

**2016 Econometric Report on the Tons Impact of the
Paper and Packaging Board Consumer Promotion Program**
by Harry Kaiser, PhD

A preliminary study of the Paper and Packaging Board's (P+PB) advertising campaign suggests it helped generate in excess of 500,000 tons of consumption in 2016. Charged with stemming the decline in paper, the advertising campaign helped mitigate the loss of a minimum of 210,000 short tons in paper consumption. The campaign is also charged with growing demand on the packaging side, where it helped create in excess of 290,000 short tons of packaging consumption.

This study was based on an econometric model of the paper and packaging industry I created working with the companies supporting the paper checkoff. The model uses statistical techniques and monthly consumption and related data since 2013 to determine what the main drivers of consumption are for the industry. Five separate models for bond and writing paper, other printing and writing paper, containerboard, paperboard, and kraft paper products were constructed in order to evaluate impact.

On the paper side, the paper models include a host of demand drivers including changes in white collar employment, sales of electronic substitutes for paper (e.g., E-readers), price of paper products, monthly seasonality variables and advertising campaign expenditures. For the packaging demand models, demand drivers include: E-commerce, price of packaging products, food sales, seasonality variables and advertising campaign expenditures.

The econometric model then determines whether any of these potential demand drivers have a significant effect on consumption, and, if so, how big of an effect. The advantage of these models is that the impact of the advertising campaign can be netted out from the impact of these other demand drivers. The models are designed to compare historical consumption trends, showing what happened in the market with the advertising present, and simulating what would have happened without the advertising campaign.

The P+PB advertising campaign seems to have had a positive and statistically significant impact on both paper and packaging products. These results were used to simulate what consumption would have been in the absence of the advertising campaign for 2016.

Under the most conservative scenario, preliminary data shows that the advertising campaign generated in excess of 500,000 short tons of incremental paper and packaging consumption. For paper, the advertising campaign helped slow the decline in consumption in 2016. This means a minimum of 210,000 tons were protected from loss on the paper side. For packaging products, the campaign contributed to the growth in consumption in 2016 of at least 290,000 tons.

This analysis is still preliminary and needs to be trended over time, but this initial look at consumption data is positive in terms of the overall contribution the advertising campaign made to increased tons. Looking at the models, which track but do not predict, tons attributable to various market factors, modeling reflects both protecting tons and creating tons for the industry.

I will continue to add additional data to the model in 2018 and 2019 so I can provide the industry and the USDA with a report in 2019 that includes a data update through 2018. In addition, the final economic evaluation will include a return-on-investment calculation for the five-year advertising campaign.

Harry M. Kaiser, PhD

Harry M. Kaiser is the Gellert Family Professor of Applied Economics and Management at Cornell University. He teaches and conducts research in the areas of price analysis, marketing, industrial organization, policy and quantitative methods. Professor Kaiser has written 100 journal articles, three books, 17 book chapters and over 200 research bulletins in these areas. The primary focus of Professor Kaiser's research has been on the social implications of agricultural demand and supply policies aimed at improving producers' economic welfare. Since 1994, Professor Kaiser has been the director of the Cornell Commodity Promotion Research Program. Much of his research focuses on the market-wide economic effects of commodity advertising and promotion programs.