

# U.S. Hedonic Model Development-Lessons Learned

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# U.S. Retail Trade Hedonic Model Development - History

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Model attempted for Grocery stores

- industry contained diverse product types
- model was not feasible due to widely differing margin percentages

Beer, Wine and Liquor stores

- industry contains homogeneity of margin percentages
- successful model implemented in 2004



# Store Characteristics Collected

Liquor type (wine, beer, etc.)

Nearest Competition

# of checkouts

# of full time equivalent employees

# of skus

Domestic/import

Scanners

Store selling area

Store area

Store hours (24 hours, open Sunday, open Saturday, etc.)

Type of liquor store (freestanding, strip mall, etc.)

Years since renovation

Lottery tickets



# Implementation

- The model uses independent variables that were based on store and item characteristics to explain the variation in price movements in the dependent variable, margin percentage
- Survey units contacted annually to update store characteristics
- Regression run on updated dataset (many types of models have been used over time – linear, log-log, log-linear)
- Base price adjustments are made for changes in variables found to be significant. Typically:
  - number of full-time equivalent employees
  - number of stock keeping units (SKUs)
  - number of checkouts
  - number of years since last renovation
  - number of hours open per week
  - use of scanners



# Lessons Learned

- Survey respondents report price changes store characteristic updates were too burdensome
- Annual phone contact to update characteristics is resource and time intensive – requires entire 4 month correction cycle to update the dataset and adjust base prices
- Implementation of the hedonic model causes almost no change in published indexes
- Therefore, the U.S. has not pursued hedonic models in other retail industries



# Contact Information

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