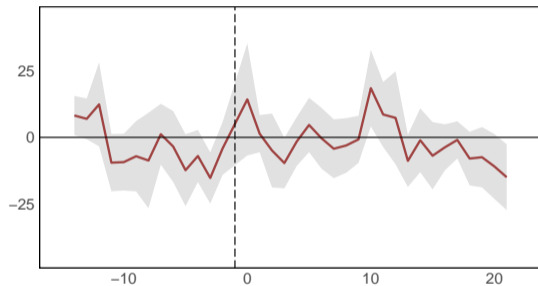
► Shares of all channels

Results - event study: prices on WEB and OTA

(a) WEB Channel



(b) OTA Channel

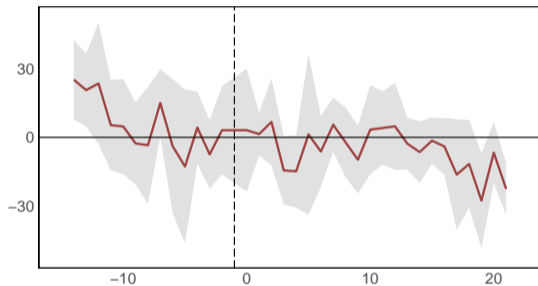


Event Study of the Macron Law — France vs Control

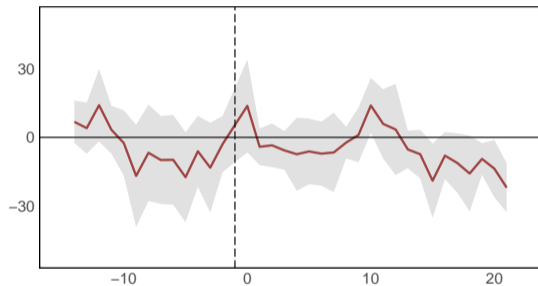
► Event study for MC-NN

Event study: prices on CRO and INN

(a) CRO Channel



(b) INN Channel



Event Study of the Macron Law — France vs Control

► Event study for MC-NN

Price effects of the Macron Law: TWFE-DiD, all channels

	Dependent Variable: Log Price \times 100			
	OTA (1)	WEB (2)	CRO (3)	INN (4)
<i>Panel A. DID Estimates</i>				
τ^{DID}	-1.495 (2.569)	-1.746 (2.194)	-5.062 (2.546)	-5.285 (1.913)
Months FE	✓	✓	✓	✓
Hotels FE	✓	✓	✓	✓
Observations	6,025	6,047	5,555	5,810

Robust SE, clustered at city level

Price effects of the Macron Law: MC-NN, all channels

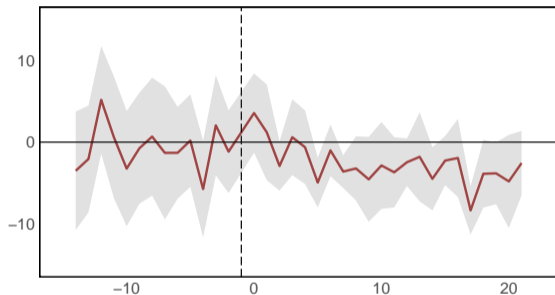
	Dependent Variable: Log Price \times 100			
	OTA (1)	WEB (2)	CRO (3)	INN (4)
<i>Panel B. MC-NN Estimates</i>				
$\tau^{\text{MC-NN}}$	-1.269 (2.615)	-1.572 (2.447)	-4.400 (2.663)	-4.990 (1.983)
Months FE	✓	✓	✓	✓
Hotels FE	✓	✓	✓	✓
Observations	6,025	6,047	5,555	5,810
Robust SE, clustered at city level				

