

Winners and Losers in a Major Price War



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Price wars abound in markets

“Look at the auto industry, telecom, airlines and discount brokerages – all those industries got into price competition. When you are not price competitive, you keep losing share and when you start matching price you gain share, but lose profits. I took a recent flight that cost \$79 for the flight and \$80 for the cab ride from the airport. That is an industry in trouble”

James Bailey, President and COO, US Trust



Retail competition intensifies

- Demanding consumers “want it all”: excellent quality and service at rock-bottom prices
- Growth of hard discounters in US (e.g. Walmart) and Europe (e.g. Aldi, Lidl) seems unstoppable
- High-service retailers run out of differentiation options and may have to address point of parity: but ‘market correction’ may start a price war



Good for absolutely nothing?

- Lower costs/deep pockets to drive out competition
- Little scientific empirical evidence

Net effect

= $f(\text{actual price } \Delta, \text{ price image } \Delta, \text{ sensitivity})$

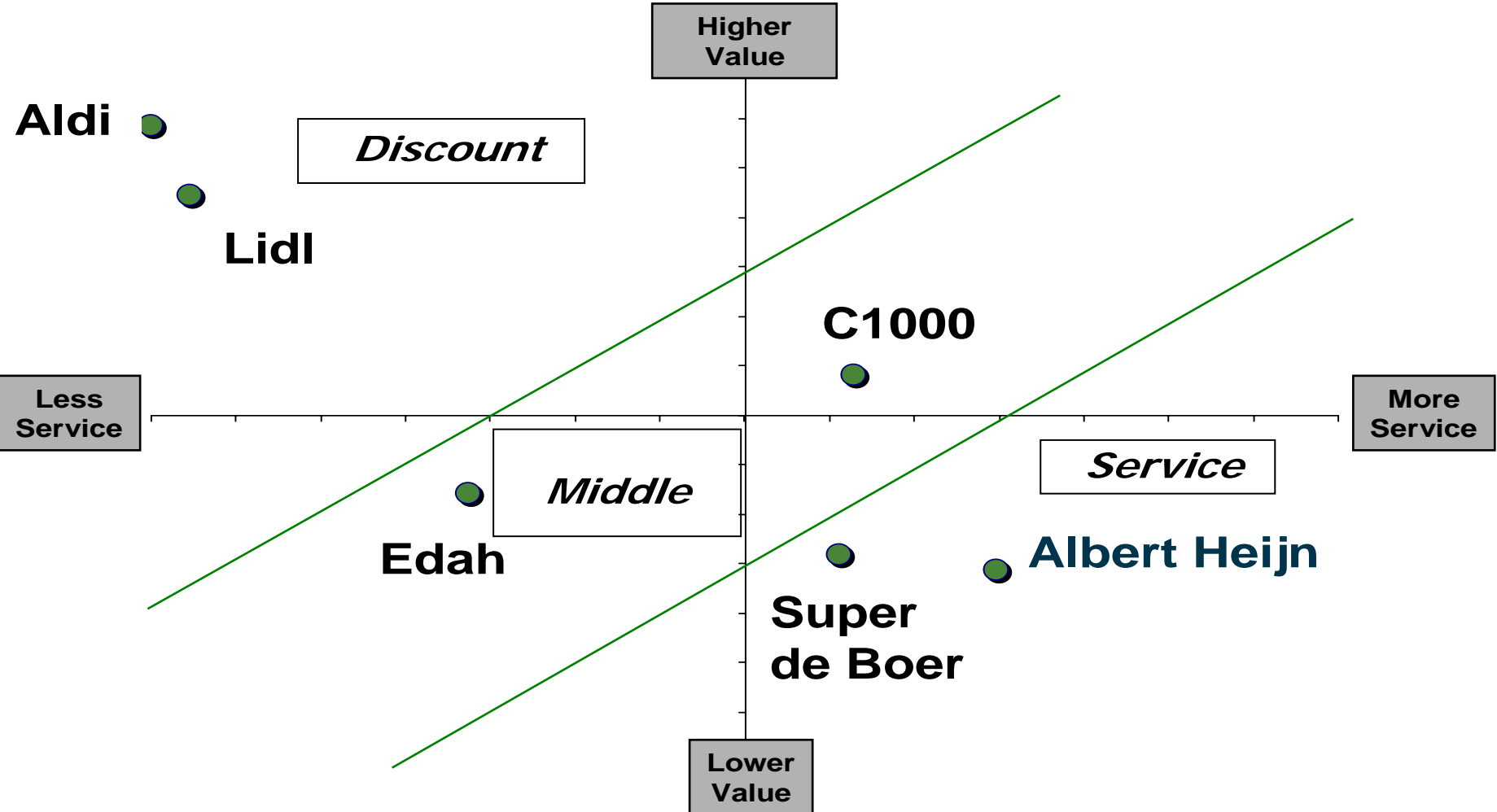
1. ST and LT response store choice and basket size?
2. Effect on store image and on price sensitivity?
3. Do effects depend on pioneering and positioning?



