
MASB Standards Project

Measuring the Return for CPG with CLV Project Review and Status

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Co-lead of CLV Project**

**August 2015
Chicago**



**Marketing Accountability Standards Board
of the Marketing Accountability Foundation**

Measuring CLV for CPG Target Segments

Objectives

Phase I. Document what is known about CLV.

Phase IIa. Conduct a pilot that will demonstrate that the CLV construct and models can be reliably applied to CPG.

Phase IIb.. Determine the extent to which this approach satisfies the MMAP Characteristics (e.g. predictive validity and causality) for use in CPG business

Phase IIIa. Conduct a single source test that will:

- Replicate the pilot (a CLV method can be reliably applied to CPG businesses)

- Look at changes in CLV related to exposure to advertising among target groups

- Explore magnitude predictive capabilities

Phase IIIb. Determine the extent to which this approach satisfies the MMAP Characteristics (e.g. predictive validity and causality) for use in CPG business

Available to MASB members on website

Bringing Marketing to Wall Street - the role of CLV

MASB Marketing Accountability Standards Board
of the Marketing Accountability Foundation

August 7, 2009
Chicago, IL

V. Kumar, Ph.D.

Richard and Susan Lenny Distinguished Chair Professor of Marketing,
Executive Director, Center for Excellence in Brand & Customer Management, and
Director of the PhD Program,
J. Mack Robinson College of Business
Georgia State University, Atlanta, GA

Goals: Pilot Project Objectives



Phase I:

Document what is known about CLV



Phase IIA

Conduct a pilot that will demonstrate the CLV construct and models applied to CPG



Phase IIB

Determine the extent to which this approach satisfies the MMAP Characteristics

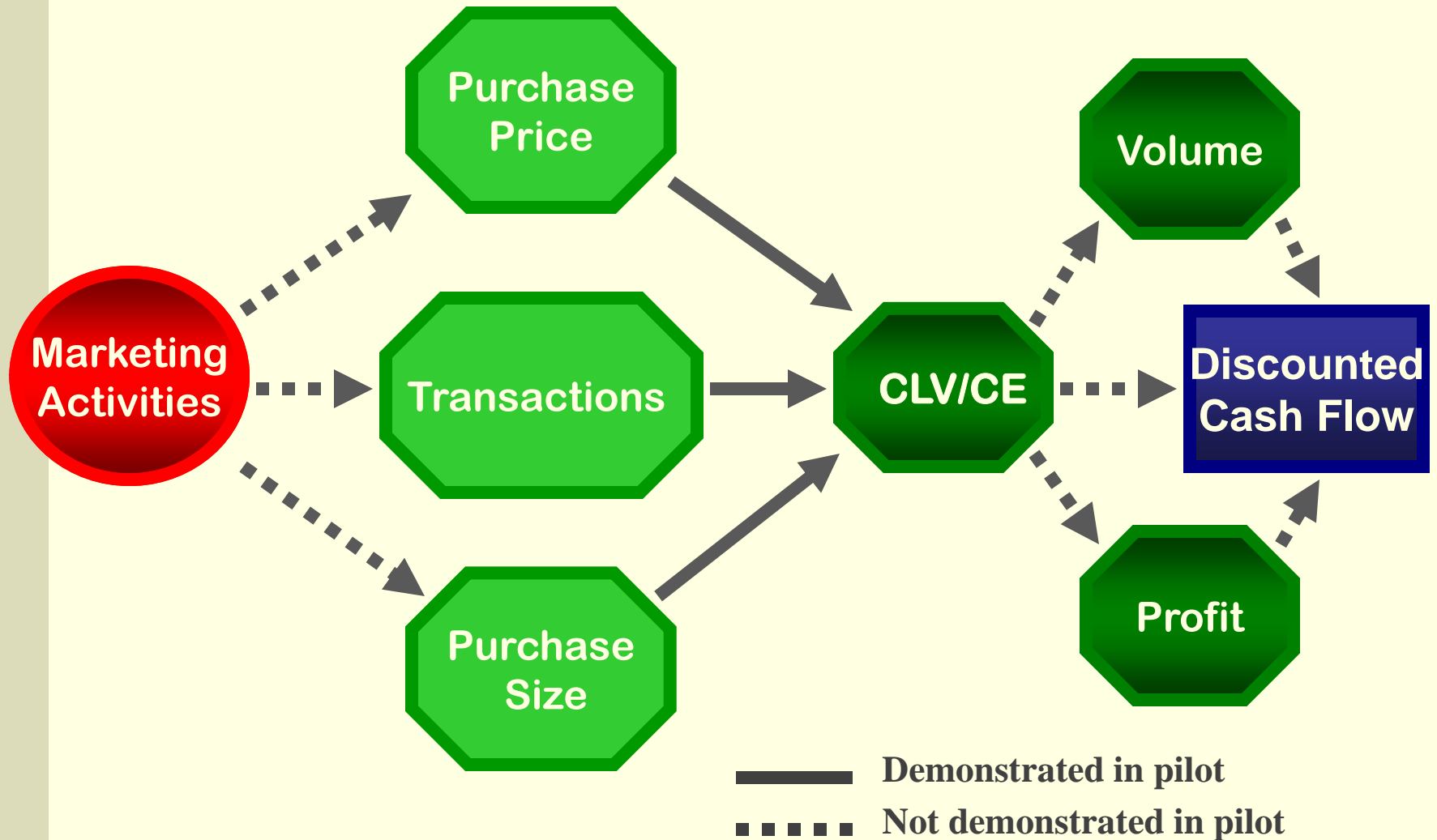
Phase IIIA

Conduct a test that will replicate the pilot on a larger scanner data set

Phase IIIB

Determine the extent to which this approach satisfies the MMAP Characteristics

CLV/CE for CPG Pilot Project: Marketing Activity, Metrics & Financial Links



Data

■ Nielsen Panel Data Sets

- 3-years, purchase transactions from 8/2007 – 7/2010
- 10/12 Static Panels
 - Households who reported regularly (10 of 12 months in all 3 years)

