2018

Why New Car Dealers Sell Used Cars: A Structural Analysis of the Impact of Used Car Markets on the Automobile Distribution Channel

Dinakar Jayarajan
Illinois Institute of Technology

S. Siddarth
University of Southern California

Jorge Silva-Risso
University of California Riverside

Why New Car Dealers Sell Used Cars: A Structural Analysis of the Impact of Used Car Markets on the Automobile Distribution Channel

Dinakar Jayarajan
Illinois Institute of Technology
S. Siddarth
University of Southern California
Jorge Silva-Risso
University of California Riverside

ABSTRACT
Most new car dealers also sell used cars from the same physical location. Used cars sold by these dealers are relatively good substitutes for new cars and thus, could compete with the new cars sold by the dealers. Previous empirical research on the automobile market has mostly ignored the presence of the used car market while the analytical literature provides ambivalent suggestions. In this paper, we study how the availability of used cars at new car dealers affects the substitution between new and used cars as well as how it affects the margins and profits obtained by the dealer and manufacturer.

Using a transaction level dataset which contains both new and used car transactions, we perform a detailed empirical analysis to understand how the existence of the used car markets affect the new car market as well as the channel members. We build a full equilibrium structural model of new and used car competition with profit maximizing manufacturers and dealers. Using the estimated model we quantify the substitutability between new and used cars and compare it with a more conventional demand model which considers new cars only. We then proceed to analyze whether dealers consider the substitutability between new and used cars to shed light on how dealers price their cars. We then contrast the distribution of profits between the manufacturer and dealer to understand how the used markets affect the distribution of power in the channel.

Our results indicate that the new car prices have a higher impact on used car demand than used car prices have on new car demand. We also find that the ability to price and sell used cars gives the dealer higher margins on new cars and increases their power in the channel.

About the Authors
Dinakar Jayarajan is an Asst. Professor at the Stuart School of Business at Illinois Tech, Chicago. He received his PhD from the USC Marshall School of Business, Los Angeles.
S. Siddarth is an Assoc. Professor at the USC Marshall School of Business.
Jorge Silva-Risso is Professor of Marketing at UCR Anderson School of Management, Riverside, CA.