Dutch grocery retail in Fall 2003

- Recession raised consumer price sensitivity
- Legal to sell below costs ~ Germany, UK
- NL low average price levels (EU index= 92), high price spread across retailers (75-109)
- Threat of hard discounters (Aldi, Lidl) '96-'03
 - Albert Heijn's market share from 31% to 26 %
 - Hard discounters' market share 13% to 22%

Supermarket Positioning: Service x Value





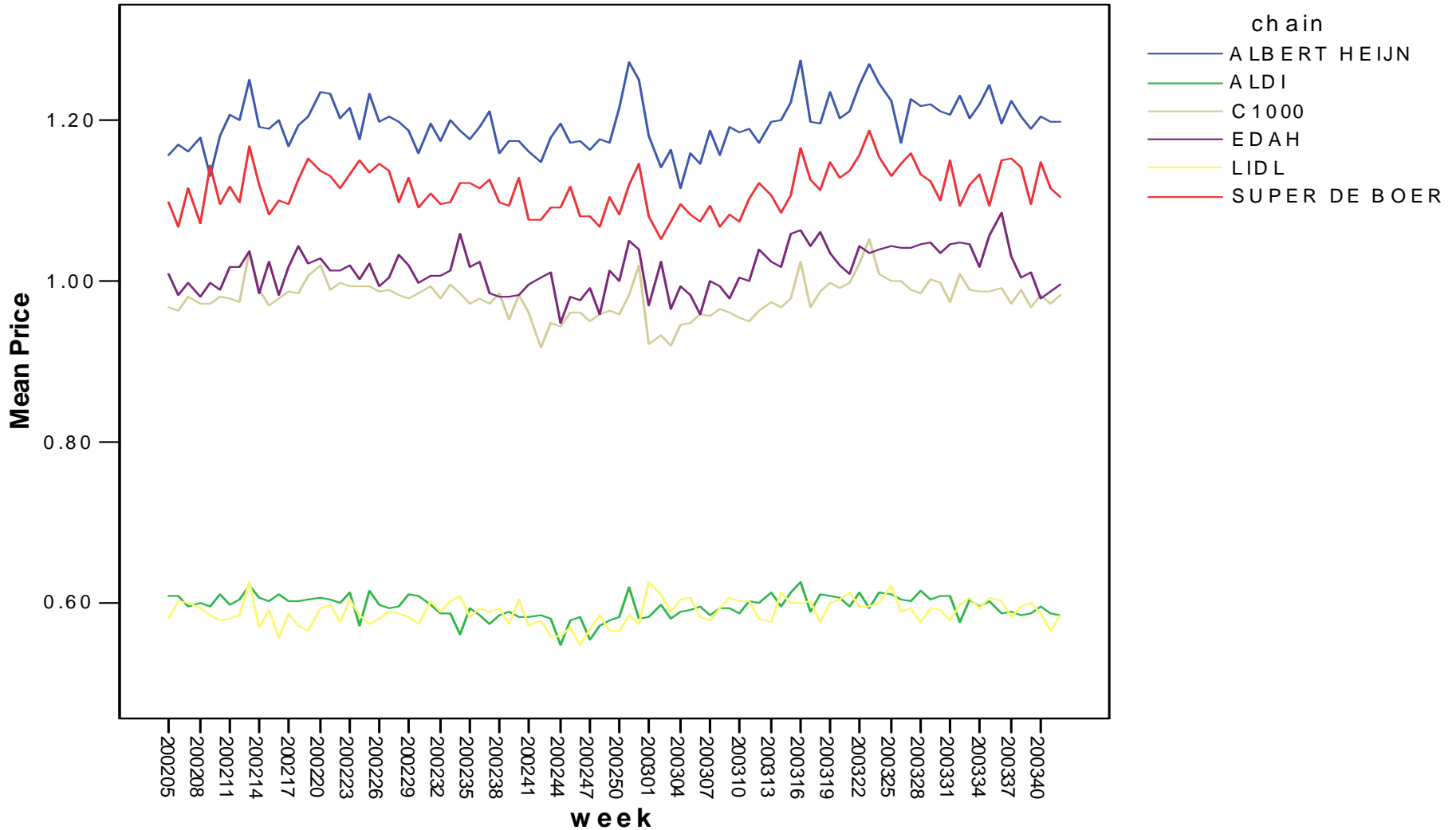
Supermarket choice depends on

1. Low prices
2. Good quality
3. Wide Assortment
4. Good Promotions
5. Many fresh products

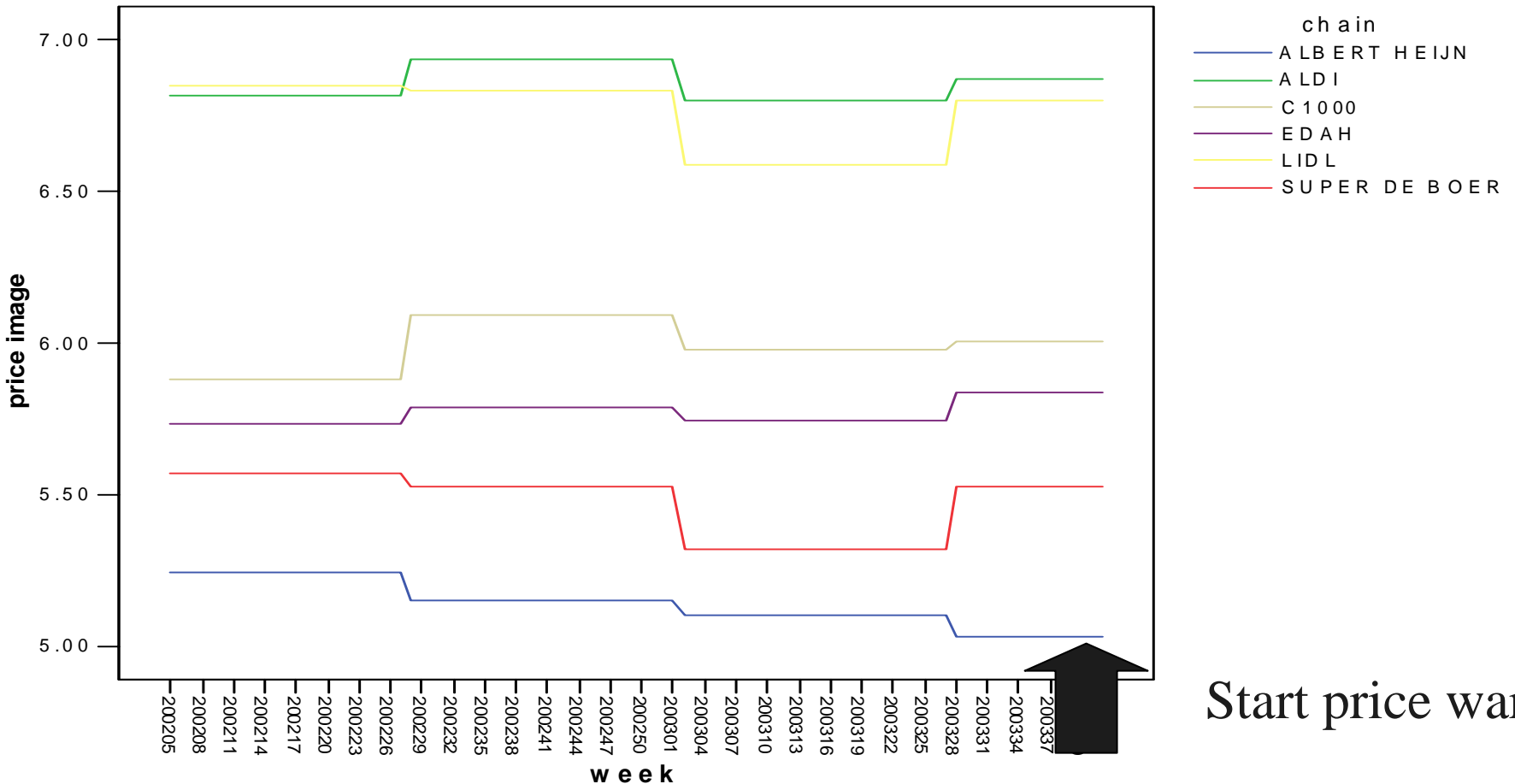
Source: EFMI 2005, Consumenten Trends



The huge actual price gap



reflected in AH's price image