■ Categories analyzed :

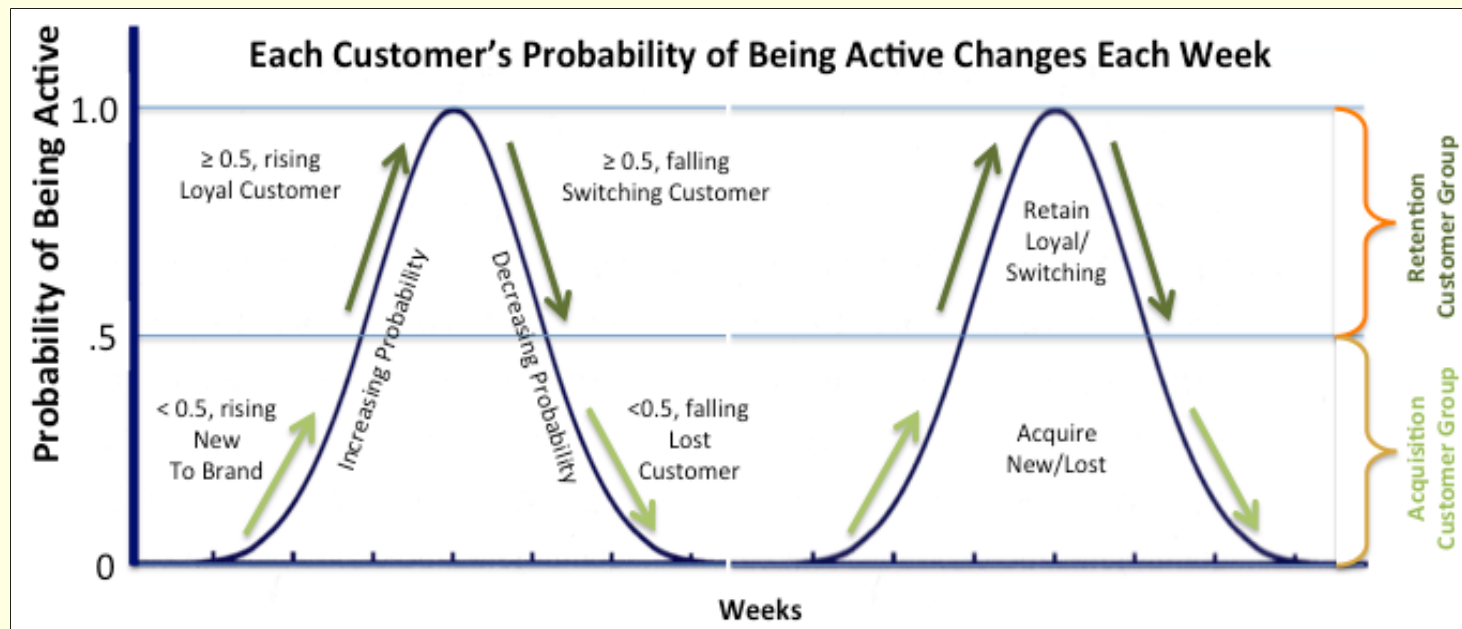
- Sports Drinks
- Baby Diapers
- Baby Wipes
- Training Pants
- Carbonated Beverages
- Canned Pasta

- Sample sizes: 10,000 - 40,000 buyers per category

Methodology: Customer Lifetime Value (CLV)

- 1st year of transactions is used to baseline the probability of being active for every HH.
- Each week, the probability of being active is recalculated based on past 52 weeks of behavior.

