Value of Flexibility: Evidence from Trains*

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Abstract

The use of dynamic pricing tools has expanded significantly over the past two decades, accompanied by a growing emphasis on offering consumers the flexibility to cancel previously purchased items. This paper leverages a comprehensive dataset comprising all sales and cancellations from a major European passenger rail company to empirically quantify the effects of cancellation options on dynamic ticket pricing, consumer welfare, and firm revenue. First, I show that the overall effect of offering this flexibility is theoretically ambiguous, as it involves both higher ticket quality and lower opportunity costs. I therefore develop and estimate a structural dynamic pricing model and conduct counterfactual simulations to explore the overall effect as well as the relative importance of the ticket quality and opportunity cost channels. My results show that removing the flexibility to cancel decreases on average prices by 1.9%, consumer welfare by 4.5%, and firm revenue by 5.7%, suggesting that both consumers and firms benefit from allowing cancellations. In my particular setting, I find a negligible impact of the opportunity cost channel, thus indicating that observed changes are fully attributable to the higher ticket quality channel. Larger changes in opportunity costs would therefore amplify the losses from restricting cancellations.

Keywords: Dynamic Pricing, Intertemporal Price Discrimination, Cancellations, Transportation Markets, Passenger Rail

JEL-Codes: L11, C61, L92, R41

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