

ESTIMATING CANNIBALIZATION RATES FOR PIONEERING INNOVATIONS

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*Van Heerde, Harald J., Shuba Srinivasan, and Marnik G. Dekimpe (2010), "Estimating Cannibalization Rates for Pioneering Innovations," *Marketing Science*, 29 (6), 1024-1039.

MOTIVATION

- Late Steve Jobs, when introducing the iPhone:

“If anyone is going to cannibalize us, I want it to be us. I don’t want it to be a competitor.”

- Need to quantify the cannibalization effect.

PROBLEM STATEMENT

- Evaluate new product:
 - how much new demand
 - decomposition of demand
- Especially difficult for radical innovations, which tend to operate on the boundary of multiple categories.
- New product may draw from same-company products (cannibalization) or from other-company products (brand switching), possibly involving category switching, and, expand primary demand.

PROPOSED APPROACH

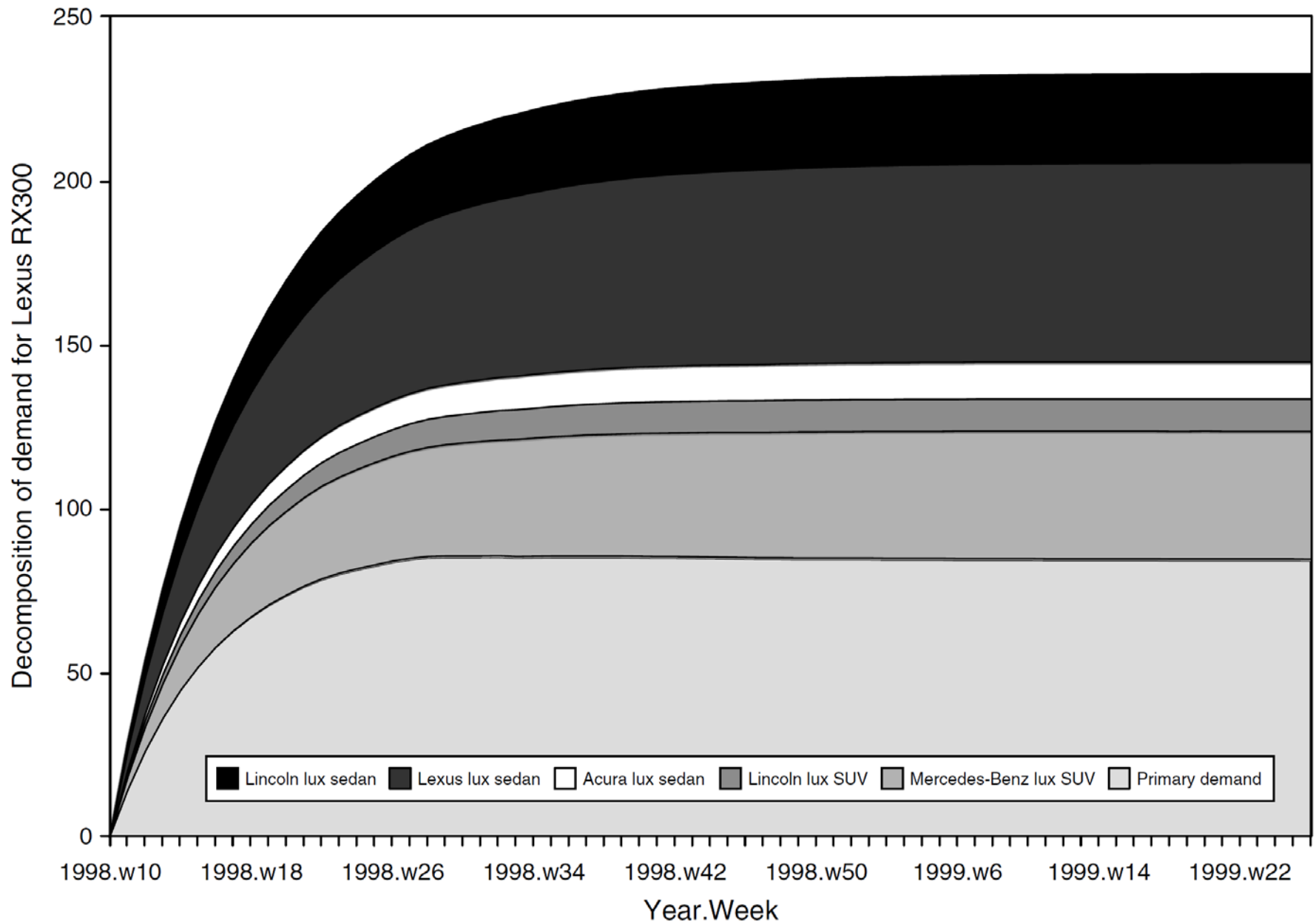
- Allows for decomposition percentages changing over time.
- Includes short- and long-term effects.
- Controls for marketing mix effects.
- Handles missing data for cross-effects due to product unavailability.
- Time-varying Vector Error Correction Model
 - ✓ Vector Error Correction (Fok et al. 2006)
 - ✓ Dynamic Linear Model (Van Heerde et al. 2004)
 - ✓ Bayesian estimation only updates when data are available.