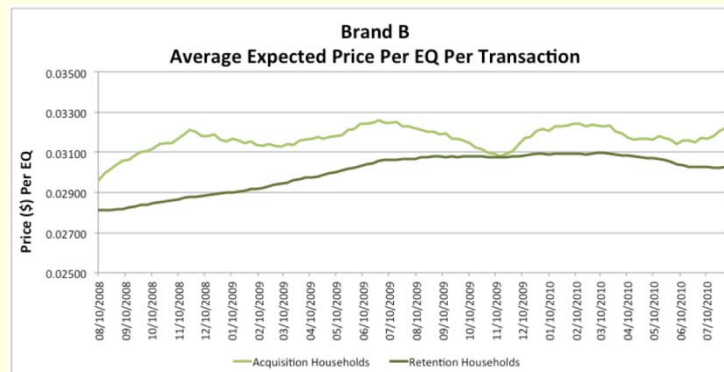
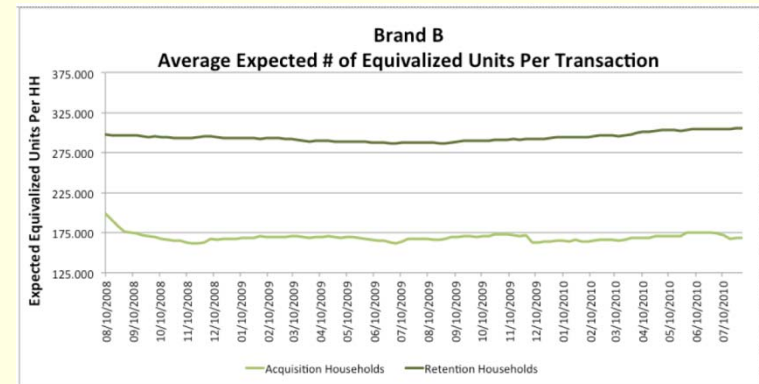
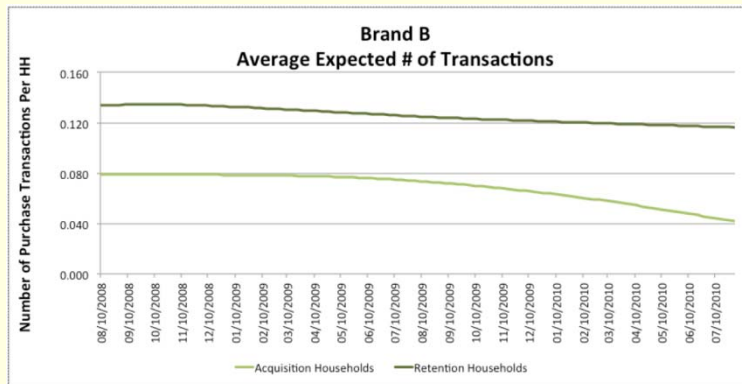
Hanssens and Yoo (2010);



Methodology: CLV

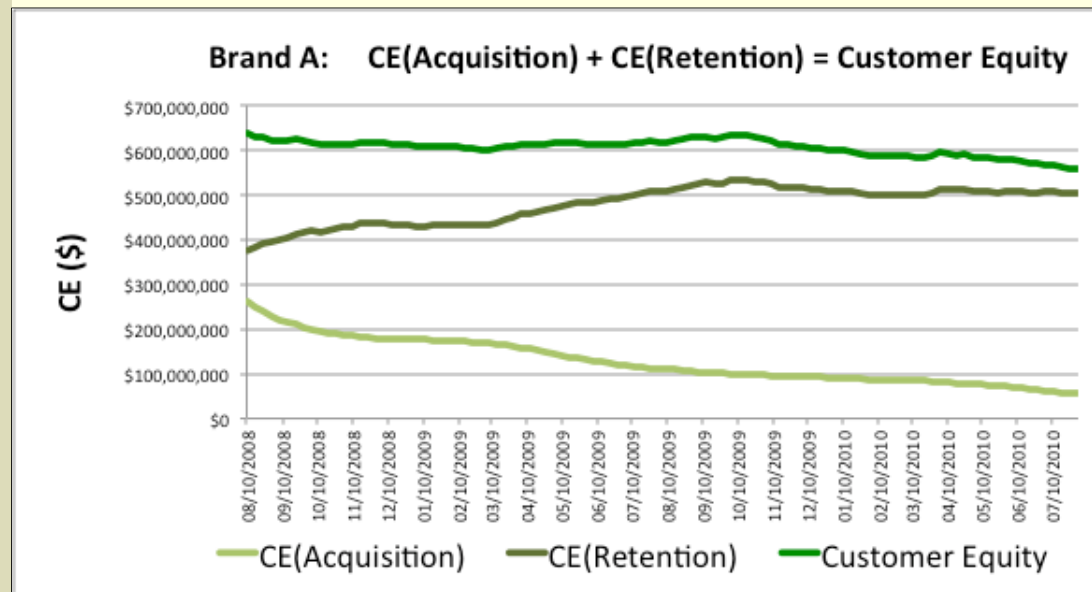
- Each week, for each HH, CLV is estimated from:
 - Expected Frequency of Future Purchases
 - Expected Size of Future Purchases
 - Expected Price of Future Purchases

Fader, Hardie, Lee (2005)



Methodology: Customer Equity (CE)