Start price war



Uw dagelijkse
boodschappen worden
veel voordeliger.



M BONUS



AH cuts prices on October 20, 2003

- Publicly announced commitment to shrink price gap
- All major competitors react *within 2 days*
- Momentum: 15 more rounds yield *negative retail margins for hundreds of products* (van Aalst et al. 2005)
- Coke 1.5 liter: Euro 1.23 → 1.12 → 1.09 → 1.02
- NL food prices drop 11%, consumer price index 4%
- \$ 1.2 B loss split half between retailers & suppliers



Unique Data on price war

- National, handscan data from GfK: 1821 households
- Consumer perception data on price, quality, service
- Distance, floor space and scanner data (Reed/IRI)
- Separate promotion data for discounters
- Full coverage: 54 categories, all SKUs
- 30 wks initialization, 204 wks for model estimation:
 - 90 weeks before start price war (October 20, 2003)
 - 114 weeks after start price war



Multivariate Tobit II model

- Store incidence (household h , store i , week t):

$$z_{hit} = 1 \quad \text{if} \quad z_{hit}^* > 0 \quad \text{and} \quad z_{hit} = 0 \quad \text{otherwise,}$$

$$\text{where } z_{hit}^* = \iota_{hi} + x_{hit}' \zeta + u_{hit}$$

- log basket size (= y_{hit}) equation:

$$y_{hit} = y_{hit}^* \quad \text{if} \quad z_{hit} = 1 \quad \text{and} = 0 \quad \text{otherwise, where}$$

$$y_{hit}^* = \alpha_{hi} + x_{hit}' \omega + \varepsilon_{hit}$$



Explanatory variables (x_{hit})