Discussion of the findings

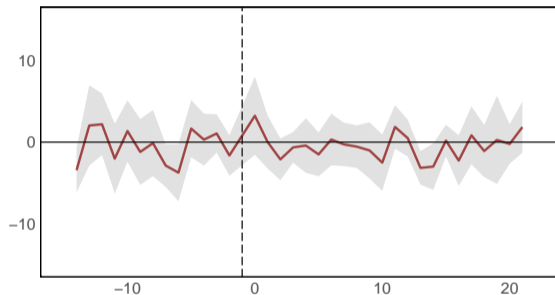
- **Main take-aways:**
 - ① the estimated price effects of removing all PPCs on **observable channels** are *small* in magnitude (DiD: -1.746% WEB, -1.495% OTA; MC-NN: -1.572% WEB, -1.269% OTA) and not significantly different from zero
 - ② more significant (in size and statistically) effects on **unobservable channels** (DiD: -5.062% CRO, -5.285% INN; MC-NN: -4.400% CRO, -4.990% INN)
- Results are robust to: (i) the use of newly introduced estimators in the DiD literature, (ii) test of anticipation effects, (iii) placebo tests (random treatment assignment)
- Several possible explanations/mechanisms:
 - Scarce impact of the ban on the agency fees?
 - Lack of awareness of the policy changes? lack of managerial skills?
 - Discoverability of hotels on platforms: (i) dimming (Hunold et al., 2020), (ii) algorithmic scoring (Peitz, 2022)
 - Heterogeneous consumers and hotel strategy? Possible segmentation between consumers (captive vs searchers)

Mechanisms: the shares of the sales channels, OTA and WEB

(a) OTA Channel



(b) WEB Channel

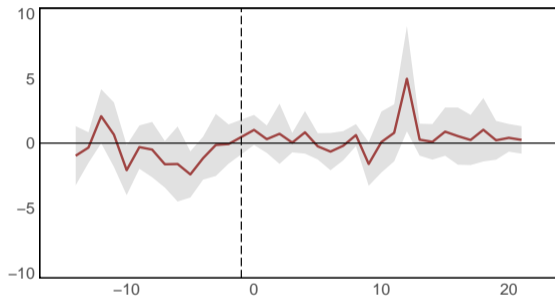


Event Study for Channel Shares — France vs Control

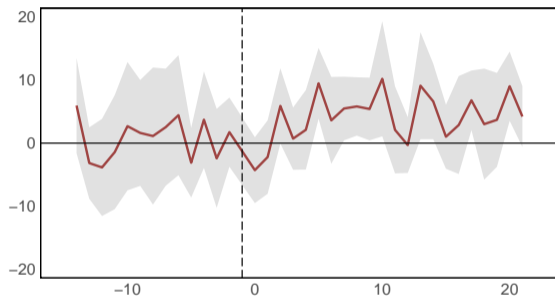
► Event study for MC-NN

Mechanisms: the shares of the sales channels, CRO and INN

(a) CRO Channel



(b) INN Channel



Event Study for Channel Shares — France vs Control

► Event study for MC-NN

Mechanisms: the shares of the sales channels, TWFE-DiD

	Dependent Variable: Channel Shares \times 100			
	OTA	WEB	CRO	INN
	(1)	(2)	(3)	(4)
<i>Panel A. DID Estimates</i>				
τ^{DID}	-2.651 (0.732)	-0.443 (0.738)	0.477 (0.345)	4.107 (1.110)
Months FE	✓	✓	✓	✓
Hotels FE	✓	✓	✓	✓
Observations	6,025	6,047	5,555	5,810

Robust SE, clustered at city level

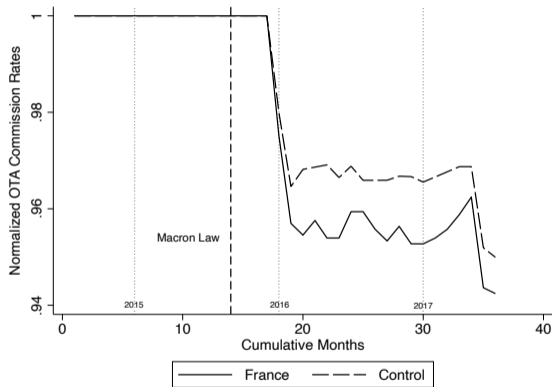
Mechanisms: the shares of the sales channels, MC-NN