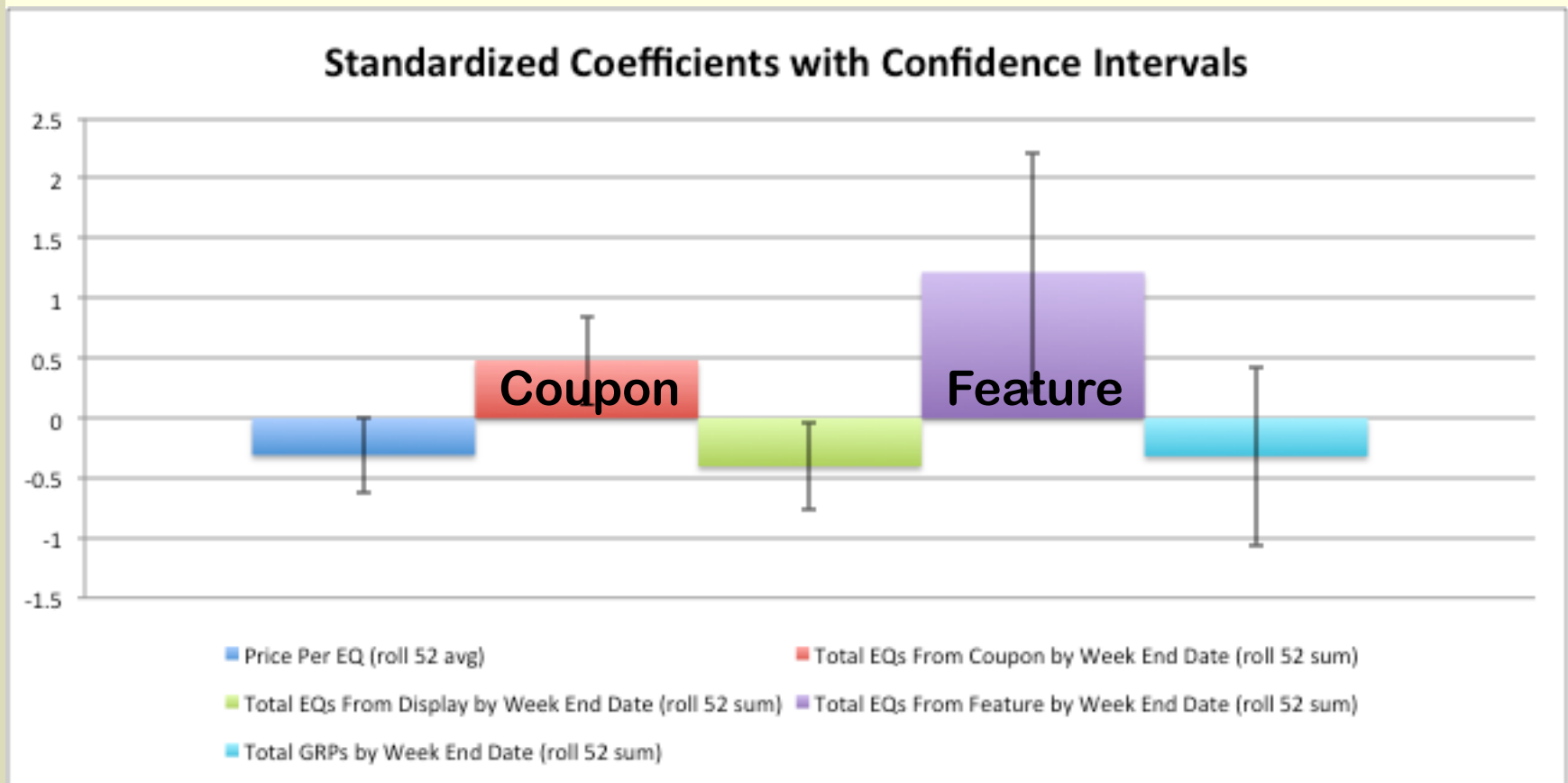
- Customer Equity = Sum of CLV of all Households
- Customer Equity = Future NPV for the brand/category
 - Industry average margin used for all sets
 - Discounted Cash Flow



- **Stable CE:** assuming the brand is profitable, continued future profitability may be expected, status quo marketing strategy OR improve marketing strategy.
- **Rising CE:** Higher profitability, maximize marketing tactics that are working.
- **Declining CE:** is a leading indicator of deteriorating profitability. Change course.

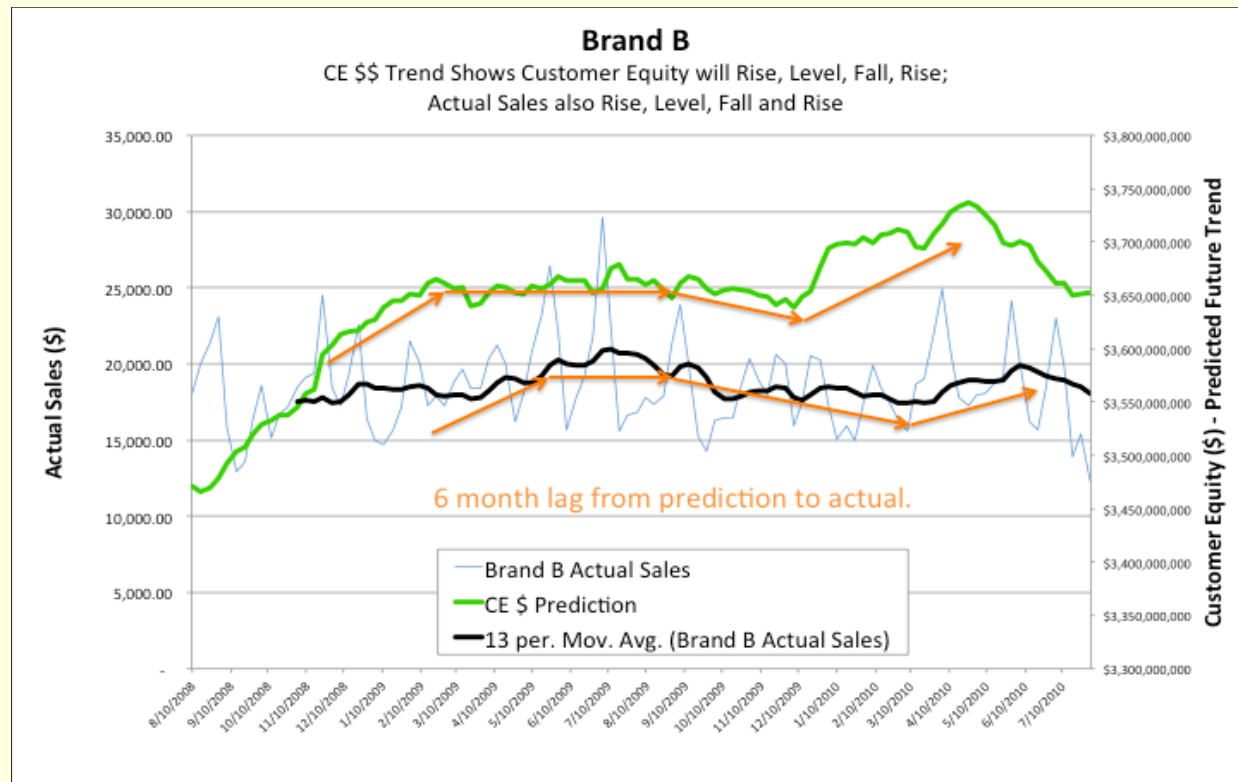
Methodology: “Equity Mix Modeling”

Use mix models with CE (instead of \$\$ volume) to understand how marketing executions impact future CE.



