

Riding the Saddle

Question 1:

The purpose of Bass's original model as well as the extension is to model and be able to predict (given start data) the penetration of a new product into the market. This model's purpose in addition to the original Bass model is to enable applying a model that is more flexible and more representative of the reality.

The models takes into account several assumptions:

- The market is based on two different population segments with different behaviors.
- For each segment, there are two factors that affect the rate of diffusion, internal and external influences (q and p). In addition to these, there is an inter-segment factor described as internal influence that acts on both segments.
- Another rather trivial assumption is that the rate of influence is affected by the time and that at some time T , all the population will turn to be adopter of the product in question.
- Other assumptions that are also included in the original Bass model: no competition, no disadoption, p and q are constant over time, constant m and fully connected social network.

The parameters and variables are very similar in this case and depend on how the simulation is performed. The parameters for this model are p, q and m . However, if we want to see how the model's behavior change according to different p, q or m then these can be variables.

The assumptions that are relaxed in this case are:

- The model is no longer homogenous.
- Although it occurs only once, p and q change over time and enables the model to be more flexible and explain different stages in the diffusion.

Question 2:

C. I tried to run the solver as instructed to get saddles, I tried to play with the initialization parameters and play with the constraints, however the results look like they could be better.

Product	pi	qi	qm	qim	Saddle	Saddle Height	R-square
PC's	0.009	0.01	0.5	0.096	Yes	0.25	0.95
Mobile Phone	0.001	0.5	0.5	0.197	No	X	0.98
VCR's	0.007	0.11	0.07	0.5	Yes	0.18	0.84
VideoGames	0.25	0.25	0.4	0.4	Yes	0.22	-8.14
CD Players	0.009	0.32	0.5	0.058	No	X	0.85
Answering Mc	0.102	0.21	0.102	0.051	No	X	1.65
Cordless Phone	0.5	0.5	0.5	0.046	No	X	1.67

D. For the products with the saddle, I would suggest to check if the curve after the saddle is still going up or if it has reached the maximum and is now descending.

If the curve is still going up, then marketing should continue as product is still on the rise and the company should use the momentum to maximise profit as the main market is only starting to adopt it after the innovators segment is done. On the other hand, if the curve after the saddle has already reached a maximum and is now descending, this would mean that the product's life is over and that there is no point in investing since both innovators and main markets already adopted the market and there is no more potential adopters.

Thank you Renana and Sria for this great course! I truly enjoyed it!