

Submission for the award of Doctor of Philosophy

Better Together?

An examination of price promotion and advertising interaction effects

by

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Research Abstract

In consumer packaged goods industries, manufacturers allocate the vast majority of their marketing budgets towards two activities - price promotions (i.e., temporary price reductions) and advertising (Ailawadi, Beauchamp, Donthu et al. 2009). It has often been proposed that manufacturers should coordinate the two activities, as a way to leverage potentially large interaction effects and increase their overall sales effects (e.g., Jones 1995b, Neslin, Powell and Stone 1995, Belch and Belch 2003, Tellis 2004).

Price promotion and advertising interaction effects are where the combined sales from conducting price promotions and advertising together are either greater than (positive interaction effect), or less than (negative interaction effect), when each activity is conducted separately. Despite the pronouncements of large interaction effects (e.g., Jones 1995b, Neslin et al. 1995, Belch and Belch 2003, Tellis 2004), the limited research to date has not provided clear nor consistent findings as to the likelihood of these interaction effects (Kanetkar, Weinber and Weiss 1992, Roberts 1996, Naik, Raman and Winer 2005, Taylor 2010). Accordingly, there have been repeated calls for research to further investigate and understand price promotion and advertising interaction effects (e.g., Deighton, Henderson and Neslin 1994, Vakratsas and Ambler 1999, McDonald and Sharp 2005, Ailawadi et al. 2009).

The overarching objective of this thesis is to determine whether concurrent price promotions and advertising are likely to produce positive, negative, or no interaction effects. Novel areas of investigation include whether these interaction effects vary across different conditions, including the characteristics of the price promotions (i.e., in-store displays, feature support) and the advertising (i.e., recency and number of advertising exposures).

The research objective is addressed through the analysis of single-source-data, which combines consumer panel sales data with advertising exposure data for the same households. The main advantage of analysing single-source data is the ability to isolate the sales effects of advertising – and hence interaction effects – at the individual household level. The single-source data analysed in this thesis comes from German and United States datasets, which included different consumer goods categories and were collected 13 years apart. Through analysing sub-brands/SKUs from both datasets, the replicability of results is tested across a wide range of varied conditions (e.g., different countries, categories, and time periods).

Price promotion and advertising interaction effects are investigated through analysing whether the size advertising exposure sales effect vary between purchase occasions with and without price promotions. If advertising has a stronger sales effect when coinciding with price promotions, it is interpreted as a positive interaction effect. Alternatively, if advertising is weaker when coinciding with price promotions, it is interpreted as a negative interaction effect. Advertising sales effects are measured using a contingency table approach, focusing on the absolute changes in share of purchase occasions (i.e., percentage point difference in share between the purchases from advertising exposed/unexposed households). Additionally, the robustness of interaction effects across the different sub-brands/SKUs are assessed using two-way repeated measures ANOVA analysis.

The research identifies a pattern of positive price promotion and advertising effects. Average sales effects from advertising exposure (within 28 days prior to purchase) are found to be 1.4 times larger among purchase occasions with promotions compared to those without promotions. These results indicate that the combined sales effects were greater when the activities were conducted concurrently rather than separately. Similar results are identified across the German and US datasets, providing greater confidence in the accuracy and generalisability of the findings.

Further evidence of positive interaction effects is identified through replicating the interaction effect analysis across different types of promotions and advertising exposures. The average sales effects from advertising are larger with promotions, regardless of whether the promotions are supported with in-store displays or features (e.g., catalogue or newspaper). Positive interaction effects are again found when measuring advertising effects separately to account for the recency and number of times consumers have been exposed to advertising. This analysis also reveals recency of exposure as a possible moderating variable, with larger interaction effects with more recent exposures (i.e., within last 7 days vs 8-28 days).

This thesis provides a significant empirical contribution to the knowledge of price promotion and advertising sales effects, through providing evidence of positive interaction effects. For academia, the thesis also affords notable methodological contributions for measuring the interaction effects and highlights the need for researchers to account for these interaction effects. For industry practitioners, the findings provide guidance on how to plan and coordinate price promotions and advertising to meet business objectives, and further demonstrates the value of collecting and analysing single-source data.

Keywords: *Price Promotions, Advertising, Interaction Effects, Single-Source Data Analysis*