	Dependent Variable: Channel Shares \times 100			
	OTA (1)	WEB (2)	CRO (3)	INN (4)
<i>Panel B. MC-NN Estimates</i>				
$\tau^{\text{MC-NN}}$	-2.671 (0.713)	-0.550 (0.761)	0.457 (0.370)	4.163 (1.235)
Months FE	✓	✓	✓	✓
Hotels FE	✓	✓	✓	✓
Observations	6,025	6,047	5,555	5,810

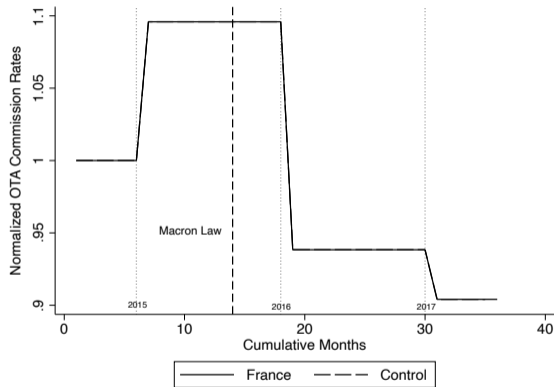
Robust SE, clustered at city level

Some partial evidence about the agency fees

(a) Normalised OTA Commission Rates: Group 1



(b) Normalised OTA Commission Rates: Group 2



Note: the data are highly incomplete on several dimensions

Concluding remarks

- Summary of the results:
 - Small and non-significant price effects of removing all PPCs in France on **observable** channels
 - More significant (in size and statistically) effects on **unobservable** channels
 - Some downwards adjustments of the agency fees, but unclear if only in France or an EU-wide trend
 - Adjustment of shares: switch from OTA to use INN: the finding suggests the presence of segmentation between consumers (captive vs searchers)
 - Hotel online discoverability (dimming, algorithmic scoring) may play a role
- Next steps:
 - Attempt to provide welfare boundaries of the estimated effects (Kang and Vasserman, 2022; Canzian et al., 2022)
 - Dig further in the mechanisms: heterogeneous effects

▶ OTA reliance - prices

▶ OTA reliance - shares

THANK YOU FOR YOUR ATTENTION!

Early working paper version available at:

<https://www.tse-fr.eu/publications/price-effects-banning-price-parity-clauses-eu-evidence-international-hotel-groups>

















New version coming soon!!

Narrow PPCs: an example

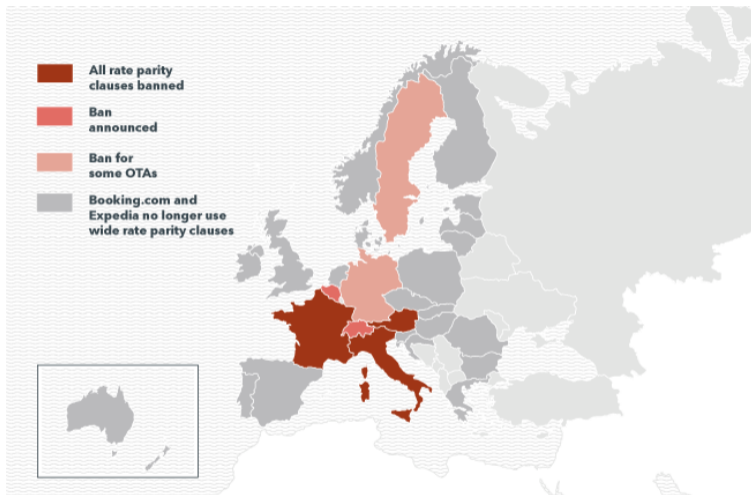
Best Western Hotel Porto Antico Genoa

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 Vio.com	€182*	Visit site
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What's Happening with Rate Parity in the Hotel Industry?



