An introduction to “The effect of information on supply chain coordination: A model of value discounting”

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1.What is the question?

Most of researchers used to assume that retailers make decisions to maximize their profits when they get frequent sale feedback. However, recent studies found Loss aversion may be a better assumption than the prior one in real world. Hence, Loss aversion is also applied to some papers, but some academics find the loss aversion model has problems in buyback and revenue sharing contracts. Mathematically, buyback and revenue sharing contracts are equivalent, so the quantities in loss aversion model should be the same, but they are not. Therefore, authors want to propose an alternative model to account for this and explain why there is an information effect on the ordering behaviors.

2.Why should we care about it?

Many industries in Taiwan are relate to supply chain coordination, such as online shopping, computer, semiconductor, and cellphone. If some retailers in these industries behave loss aversion,then suppliers will face to problem about inventory control because of failure of the model. If the industry has short product life cycle, they will get great income loss. Through the research, suppliers can predict that retailers’ order quantities get less when they get frequent feedback information, and hence suppliers can change their strategy to avoid these problems and improve the supply chain coordination.

3.What is the answer to the question?

By application of framing effect, the authors find the effect of loss aversion on the retailers' order decisions is more severe under the buyback contract than that under the revenue sharing one. To solve it, they construct a discounting model to account for framing effect. They think the framing effect of discounting is significant when retailers receive frequent updates on sale information. If this is true, suppliers should use loss aversion model with discounting to examine retailers' ordering behavior, and the order quantities under the buyback contract is less than that under the revenue sharing one. When retailers do not observe the feedback information, the effect of framing is very weak. Therefore, a model with only loss aversion should be used to examine the retailers' ordering behavior, and the order quantities are equal under two circumstances. That is, the discounting effect becomes weaker in the absence of information.

4.How did the author get there?

The authors use newsvendor model with loss aversion and discounting to construct a theory. Besides, they design experiments about contract (buyback/revenue sharing) and feedback (with/without) to collect data, and find that there is an effect of feedback on order quantity under both the buyback and revenue sharing contracts.