

# Cleanin' It Up:

*Unshrouding Hidden Fees on a Peer-to-Peer Platform*

Kevin Ducbao Tran (University of Bristol)

Leonardo Madio (University of Padua and CESifo)

**Michelangelo Rossi** (HEC Paris and CESifo)

Mark J. Tremblay (UNLV and CESifo)

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# Mandatory Fees Are Everywhere...

... *and Increasingly Regulated*

- Mandatory add-on fees are pervasive on online platforms
  - Ticket resale (Ticketmaster), food delivery (DoorDash), hospitality (Airbnb)
- Fees are often **shrouded** in early stages of search
- Policymakers increasingly mandate **upfront, all-inclusive prices**
  - US: FTC crackdown on *junk fees*
  - EU / UK: legal requirement of *transparent prices*

# Price Transparency Is Now a Global Policy Priority

## Federal Trade Commission Announces Bipartisan Rule Banning Junk Ticket and Hotel Fees

Rule targets bait-and-switch pricing for live-event tickets and short-term lodging

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## Drip pricing: Hidden fees for online customers set to be banned

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PRESS RELEASE | Jul 16, 2018 | Brussels | 3 min read

## EU consumer rules: The European Commission and EU consumer authorities push Airbnb to comply

# What We Know and What We Don't

- Consumers partially ignore hidden fees and taxes
  - Extensive evidence across lab, field, and platform settings
- Transparency can affect equilibrium prices in non-obvious ways
- **What remains underexplored: seller-side attention**
  - Especially on peer-to-peer platforms
  - Many non-professional sellers
  - Decentralized pricing
  - Sellers benchmark competitors using *visible* prices

# How Can Price Transparency Affect Prices?

Fee transparency changes how prices are *perceived* and *benchmarked*:

- *Consumers*:
  - Lower search costs
  - Greater attention to total prices
- *Sellers*:
  - Greater visibility of competitors' **effective prices**
  - Updated reference points for pricing decisions

Price effects depend on who was inattentive *before* transparency

# A Policy-Induced Transparency Shock



## **EU consumer rules: The European Commission and EU consumer authorities push Airbnb to comply**

Brussels, 16 July 2018

*Figure:* European Commission statement on Airbnb fee transparency (2018)

- July 2018: European Commission demands transparent fee display
- September 2018: Airbnb commits to compliance
- January 2019: Transparent prices shown to **EU IP addresses only**

Non-EU users continue to see shrouded prices.

# What Changes for Users (and Sellers)

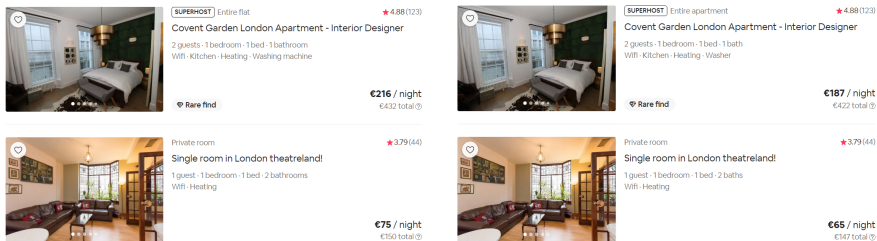


Figure: Airbnb search results in London: EU (left) vs US (right), February 2020

EU users see the **total price per night** upfront; non-EU users do not.

# Host Pricing on Airbnb

Hosts set a two-part tariff:

$$\text{Total Price} = \underbrace{P \times Q}_{\text{visible in search}} + \underbrace{\text{Cleaning Fee}}_{\text{shrouded before '19}}$$

- Base price per night is immediately visible
- Cleaning fees are revealed later in the booking process

# Roadmap

## Data

How Does Fee Transparency Affect Prices?

How Does Fee Transparency Affect Cleaning Fees?

## Conclusion

# Data Sources

We combine three complementary datasets:

- **InsideAirbnb (monthly snapshots)**

- Host-set *asked* prices and cleaning fees
- Listing characteristics

- **AirDNA listings (daily)**

- Bookings and *booked* prices
- Availability and pricing dynamics

- **AirDNA reviews**

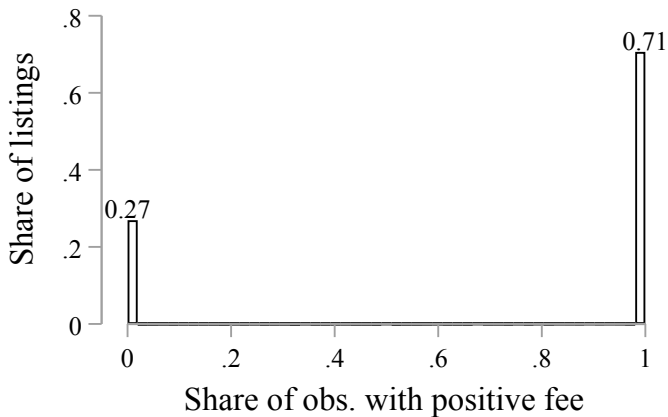
- Guest text reviews
- Self-reported guest location