Methodology: Validation

- Future actual sales for each brand validated CE prediction.
- Using this validation, we found that a predicted change in the CE trend precedes an actual trend change in future by 6 – 8 months.



Measures

What did we measure?

Customer
Lifetime Value
(Panel, HH)

Customer Equity
(future NPV)

Marketing
Impacts on
Customer Equity

All are forward-looking measures.

Findings

- The predictive power of CLV in this study was limited due to:
 - Static panel of households without adding new households
 - Panelist (reporting) fatigue caused a downward trend
- Changes in customer equity can be predicted for brands, competitors and categories with 6 – 8 months advanced notice.

Conclusions/MMAP Results

- Yoo/Hanssens CLV/CE model can be applied systematically to CPG brands
- CLV/CE is a stable metric (ie low volatility)
- CLV/CE is a forward-looking (different from sales or market share)
 - important for setting strategy (for example budget allocations between advertising and promotion)
- CLV/CE is tangible: represents expected future financial trends relative to competition & category
- CLV/CE sets up a discussion for strategic change in marketing before it's too late

Hanssens Comments

"I believe the pilot has delivered on the first three points, and the fourth has already started. The fifth is 'managerial implications', which is in the hands of the brand executives."

"CE also provides full accountability for marketing spend vs just the short-term impact from typical marketing mix studies."

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Kumar 2009

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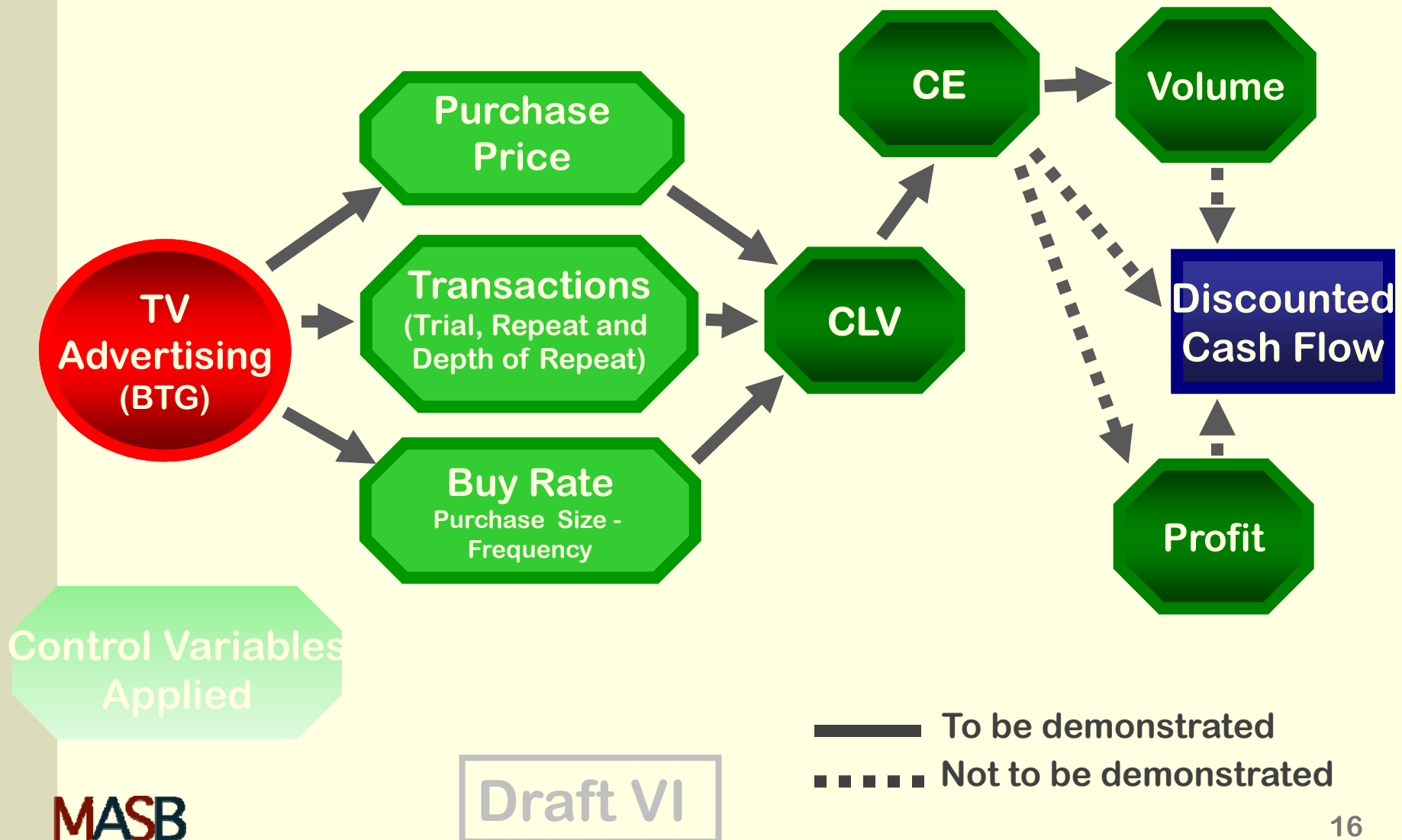
Explore magnitude predictive capabilities

