

Apartment Competition and the *RealPage* Case

*By: Michael Doane, Luke M. Froeb, D. Daniel Sokol &
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I. Introduction

Between October 2025 and early 2026, the DOJ settled with RealPage and two of its largest landlord customers, and a federal court preliminarily approved twenty-six class-action settlements with renters, with no fines on RealPage, no admission of wrongdoing, and no judicial finding of a Sherman Act violation. The central question of whether algorithmic pricing raised rents remains unanswered.

If the answer is “not by much,” then both the theory of harm and the remedies on offer deserve closer scrutiny.

The best empirical estimate in the published literature puts the rent increase from common RealPage adoption at roughly 1.5 percent.¹ That is not zero, but it is an order of magnitude below the double-digit

overcharges typically associated with cartels. In this paper we show that the peculiar features of apartment markets can account for this difference.

II. What Makes Apartments Different

Antitrust analysis is case-specific.

Competition takes many forms (auctions, bargaining, price, quantity, advertising), and each industry has its own peculiar features. Enforcers ask how firms compete and how competition would change under the theory of the case. Economists answer this formally by building a model of observed competition and using the model to forecast the unobserved counterfactual.²

Apartments have two peculiar features that shape competition: fixed capacity and uncertain demand.

Fixed capacity. Once an apartment is rented, it is unavailable until the tenant leaves. If one landlord raises price and rivals are nearly full, the rivals cannot absorb the diverted demand. This makes them worse substitutes, so the gains to coordination

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“Algorithmic Pricing When Capacity Turns Over: Competition, Collusion, and Information Sharing,” is available on SSRN. Froeb & Tschantz have consulted on algorithmic price-fixing cases; the opinions expressed are solely those of the authors.

¹ Sophie Calder-Wang & Grace H. Kim, Algorithmic Pricing in Multifamily Rentals: Efficiency Gains or Price Coordination? (SSRN Working Paper No. 4403058, 2024).

² Gregory J. Werden, Luke M. Froeb & David T. Scheffman, *A Daubert Discipline for Merger Simulation*, 18 Antitrust 89 (2004).

shrink. By contrast, in markets where rivals can absorb diverted demand, coordination has more leverage: Assad et al. found that algorithmic pricing raised German retail gasoline margins by roughly 28 percent in duopoly markets where both stations adopted.³

Uncertain demand. Renting a unit today forecloses the chance of renting it tomorrow at a higher price should more tenants arrive. The value of that foregone option depends on how uncertain future demand is. With substantial uncertainty, holding out for a higher-paying tenant is a reasonable gamble. With less, the option value shrinks.

This differs from the standard revenue-management setting, in which capacity depletes over a fixed horizon: an unsold airline seat at takeoff or hotel room at midnight earns nothing the next day, so the landlord-analog has no reason to hold capacity off the market. In contrast, Apartment capacity turns over: a unit rented today returns when the tenant leaves and can be rented again when they leave. That changes the calculus of vacancy. Renting now means giving up the chance of renting later at a higher price if demand

turns out to be strong. The value of that foregone chance, the option value of spare capacity, is what makes a landlord willing to leave a unit empty for a while, and it is the feature this paper builds on. The same structure applies to self-storage, equipment leasing, cloud computing capacity, and mobility platforms. The three results below, derived in Froeb, Tschantz & Sokol, follow.⁴

III. Substitution Attenuation Shrinks the Coordination Prize

Fixed capacity can explain the small Calder-Wang and Kim number. As occupancy rises, a firm has less spare capacity to absorb demand diverted from a rival who raises price. At the high occupancies of apartments, rivals become poor substitutes, so the gains to coordination shrink. In the limit, when a rival is full, it cannot absorb any diverted demand.

We call this *substitution attenuation*. It is the dynamic counterpart of a static result: mergers among capacity-constrained competitors have no effect unless the constraints are relaxed.⁵ If firms cannot expand to absorb each other's diverted

³ Salim Assad, Robert Clark, Daniel Ershov & Liang Xu, *Algorithmic Pricing and Competition: Empirical Evidence from the German Retail Gasoline Market*, 132 J. Pol. Econ. 723 (2024).

⁴ Luke M. Froeb, Steven T. Tschantz & Daniel D. Sokol, *Algorithmic Pricing When Capacity Turns Over: Competition, Collusion, and Information*

Sharing (SSRN Working Paper No. 6675958, 2026).

⁵ Luke M. Froeb, Steven T. Tschantz & Philip Crooke, *Bertrand Competition with Capacity Constraints: Mergers Among Parking Lots*, 113 J. Econometrics 49 (2003).

demand, capacity, not competition, determines price.

