Distribution and Market Share

Kenneth C. Wilbur [a,*], Paul W. Farris [b,1]

[a] *Rady School of Management, University of California, San Diego, United States*
[b] *Business Administration, University of Virginia Darden School of Business Administration, United States*

Abstract

This paper presents findings from a census of more than 79,000 stock-keeping units (SKUs) in 37 consumer packaged goods categories totaling $55 billion in annual revenue. It shows that, in 86 percent of product categories, the relationship between market share and retail distribution is increasing and convex at the SKU level. The degree of convexity is greater in categories with higher revenues and more concentration in market shares. The relationship is also typically convex within leading brands' SKU portfolios, showing that the "double jeopardy" phenomenon of low share and distribution not only affects small brands competing against market leaders, it also affects low-share SKUs within a category leader's product line. Holdout evidence shows that the distribution/share relationship within a brand's portfolio of existing SKUs usually holds for new SKUs as well. We explain how knowledge of the distribution/share relationship can help to improve a brand's go-to-market decisions for new SKUs.
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Introduction

Retail distribution plays a critical role in determining market shares: a product must be offered for sale before it can be purchased. Distribution also contributes to sales in less obvious ways. It can generate consumer awareness, change the set of competitors facing the product and alter the consumer's perception of the retailer and the brand.

Given this critical role of distribution in determining market outcomes, a large empirical literature has examined the interplay between distribution and market share. For example, Ailawadi (2001) reviewed a stream of literature that showed that manufacturers exercise substantial influence over their retailers. Nijs et al. (2010) substantiated this recently by estimating a mean distribution channel pass-through elasticity of 0.41. Bucklin, Siddarth, and Silva-Russo (2008) exploited variation in consumers' proximity to auto dealers to construct household-level measures of distribution intensity, estimating the elasticity of sales with respect to distribution to be 0.6 in the automotive

industry. Ataman, van Heerde, and Mela (2009) found that the sales elasticity of distribution is 0.74 in packaged goods categories, about six times larger than the advertising elasticity.

A particularly important and robust finding within the literature on distribution is the "double jeopardy" phenomenon that high-share brands tend to sell more "per point" of retail distribution than small-share brands. This relationship has been observed using cross-sectional brand data in several categories (Farris, Olver, and de Kluyver, 1989; Reibstein and Farris, 1995) and over time for a single brand that rapidly gained and lost share and distribution (Farris et al., 1989). Convex relationships have also been documented in the UK (Nuttal, 1965), Japan (Borin, Van Vranken, and Farris, 1991) and the Netherlands (Verbeke, Clement, and Farris, 1994).

The largest-scale confirmation of this convex relationship was offered by Kruger and Harper (2006). These authors investigated brand-level data on 143,356 brands in 263 product categories. They found that the cross-sectional relationship between brands' market share and distribution levels was convex 95 percent of the time, with exceptions mainly occurring in categories that were ancillary to larger categories or evolving over time.

The "double jeopardy" problem faced by small brands has been attributed to three related factors: consumer preferences, retailer assortment strategies and retailer expectations. Manufacturers with strong consumer preference can "pull" consumer traffic into the store. The strongest form of

* Corresponding author. Tel.: +1 919 926 8536.
  E-mail addresses: ken@kennethcwilbur.com, kennethcwilbur@gmail.com (K.C. Wilbur), FarrisP@Virginia.Edu (P.W. Farris).
  URLs: http://kennethcwilbur.com (K.C. Wilbur), http://faculty.darden.virginia.edu/farrisp/ (P.W. Farris).
  [1] Tel.: +1 434 924 0524.
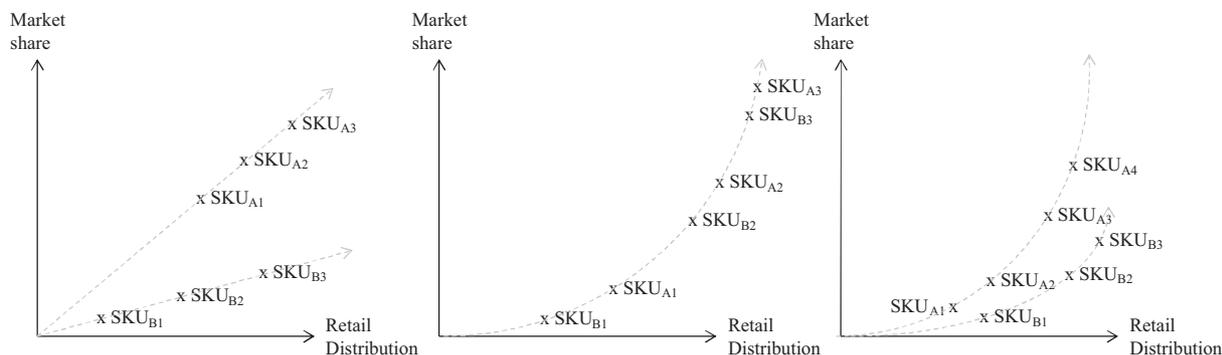
Letters indicate brands, numbers indicate SKUs offered by a brand