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[Link to the source](#)

A simple model of price parity clauses

- n hotels i ($i = 1, \dots, n$), three channels j ,
 $j = o, w, m$ (i.e., OTA, WEB, INN which includes direct booking via mail, calls, walk-ins).

- Hotel profits:

$$\pi_i(p_{ij}, \mathbf{p}_{-ij}) = p_{io}D_{io}(1 - f_o) + p_{iw}D_{iw} + p_{im}D_{im} \quad (1)$$

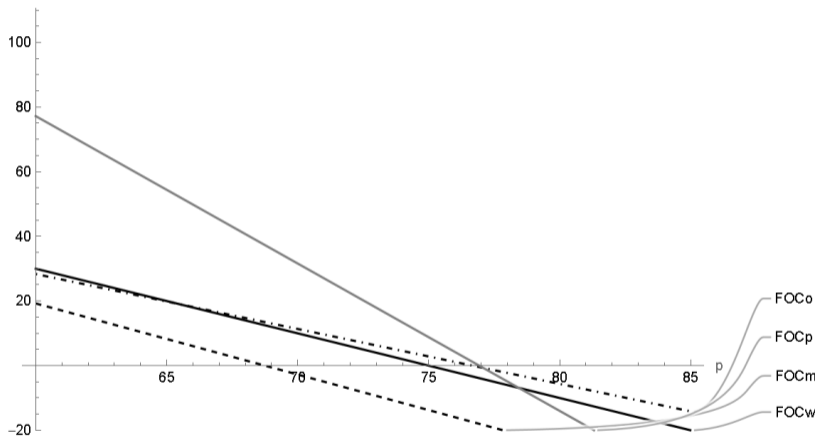
- Comparison: PPCs ($p_{io} = p_{iw} = p_{im}$) vs no PPCs

- Demand (Singh and Vives, 1984; Karle et al., 2020; Calzada et al., 2022):

$$D_{ij}(p_{ij}, \mathbf{p}_{-ij}) = \alpha - \beta_0(1 + \mathbf{1}_m\tau_m)p_{ij} + \beta_1 \sum_{k=1, \dots, n}^{l=w, o, m} p_{kl} \quad (2)$$

- If PPCs are removed, τ_m is the difference in price sensitiveness of hotel i 's consumers opting for channel m , not observable by outsiders

A simple model of price parity clauses



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Further details on the recent literature

- Recent theoretical literature on MFNs/PPCs:
 - Edelman and Wright (2015); Johnson (2017); Johansen and Verge' (2017); Ronayne and Taylor (2019); Wang and Wright (2020); Ronayne (2021), Schlutter (2021)...
- Evidence on PPCs in the lodging sector:
 - Hunold *et al.* (2018): banning PPCs in Germany using metasearch data
 - Cazaubiel *et al.* (2018): degree of substitution between sales channels
 - Ennis *et al.* (2023): effect of removal of wide PPCs on a major chain of hotels, through reduction in prices of loyalty programs
- In other sectors:
 - De los Santos and Wildenbeest (2017), De los Santos *et al.* (2019): US e-book case, agency vs wholesale model, bargaining
 - Jones *et al.* (2019): ban of wide MFNs clauses from UK motor insurance platforms. Effect: -4% on some but not all platforms: change in behavior of insurance providers
 - Song (2021): Amazon removal of PPCs in March 2019, evidence from eBay and Amazon prices. Higher decreases for own products than third party ones

A summary of the booking channels

Booking Channel Information For Chain Hotels

Channel	Ownership	Commission Costs
<u>Online</u>		
OTA (Online Travel Agency)	Third-Party	High
WEB (Official Website)	Individual Hotel	Low
<u>Offline</u>		
INN (Direct Offline Bookings)	Individual Hotel	Low
CRO (Central Reservation Office)	Hotel Chain	Low
GDS (Global Distribution System)	Third-Party	High
WHOLESALE (Wholesalers)	Third-Party	High
OTHER (Other Offline Bookings)	Third-Party	Low