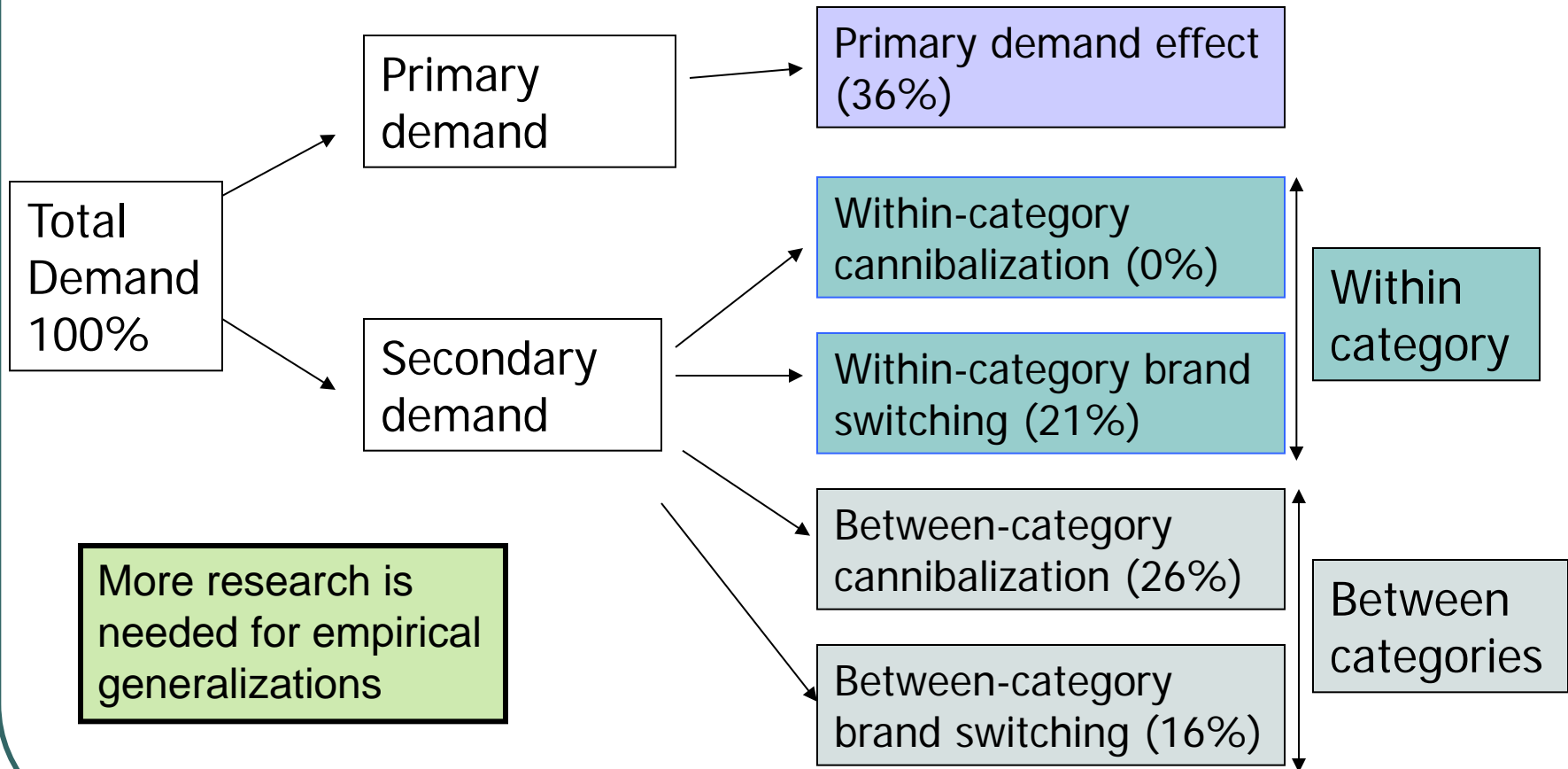
APPLICATION

- Lexus RX 300 Introduction in the US.
- Radical innovation: first cross-over SUV.
- Potential to draw from both existing SUVs and luxury sedans.
- Weekly transaction data from JD Power and Associates including sales volume, prices, etc.
- Categories: luxury SUV, luxury sedans.
- Weekly advertising data from TNS Media.

Time-Varying Decomposition of the Demand for Lexus RX300



RESULTS



MANAGERIAL IMPLICATIONS

- Focal brand introducing radical innovation: tool to evaluate net demand, accounting for within- and across-category cannibalization.
 - This case: cannibalization effect is 26%, so net effect 74%
- Competitor: tool to assess the extent to which their products (across different categories) are affected and how they may recoup potential losses.
- Industry: tool to assess to what extent innovations grow primary demand.