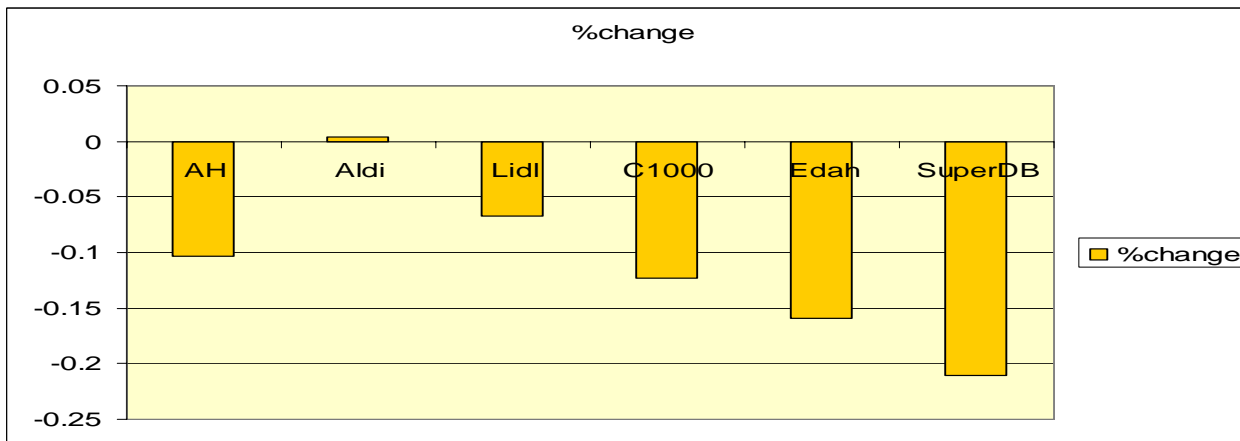
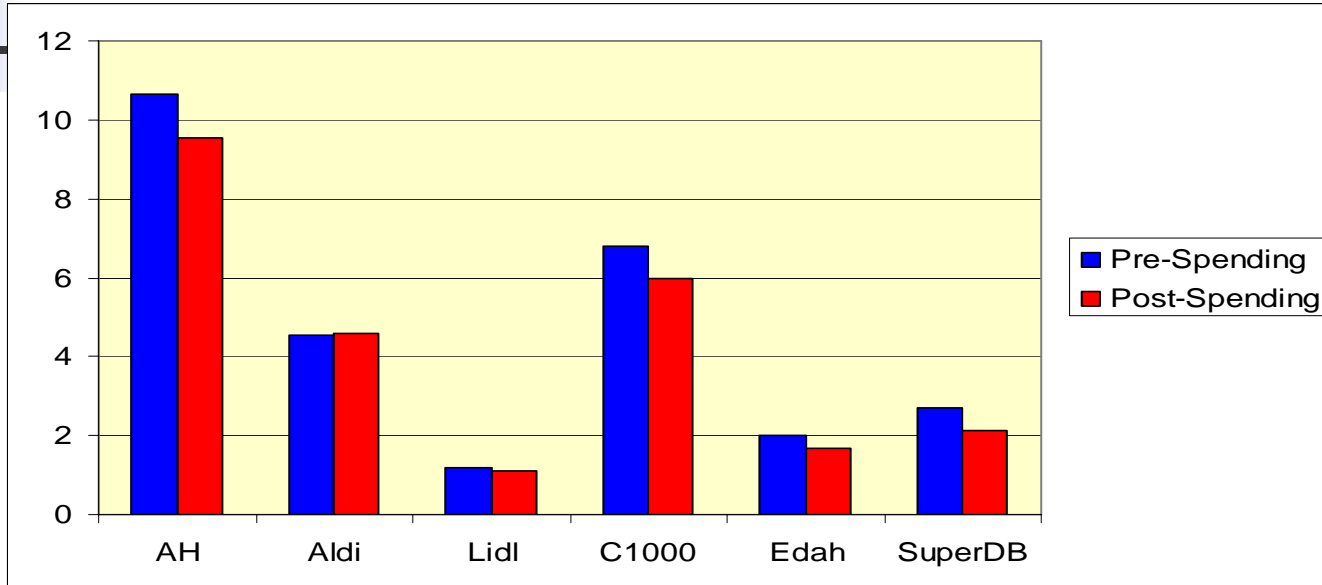
- Habit persistence: lagged expenditures
- Store shopping Benefits:
 - Price *image* of store i for household h
 - Produce quality *image* of store i for household h
 - Floor space closest store i to household h (m^2)
 - Feature in week t (store choice equation)
 - Display in week t (expenditure equation)