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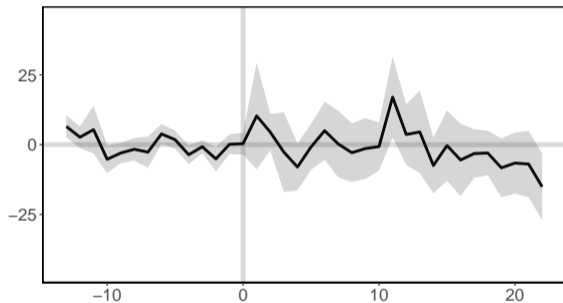
Shares of Room Nights Booked Across Channels By Year

Channel	2014	2015	2016	2017	Average
Online					
OTA (Online Travel Agency)	16.1	17.6	18.8	20.2	18.1
WEB (Web Direct)	15.0	15.9	17.5	18.5	16.6
Offline					
INN (Hotel Direct)	53.8	51.5	48.8	46.2	50.3
GDS (Global Distribution System)	12.0	12.3	12.5	13.4	12.5
WHOLESALE (Wholesale)	2.3	1.8	1.4	0.9	1.7
OTHER (Other Offline Bookings)	0.9	0.9	1.0	0.9	0.9
Total (%)	100	100	100	100	100

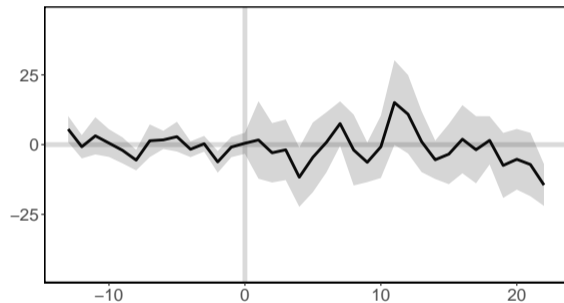
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Event study MC-NN: prices on OTA and WEB

(a) OTA Channel



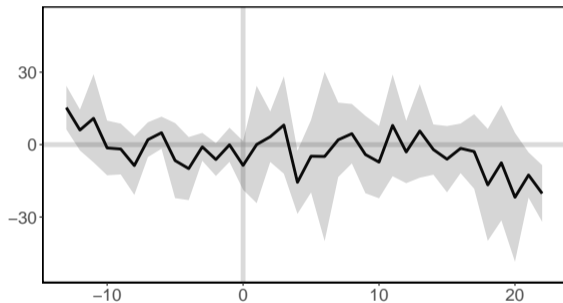
(b) WEB Channel



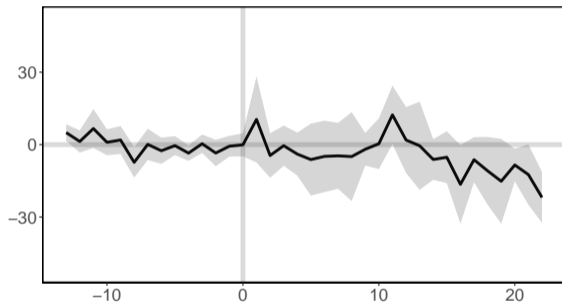
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Event study MC-NN: prices on CRO and INN

