Promotion Pass-Through and Consumer Search: An Empirical Analysis

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Retail price pass-through is one of the most important issues facing manufacturers of consumer packaged goods. Manufacturers would prefer retailers to completely pass-through trade deals to consumers. At the same time, they would rather retailers not pass-through wholesale price increases.

Our objective is to explain why the pass-through rate to negative wholesale price change (i.e. trade deals) is generally less than complete.

Short-run asymmetries can be incorporated as follows:

\[ \Delta p_t = \alpha_t + \beta_t \Delta w_{t-1} + \gamma_t \Delta p_{t-1} + \epsilon_t \]

where:
- \( p_t \): retail price, \( w_t \): wholesale price
- \( i \): brand, \( t \): week, and \( r \): retailer
- \( \Delta \) : the absolute value of the own-price elasticity of demand
- \( \gamma_t \) : the threshold parameter

Regime-dependant Pass-through Rates

<table>
<thead>
<tr>
<th>Regime</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Retail prices are weakly exogenous</td>
</tr>
<tr>
<td>(2)</td>
<td>Retail prices are relatively high</td>
</tr>
<tr>
<td>(3)</td>
<td>Retail prices are relatively low</td>
</tr>
</tbody>
</table>

From the co-integration relationship:

\[ ECT_{r,t} = c_t - \beta_t \cdot \Delta w_{t} - \gamma_t \cdot \Delta p_{t-1} \]

Therefore, Regime (1): retail prices are relatively low
Regime (2): retail prices are relatively high
Regime (3): no-adjustment range

\[ \gamma_t = 0.0237 \quad \gamma_t = 0.1028 \]

**Objectives**

Our objective is to explain why the pass-through rate to negative wholesale price change is generally less than complete.

We test whether incomplete pass-through is due to consumer search behavior or market power.

We apply our test to wholesale and retail breakfast cereal price data for five retailers in the Los Angeles MSA market over a 156 weeks.

**Modeling Approach**

We follow Hansen’s (1999) Panel Threshold Error Correction Model (TECM):

\[ \Delta p_t = \alpha_t + \beta_t (\Delta w_t \gamma_t \Delta p_{t-1}) \]

\[ ECT_{r,t} = c_t - \beta_t \cdot \Delta w_{t} - \gamma_t \cdot \Delta p_{t-1} \]

\[ \Delta p_t = \alpha_t + \beta_t (\Delta w_t \gamma_t \Delta p_{t-1}) \]

where:
- \( \alpha_t \)
- \( \beta_t \)
- \( \gamma_t \)

**Background & Motivation**

Retail price pass-through is one of the most important issues facing manufacturers of consumer packaged goods. Manufacturers would prefer retailers to completely pass-through trade deals to consumers. At the same time, they would rather retailers not pass-through wholesale price increases to consumers. Asymmetry pass-through between rising and falling wholesale prices (e.g. “rockets and feathers”) is commonly thought to result from retailers exercising market power, while recent theoretical work argues that this conventional phenomenon may instead be due to consumer search behaviors and retailers rational responses.

Most empirical literature consider retailer response to negative wholesale price change (i.e. trade promotions) and not upward movements in wholesale prices as well. In this study, we offer a treatment of pass-through that is relevant to both wholesale price discounts and price increases.

**Data and Time Series Properties**

- Weekly price data (03/01/2007-03/31/2010)
- Five retail companies in LA
- Retail prices from INFOSCAN
- Wholesale prices from PROMODATA
- Ten primary brands
- Hadri (2000)’s Panel Unit-Root Test
- Pedroni (2000)’s Panel cointegration Test
- There is a long-run relationship between retail and wholesale prices for each brand and retailers
- Wholesale prices are weakly exogenous

**Conclusions**

1. Our results that are contrary to the conventional wisdom:
   - Market power cause retail prices to fall quickly and rise slowly
   - Consumer search costs cause retail prices to rise quickly and fall slowly precisely the “rockets and feathers” phenomenon

2. Deal pass-through can be expected to be higher among more powerful retailers, and those that offer a low search cost environment.

3. Manufacturers and wholesalers interested in improving pass-through performance would be well served to consider ways in which they can reduce consumer search costs.