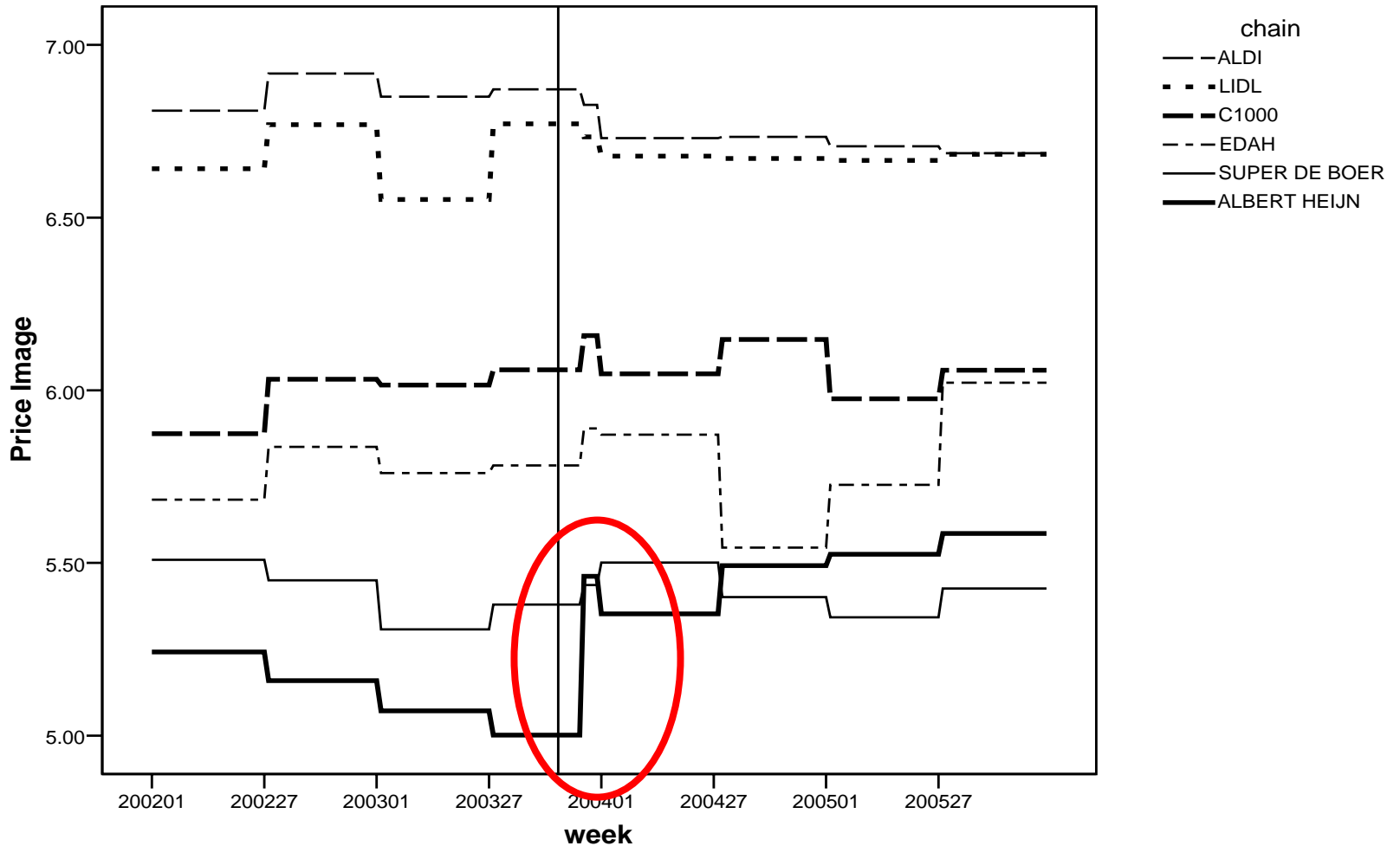
Explanatory variables (x_{hit})

- Store Shopping Costs:
 - Distance (km) between household h and store i
 - Checkout waiting time *image* of store i for h
 - Household h 's basket price for store i in week t
- PW variables:
 - Price War step variable (cumulative # items reduced: LT)
 - Price War pulse variable (additional # items reduced: ST)
 - Interactions with basket price and price image
- Seasonality: Christmas, New Year's Day, Easter