(a) CRO Channel



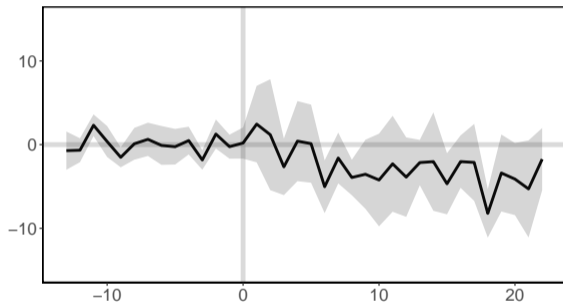
(b) INN Channel



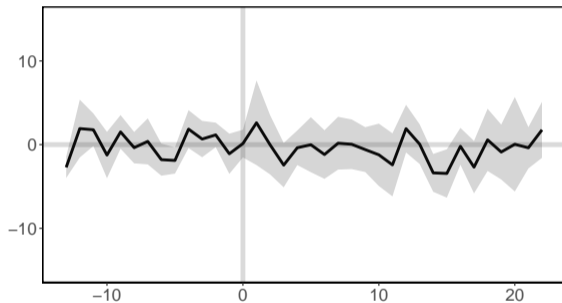
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Event study MC-NN: shares on OTA and WEB

(a) OTA Channel



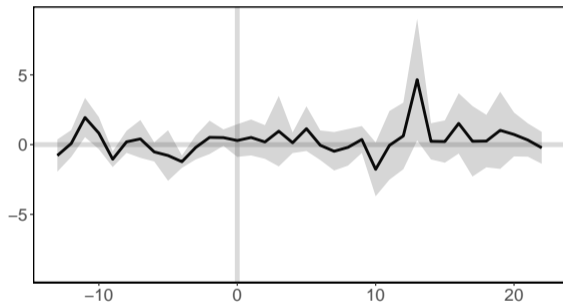
(b) WEB Channel



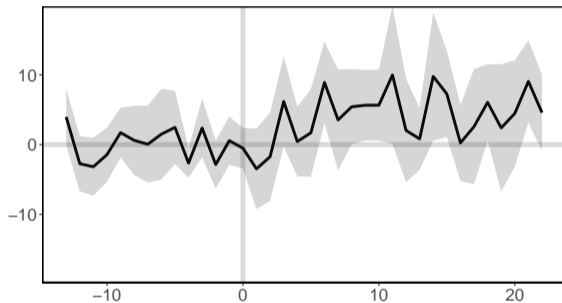
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Event study MC-NN: shares on CRO and INN

(a) CRO Channel



(b) INN Channel



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Heterogeneous effects - pre-treatment reliance on OTAs - prices

	Dependent Variable: Log Price \times 100			
	OTA (1)	WEB (2)	CRO (3)	INN (4)
<i>Panel A. OTA Share Less Than 20%</i>				
τ_{MC-NN}	-1.440 (3.305)	-1.318 (2.729)	-4.469 (2.861)	-6.325 (2.257)
Months FE	✓	✓	✓	✓
Hotels FE	✓	✓	✓	✓
Observations	5,917	5,939	5,464	5,702
No. of Hotels	174	175	174	172
<i>Panel C. OTA Share Greater Than 20%</i>				
τ_{MC-NN}	-0.850 (2.922)	-2.307 (3.263)	-4.360 (3.803)	-1.642 (1.767)
Months FE	✓	✓	✓	✓
Hotels FE	✓	✓	✓	✓
Observations	5,805	5,827	5,363	5,590
No. of Hotels	175	176	175	173

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Heterogeneous effects - pre-treatment reliance on OTAs - shares

	Dependent Variable: Channel Share \times 100			
	OTA (1)	WEB (2)	CRO (3)	INN (4)
<i>Panel A. OTA Share Less Than 20%</i>				
τ_{MC-NN}	-1.659 (1.253)	-1.106 (1.191)	0.455 (0.449)	3.258 (1.554)
Months FE	✓	✓	✓	✓
Hotels FE	✓	✓	✓	✓
Observations	5,917	5,939	5,464	5,702
No. of Hotels	174	175	174	172
<i>Panel C. OTA Share Greater Than 20%</i>				
τ_{MC-NN}	-5.203 (1.776)	0.8476 (1.164)	0.460 (0.410)	6.460 (1.713)
Months FE	✓	✓	✓	✓
Hotels FE	✓	✓	✓	✓
Observations	5,805	5,827	5,363	5,590
No. of Hotels	175	176	175	173