Phase IIIb. Determine the extent to which this approach satisfies the MMAP Characteristics (e.g. predictive validity and causality) for use in CPG business

Phase III did not quite happen as planned:

- Due to NCS charter, this study is an extension, not replication
- Looked at long-term addition to short-term impact
- Overall magnitude predictions the domain of Nielsen (not NCS)
- MMAP audit is in progress

CLV/CE for CPG Single Source Project



CLV/Advertising Impact

- **Project Goal:**
 - Measure the impact of advertising on CLV
 - Measure the long-term effects of advertising
- **Data: Nielsen Catalina Solutions Data**
 - Frequent Shopper Data: 70 million HHs
 - Supermarkets and drug store data
 - Matched Television Exposure: 4.2 million HHs
 - NPM, MM, Set-top-box data
 - March 2012 – September 2014

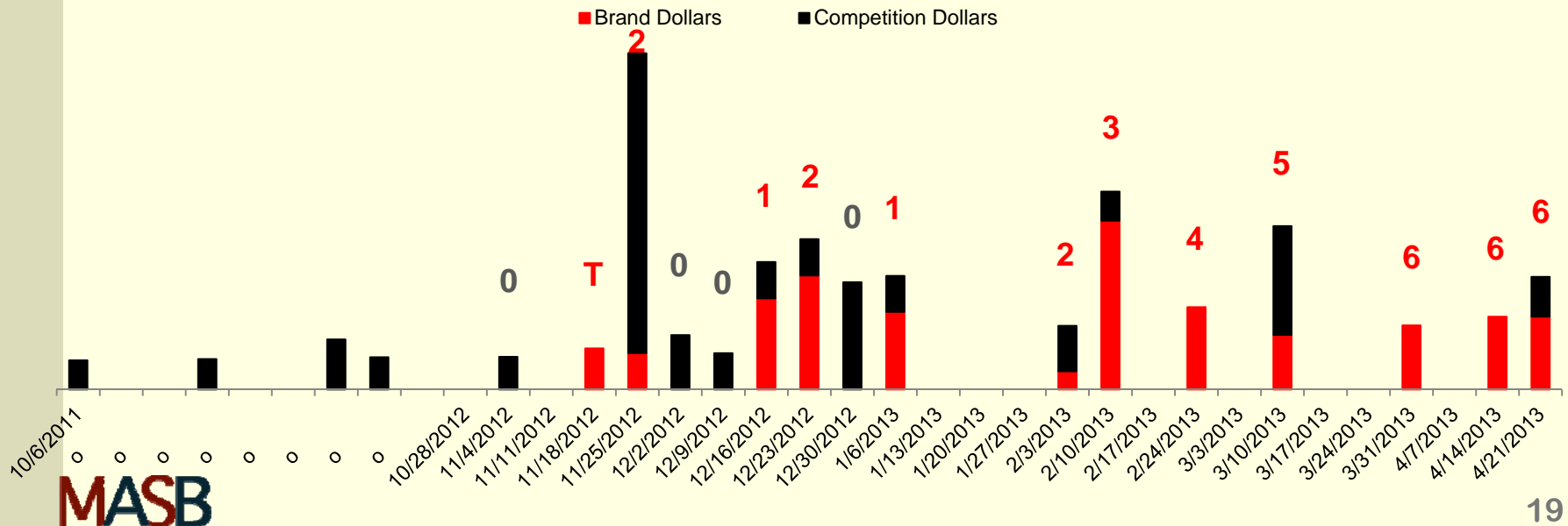
CLV/Advertising Impact

- Four brands: Baby Care, Snack Food, Prepared Dinner, Alcoholic Beverage
- Methodology:
 - Tag consecutive purchases for Trial and Depth of Repeat (T&DR)
 - Measure incremental \$/HH spend by incremental T&DR
 - Measure advertising's impact on T&DR
 - Weight \$/HH and compare to short-term effects to get multiplier

Critical Measure Identified: Trial and Depth of Repeat

- Trial is identified first:
 - First time brand buyer in past X period (6 months for these brands)
- Among non-triers – Depth of Repeat
 - Count of consecutive brand purchase when category was bought
 - This was capped at 6 to reduce the long tail

Household X Trial/Depth Status by Purchase Occasion



Trial and Depth of Repeat

- The higher the Depth of repeat, the higher the sales in the following year.