Allows us to observe **price-setting, transactions,** and **exposure to EU users**

# Sample Construction

- London listings, 2018–2019
  - Largest Airbnb market in Europe
  - Clean exposure to EU transparency policy
- Unit of observation: listing × month
- Include listings:
  - Available at least one day in the month
  - Entire homes and private rooms ( $\approx 98\%$  of sample)

## A Striking Pattern in Fee-Setting



*Figure:* Share of months with a positive cleaning fee, by listing

Almost all listings either **always charge a fee** or **never do**

# What Distinguishes Zero-Fee Listings?

- About **27%** of listings never charge a cleaning fee
- These listings appear **less professional**:
  - Simpler pricing strategies and fewer price changes
  - Fewer bookings, lower revenue, fewer reviews
  - More likely private rooms, less likely Superhosts
- No evidence of lower cleanliness ratings

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# How Can Fee Transparency Affect Prices?

Standard intuition:

- When fees become salient, hosts reduce add-on fees
- Base prices may adjust to compensate

**Our mechanism adds a new channel:**

- Some hosts were inattentive to competitors' fees
- With transparency, they *discover* competitors are more expensive
- **Optimal response: increase the base price**

The magnitude depends on how relative affordability changes

# Benchmarking Against Competitors

Consider listing  $i$  in month  $t$ :

- Hosts compare their prices to nearby comparable listings
- Price comparison ignoring fees:

$$\Delta p_{i,t} = p_{i,t} - \tilde{p}_{i,t}$$

- Price comparison including fees:

$$\Delta tp_{i,t} = tp_{i,t} - \tilde{tp}_{i,t}$$

- where  $tp_{i,t} = p_{i,t} + \frac{fee_{i,t}}{n}$

Before transparency, hosts effectively focus on  $\Delta p_{i,t}$ .

# Change in Perceived Affordability

Define:

$$\delta_{i,t} = \Delta p_{i,t} - \Delta t p_{i,t}$$

- $\delta_{i,t}$  captures how transparency changes relative prices
- Driven by own fee relative to competitors' fees
- Larger  $\delta_{i,t}$ :
  - Listing appears **more affordable** under transparency
  - Stronger incentive to raise base price

# Operationalizing Relative Affordability

- Convert cleaning fees to a per-night equivalent
  - Divide by average pre-2019 booking length
- Benchmark listings against nearby comparables
  - Control for reviews, Superhost status, listing type
  - Geographic area and month fixed effects
- Use residual price differences to construct  $\delta_i$ 
  - $\delta_i > 0 \Rightarrow$  scope for price increase

# Zero-Fee Listings Become More Affordable Under Transparency

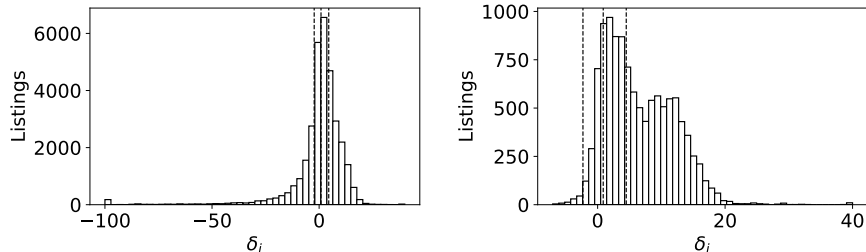


Figure: Distribution of  $\delta_i$  for all listings (left) and zero-fee listings (right)

# Empirical Strategy: Treatment Definition

- **Treatment group:** listings whose perceived affordability increases the most
- Defined as top quartile of  $\delta_i$  ( $\delta_i > 4.5$  - measured in 2018)
- Compare price changes:
  - Before vs after January 2019
  - Treated vs other listings

# Difference-in-Differences and Event Study

$$y_{it} = \alpha + \beta 1(\delta_i > 4.5) \times 1(t \geq \text{Jan 2019}) + \mu_i + \gamma_t + \epsilon_{it}$$

Event study to assess pre-trends and dynamics:

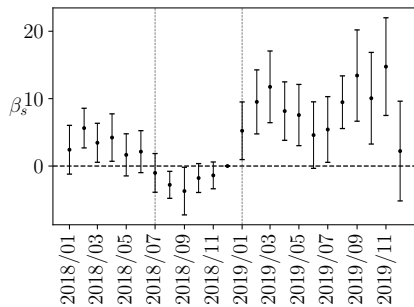
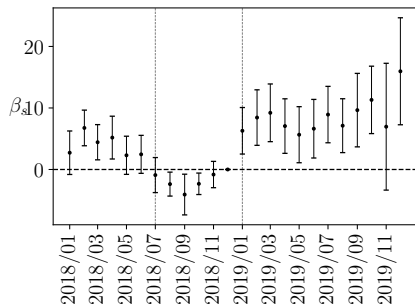
$$y_{it} = \sum_s \beta_s 1(\delta_i > 4.5) \times 1(t = s) + \mu_i + \zeta_{g(i)t} + \epsilon_{it}$$

