

# **The Indirect Impact of Current Prices on Households' Purchase Decisions through the Formation of Expected Future Prices**

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## Abstract

We examine the indirect (in addition to the direct) impact of current prices.

This indirect impact occurs through the formation of expected future prices, on households' purchase decisions. Two competing learning processes of households' future price expectations formation, that lead to opposite predictions, are proposed. Under a deal-probability learning process, households update the expected probability of arrival of a future price deal on each brand, and, therefore, a current price deal on a brand raises households' expectations of a price deal on the same brand in the immediate future. Under a deal-timing learning process, households update the expected time of arrival of the next price deal on each brand, and, therefore, a current price deal on a brand lowers households' expectations of a price deal on the same brand in the immediate future. We embed each learning specification within a comprehensive econometric framework that simultaneously examines three purchase decisions – incidence, brand choice and quantity – at the household level, while explicitly correcting for two sources of selectivity bias in discrete quantity outcomes.

We estimate the proposed model using scanner panel data on paper towels, and find that (1) price promotions have both direct and indirect impact on incidence, but only a direct impact on quantity; (2) the deal-probability learning process better describes households' future price expectations formation compared to the dealtiming learning process; (3) the deal-probability learning process explains purchase behaviors of both brand-loyals and brand-switchers, with the indirect impact of price promotions being greater for brand-loyals than for brand-switchers; and (4)

the indirect impact of price promotions is greater for infrequent shoppers than for frequent shoppers.

*Keywords:* Price Expectations, Learning, Incidence, Brand Choice, Quantity, ScannerPanel Data.