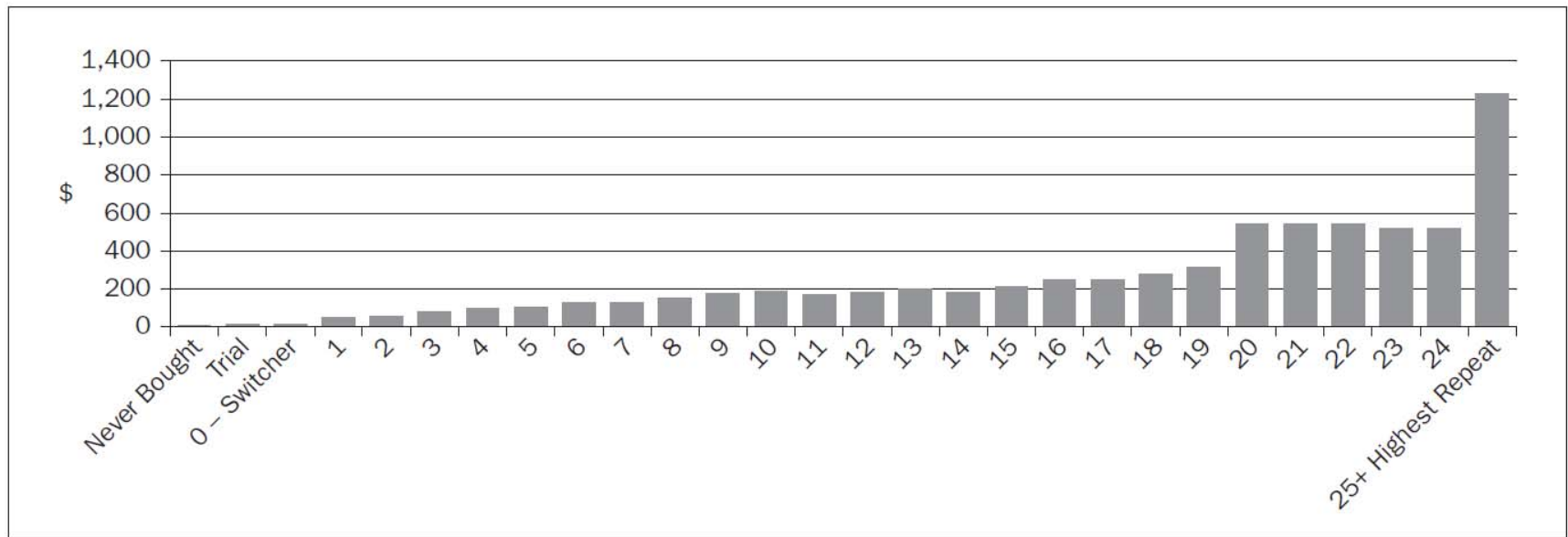
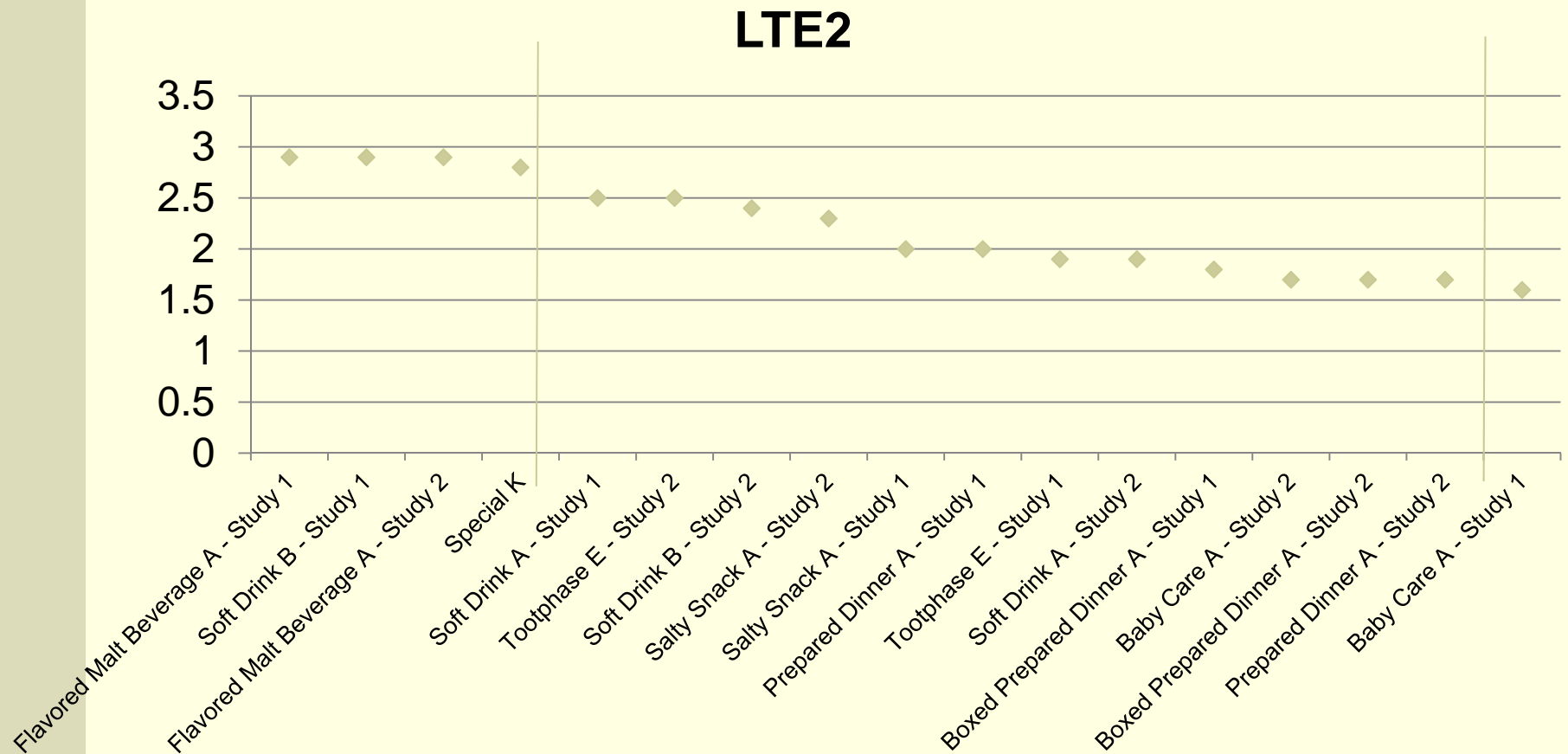