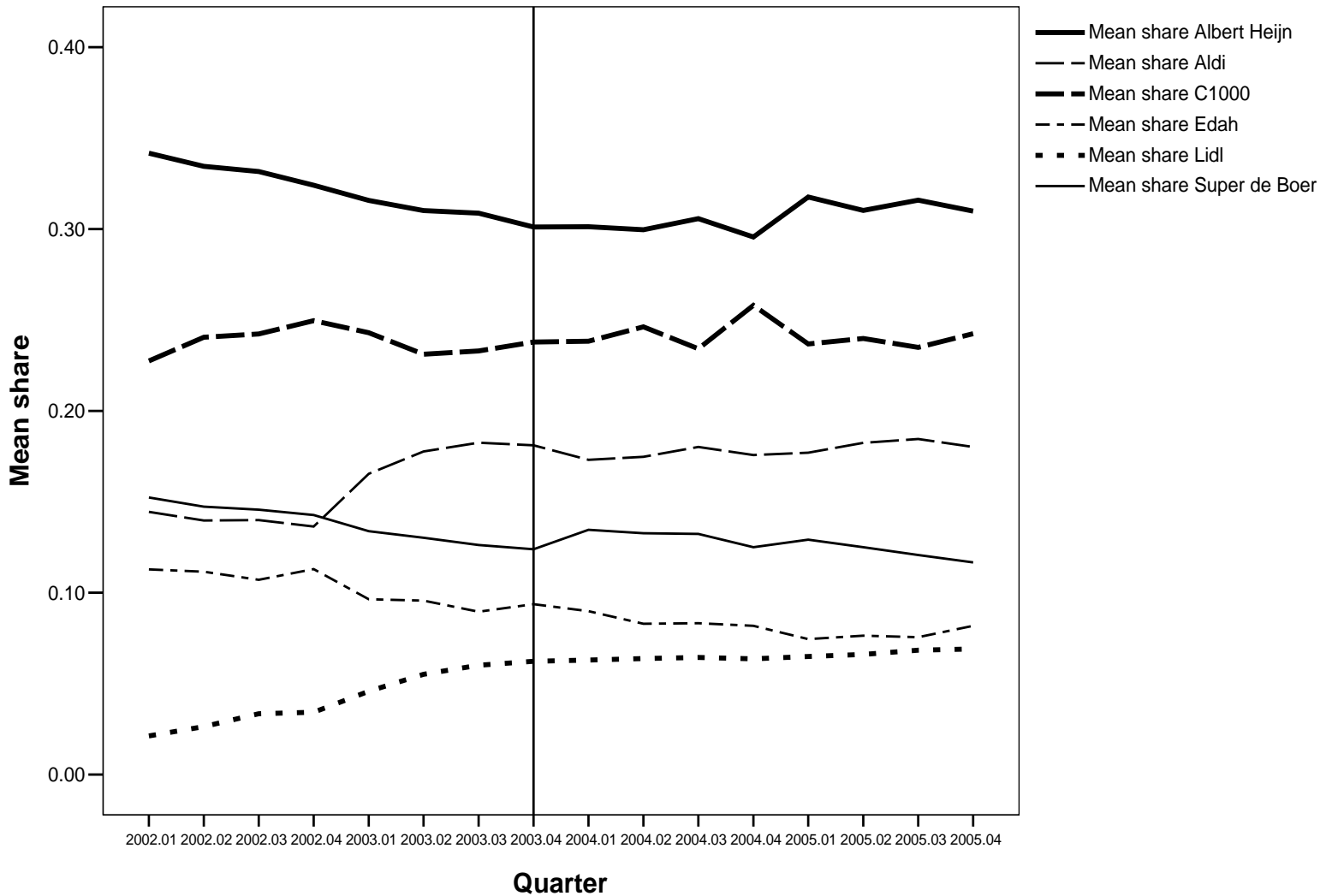
Pre- and postwar performance (after controlling for other changes)



AH improves price image



AH halts market share decline



Decomposing LT traffic change:

(increased PI sensitivity)

	Net change	Chain intercept	Relative basket price	PI	
AH	-.38	-.41	.00	.04	
Aldi	.00	-.23	.01	.23	
C1000	-.41	-.51	.01	.08	
SdB	-.18	-.19	.00	.00	

... and basket size change

(increased basket price and PI sensitivity)

	Net Change	Chain Intercept	Relative Basket Price	Price Image
AH	-.72	-.61	-.02	-.15
Aldi	.02	-.10	-.01	.12
C1000	-.43	-.51	-.04	.10
SdB	-.38	-.29	.01	-.11



Key Take-aways

- Retailing price wars do encourage consumers to reconsider legacy players, shop around *and* increase spending in the *short run*.
- However, the *long-run* revenue impact of a price war is *negative* for legacy players who fail to obtain a better-than-average price positioning
→ increased price (image) sensitivity



Key Take-aways

- Faced with new price competition, *initiating* a major price drop may enable you to
 - *improve price image* without hurting your quality image
 - *halt market share and stock price decline*
- Consumers benefit (slightly lower prices) and suffer (margin pressure reduces R&D, service, assortment, distribution?)