This matters quantitatively. In our computational experiments, when demand and capacity are scaled so the market spends most of its time at high occupancy (the empirically relevant case for apartments), the price difference between full coordination and independent pricing shrinks. As of February 2026, average U.S. apartment occupancy stood at 94.3 percent. At this high occupancy, the coordination prize is tiny.

IV. Sharing Occupancy Data Can Intensify Competition

When landlords set prices based only on their own occupancy, they compete on average across all the states the market might be in. If they could observe rivals' occupancies, each would raise price when rivals were full and cut price when they were not. Rivals would respond in kind, setting different prices in each different state. This kind of intense state by state competition would result in lower market prices.

The closest analogy is geographic price discrimination. Suppose two retailers are differentiated only by location and set a single price. Each consumer shops at the nearest store, and competition occurs only

on the borders of their market areas. Now suppose one retailer offers a discount to customers from zip codes closer to its rival. The rival must match, and average price falls.⁶ Every zip code becomes a battleground, and prices fall. Occupancy-sharing does the same thing, with occupancy states playing the role of zip codes: rather than competing on the average state, firms compete in each realized configuration of the market.

Ironically, this is the channel the DOJ settlement closes off. RealPage is now required to use only data at least twelve months old, prohibited from using real-time lease data, and barred from sub-state geographic modeling. That is exactly the granularity needed for state-by-state rivalry. Shut it down and you remove a channel that pushes prices down and occupancy up.

V. Reducing Uncertainty Lowers Prices

Anything that reduces uncertainty about future demand lowers the option value of spare capacity. With less reason to hold units off the market against the chance of a higher-paying tenant tomorrow, landlords target higher occupancy and lower prices. Two channels do this.

The first is scale. Larger portfolios pool demand risk: random fluctuations in arrivals

⁶ James C. Cooper, Luke M. Froeb, Daniel P. O'Brien & Steven T. Tschantz, *Does Price Discrimination Intensify Competition?*

Implications for Antitrust, 72 Antitrust L.J. 327 (2005).

average out across more units, so a landlord with 1,000 units faces less per-unit uncertainty than one with 100. Larger landlords therefore target higher occupancy and lower prices, both unilaterally and under coordination. This is the competitive counterpart to the “repairman economies of scale” of Rothschild & Werden.⁷

The second is forecasting. Algorithms like RealPage improve landlords’ forecasts of future demand: better forecasts → less uncertainty → lower option value → higher occupancy and lower prices.

Kalnins et al. found that hotel mergers raised occupancy in high-uncertainty markets, consistent with both channels.⁸

VI. Conclusion

Put the three results together and the picture is different from the one the DOJ’s complaint described. High occupancy attenuates substitution, shrinking the coordination prize. State-aware pricing can intensify rivalry. Reducing uncertainty, whether through scale or better forecasts, lowers prices.

New York’s recent ban on algorithmic pricing in rental markets, currently being

challenged by RealPage on constitutional grounds, treats algorithmic pricing as categorically suspect. Our results point the other way.

A separate literature asks whether pricing algorithms can learn to collude on their own. Even if they could, our results would still stand. The work in that literature also suggests learned collusion is hard to achieve in practice. den Boer et al.⁹ and Keppo et al.¹⁰ cast doubt on whether the conditions for it are empirically relevant: the algorithms have to be unusually similar, they have to interact at speeds that don’t match real business decisions, and the coordination falls apart under modest differences in firm patience, data access, or software design.

Before asking whether algorithms can learn to sustain a supra-competitive price, one should ask whether the supra-competitive price is big enough to bother sustaining. In capacity-turnover markets at the occupancy rates observed in U.S. apartments, the answer is: probably not.

⁷ Michael Rothschild & Gregory J. Werden, *Returns to Scale from Random Factor Services: Existence and Scope*, 10 Bell J. Econ. 329 (1979).

⁸ Arturs Kalnins, Luke M. Froeb & Steven T. Tschantz, *Can Mergers Increase Output? Evidence from the Lodging Industry*, 48 RAND J. Econ. 178 (2017).

⁹ Arnoud V. den Boer, Janusz M. Meylahn & Maarten Pieter Schinkel, *Artificial Collusion: Examining Supracompetitive Pricing by Q-Learning Algorithms*, Mgmt. Sci. (forthcoming 2024).

¹⁰ Jussi Keppo, Yutong Li, Gerry Tsoukalas & Nan Yuan, *On the Fragility of AI Agent Collusion* (SSRN Working Paper No. 5386338, 2026).