Figure 1 Post-Period Dollars per Households (HH) by Trial and Depth of Repeat

Validation

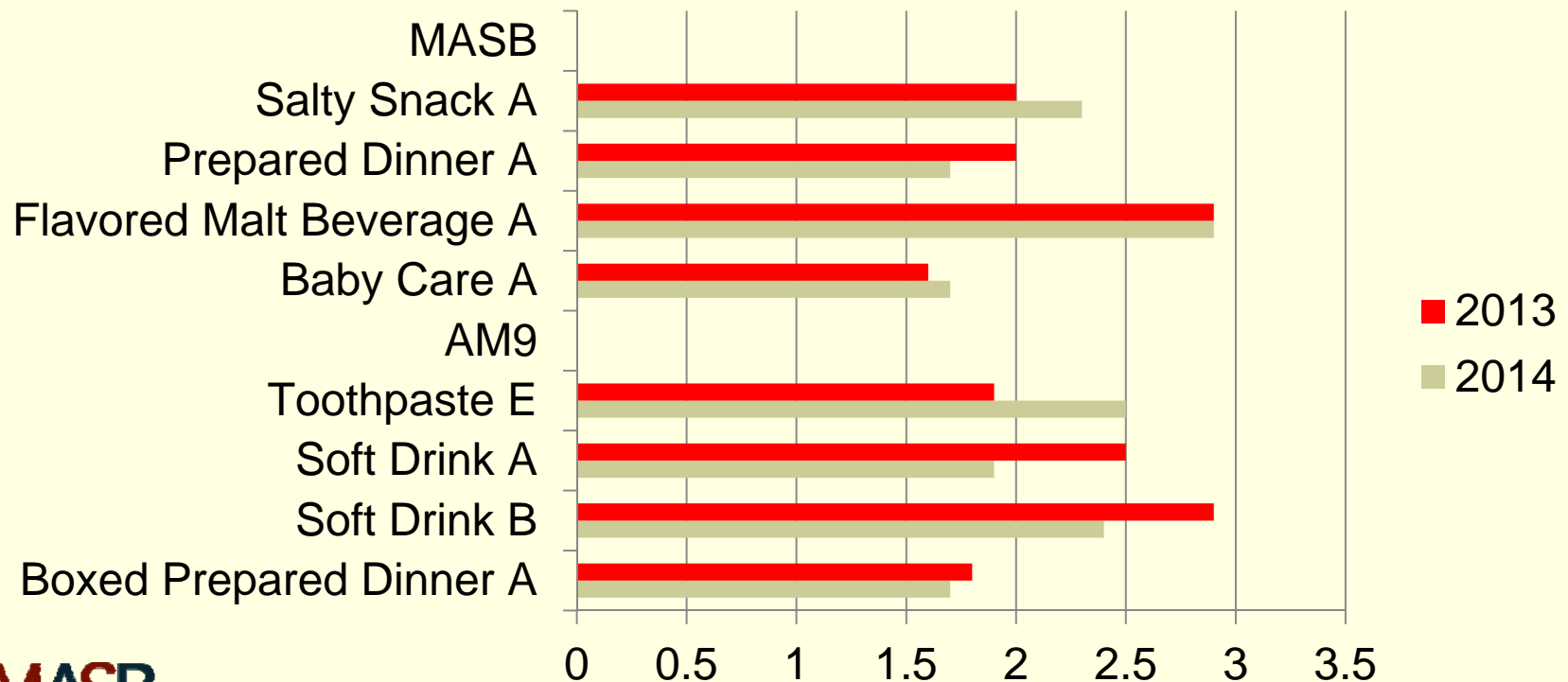
The range of LTE2 multipliers is from 1.6 to 2.9, with the majority between 1.5 and 2.5. These match the range from Lodish 1991 Study.



LTE2 Results: Year over Year Changes

- The change from one campaign year to the next can be as much as 32%.
- The largest gain is for Toothpaste E.

Year-Over-Year LTE2 Results





CLV/Advertising Impact

- **Measures:**
 - **Incremental \$ Sales/HH at each higher T&DR**
 - **Degree to which short-term drove each T&DR**
 - **Weighted Average Multiplier**
 - **Long-Term/ Short-term + 1 gives a multiplier that translates short-term to total effect of advertising**

CLV/Advertising Impact Findings

- Long-term roughly 2X short-term effects, but varied
- Varied year-over-year for half of the brands
- Higher short-term → higher long-term
- Higher \$/week sales → higher long-term
- Shorter PC substantial part of \$/week sales impact
- Multiplier didn't change by GRPs or share-of-voice

One of these things is not like the other...

Phase II	Phase III
Panel Data, Homescan	Frequent Shopper Data, NCS
Studies Future Profit/Discounted Cash Flow	Studies Incremental \$\$ Volume From Advertising
Marketing Effects	Advertising Effects
	



Thank-you!



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