Abstract: The Effect of Contract Type on Retailer Product Choice

Anna Devlin
The Robert H. Smith School of Business, The University of Maryland, College Park, Maryland 20742,
adevlin@rhsmith.umd.edu,
Wedad Elmaghraby
The Robert H. Smith School of Business, The University of Maryland, College Park, Maryland 20742,
welmaghr@rhsmith.umd.edu,

Rebecca Hamilton
The Robert H. Smith School of Business, The University of Maryland, College Park, Maryland 20742,
rhamilto@rhsmith.umd.edu

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While researchers have studied both theoretically and experimentally how buyback contracts affect retailer order quantities, one question that remains unaddressed is how these contracts affect other inventory decisions such as which product to stock. We consider a retailer facing an inventory planning decision for a new selling season for a particular type of product. In practice, suppliers offer multiple product options to this retailer that may vary on attribute level such as color or shape. The retailer must then make the joint decision of which products to stocks and how much to stock (i.e. retail assortment planning). Although similar in cost or retail price, since these product options differ on the attribute level, they are categorized by differing levels of demand variability based on current consumer preferences. A product with a larger demand variance has greater demand risk and, subsequently, greater variance in future profits. This setting has been studied extensively in marketing and has also gained traction recently in operations literature. Although research exists that studies the question of which products to stock, the focus of this stream is to link the product selection decision with consumer demand functions. We attempt to incorporate contract type into the retail assortment planning decision to examine if contract type impacts the retailers choice between product options.

We begin with a pilot study to test for emergent patterns in which participants are presented with either a wholesale price or buyback contract and must select between a high demand variance and low demand variance product. We found, surprisingly, that there is a preference for the risky product when the retailer is offered the wholesale price contract. Not only does this violate rational behavior, but we also find that the risk-sharing contract leads to less risky behavior. To gain perspective on the counterintuitive results found in the pilot study, we turn to Behavioral Finance, a field that studies how investors select what to

invest in and how much to invest. The decision to purchase a risky versus a safe product can be viewed similarly and therefore, Behavioral Finance would suggest that Prospect Theory plays a role in determining which option to select.

With this framework in mind, we investigate in this paper the question of how contract type influences a retailer's choice of which product to stock. Our first study looks at retailer product choice decisions under different contracts and examines Prospect Theory as an explanation of behavior. In Study 2, we also allow participants to make the joint product/quantity decision to determine if making the joint decision alters behavior. We find that the results of our second study are consistent with the first. In addition, we find that the quantity decision is characterized by behavioral biases found in prior research suggesting that the two decisions do not impact each other and are considered in isolation.