# More Affordable Listings Increase Prices

	Price net of fee		Price incl. fee	
	(1)	(2)	(3)	(4)
Post-policy	6.491*** (0.481)	6.543*** (0.497)	6.655*** (0.475)	6.719*** (0.497)
Post-policy × “More affordable”	<b>7.784***</b> (1.680)	<b>7.841***</b> (1.686)	<b>7.915***</b> (1.702)	<b>7.930***</b> (1.705)
Listing FEs	✓	✓	✓	✓
Month FEs	✓	✓	✓	✓
Large geo-month FEs	✓		✓	
Small geo-month FEs		✓		✓
Adj. $R^2$	0.85	0.84	0.74	0.72
Avg. price	119.47	119.47	125.37	125.49
Observations	1,030,459	1,030,459	860,709	859,245

≈ 6–7% price increase for listings whose affordability increases most

# No Pre-Trends, Sharp Post-Policy Adjustment



- Prices diverge immediately after transparency is introduced
- Effect on price net of fee (left figure) and price including fee (right figure) have coherent dynamics

# Fee Transparency and Prices: Summary

- Listings whose perceived affordability increases raise prices after transparency
- Consistent with a seller inattention mechanism:
  - Adjustment is immediate
  - Concentrated among less professional hosts
- Not driven by alternative explanations:
  - No adjustment by Superhosts
  - No adjustment in NYC, where fees remain shrouded

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# Identification: Differential Exposure to Transparency

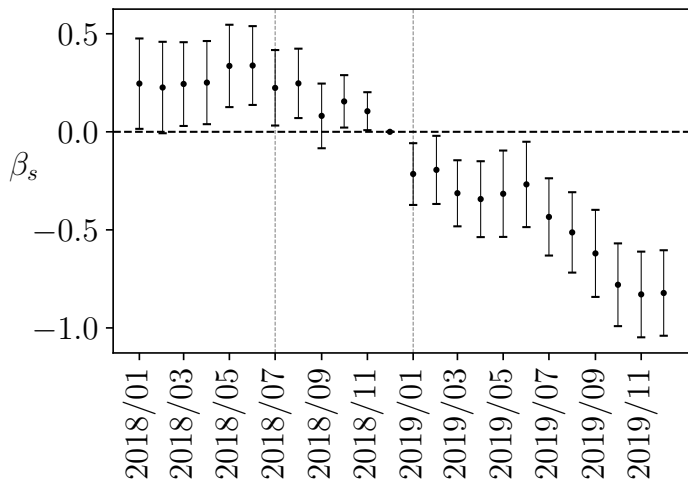
- The policy makes cleaning fees salient only to **EU users**
- Listings with more EU demand face a stronger incentive to adjust fees
- Identification:
  - Compare listings with high vs. low EU exposure (pre-2019)
  - Before vs. after January 2019
  - Controlling for fine geographic time variation
- Key assumption:
  - In the absence of transparency, fee trends would be parallel
  - Assessed using event studies

# High EU Exposure Listings Reduce Cleaning Fees

	(1)	(2)
Post-policy	1.97*** (0.06)	1.99*** (0.06)
Post × High EU exposure	<b>-0.65***</b> (0.08)	<b>-0.67***</b> (0.08)
Listing FEs	✓	✓
Month FEs	✓	✓
Geo-month FEs	LAD	LSOA
Adj. $R^2$	0.98	0.98
Observations	1,030,459	1,030,459

High-exposure listings reduce cleaning fees by about 0.6 GBP post-transparency.

# Cleaning Fees Adjust Immediately After Transparency



No evidence of differential pre-trends

# Fee Transparency and Cleaning Fees: Summary

- Listings with higher exposure to EU travelers reduce cleaning fees after transparency
  - Magnitude: 0.5–0.7 GBP (about 1–1.5% of average fee)
- Effects are stronger for more professional hosts
  - Superhosts reduce fees by about 1 GBP
- No similar adjustment outside the EU
  - London vs. NYC comparison

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## Conclusion: Main Findings

- Fee transparency changes both **prices** and **fees** on Airbnb
- Listings whose perceived affordability increases with transparency:
  - Increase base prices
- Listings facing greater exposure to EU travelers:
  - Reduce cleaning fees after transparency
  - Fee reductions are larger for Superhosts
- These effects emerge immediately after transparency is introduced

# Interpretation and Implications

- Evidence is consistent with **seller inattention** prior to transparency
  - Some hosts ignore fees when benchmarking against competitors
  - Transparency reveals higher competitor prices, inducing price increases
- Transparency can therefore have **non-monotonic effects** on prices
  - Lower fees but higher base prices
  - Winners and losers among consumers
- Policy implications:
  - Transparency affects both sides of the market
  - Distributional effects depend on who is attentive