Fig. 1. Conceptual explanations for brand-level double jeopardy findings.

preference might include search loyalty or switching stores when a particular brand or stock-keeping unit (SKU) is not available (Ailawadi, Harlam, Cesar, and Trounce, 2006). Meanwhile, many retailers strategically limit their assortments. Therefore, a limited-assortment retailer is disproportionately likely to stock a strong brand in order to minimize customer traffic lost to competing retailers. Limited-assortment retailers offer manufacturers less competition within the store and therefore yield greater sales per point of distribution. As a brand's market share and distribution increase, it tends to enter into progressively less competitive retail environments (Farris et al., 1989; Reibstein and Farris, 1995). These assortment decisions are based on retailer expectations of consumer behavior, therefore those expectations may become self-fulfilling, especially for small brands.

Despite all this work, much remains unknown about the relationship between distribution and market share at the level of the individual stock-keeping unit (SKU). Yet this is the level at which many marketing decisions (go-to-market, pricing, trade promotions, etc.) are actually made and implemented.

For example, it remains unknown whether "double jeopardy" is exclusively a brand-level phenomenon. The brand-level measurements could be implied by phenomena that exists at either the brand level alone, at the SKU level alone, or both. A purely brand-level phenomenon is illustrated in the first panel of Fig. 1, which shows a setting in which market share per point of distribution is constant across SKUs but varies across brands A and B. However, a different explanation for the same brand-level pattern is illustrated in the second panel. This diagram shows a single convex relationship at the SKU level where variation only occurs in the locations of competing brands' SKUs. Such variation could occur if, for example, Brand A entered the market first; Bronnenberg, Dhar, and Dube (2007) provided compelling evidence that the order of entry of consumer package goods (CPG) brands into local geographic markets created competitive advantages over rivals that lasted for generations. When aggregating over these SKUs to brand-level phenomena, a researcher would find that brand A has both more distribution and more share per point of distribution, even though the relationship between distribution and market share really occurred at the SKU level. The analysis below finds that the reality is closest to the illustration in the third panel, in which there is a convex relationship across

SKUs within a brand, and that relationship varies across brands within the category.

To the best of our knowledge, this article offers the first evidence that the relationship between market share and distribution is increasing and convex at the SKU level; all prior evidence used brand-level data. We also uncover the product category characteristics which influence the shape of the relationship. The degree of convexity increases with category revenues and concentration in category market shares. Finally, we show that the relationship varies across brands within a category, and that SKU portfolios offered by bigger brands more frequently exhibit convex distribution/share relationships.

We also show how this relationship can be useful to a manufacturer. We consider a manufacturer seeking to detect and avoid unprofitable go-to-market decisions for new SKUs. Hold-out evidence shows that the relationship between distribution and market share estimated using a brand's existing SKUs is normally a good predictor of patterns displayed by new SKUs introduced in future periods. However, in the exceptions when the current brand-specific relationship is not a good predictor for new SKUs, new SKUs tend to perform very badly. In other words, the relationship among a brand's existing SKUs never under-predicts new SKUs' performance. Therefore, the relationship exhibited by a brand's existing SKUs can serve as a useful check on managers' pre-launch distribution assumptions for potential new SKUs.

Before proceeding, it is important to emphasize what this paper does not seek to do. The goal here is to establish empirical generalizations about the nature of share–distribution relationships using data from many categories, but we do not attempt to estimate any causal effect of retail distribution on market share. Any such estimate would need to rely on a plausibly exogenous source of variation to disentangle the effect of distribution on sales from the effect of sales on distribution or to eliminate other unobserved factors.[2] Such effects are interesting and important

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[2] One might initially think that past distribution could serve as an instrument to identify the direct impact of current distribution on market share, as distribution is strongly autocorrelated. However, there is ample reason to believe that there are other current determinants of market share (e.g., consumer preferences, prices