**History**

Back at MarketShare, we estimated a direct and several indirect models. For example, the direct model would be in the form,

1. .

The indirect models might be,

1. , and,
2. .

We would estimate these models in log space where k is arbitrary constant or maybe a trend or something else.

We would find indirect effect by substituting (2) and (3), back into (1),

1. ,
2. .

Please excuse me if I messed up any of the arithmetic in working out the exponents.

We would then say that the total elasticity of OOH is .1, where .05 is direct, 0.02 is through Src1, and 0.03 is through Src2. Equivalently for TV.

MarketShare struggled and never came up with a way to give any credit to search with this direct/indirect approach.

**Today**

Moving forward out of MarketShare, we can look at the exponents as coefficients of any log-log model and it doesn’t matter that they are not elasticities. What matters is that the independent variables are the same across the different models.

My direct model is the same, but I don’t create indirect models. Instead, I create models of sales leaving out the indirect routes and infer calculate their contributions.

1. ,
2. .

In these models, the TV and OOH coefficients are fit and the coefficients for Src1 and Src2 are taken from the direct model and forced.

Looking at OOH,

* The direct coef is 0.05 as before,
* The indirect coef through Src1 is 0.02 = 0.07 – 0.05
* The indirect coef through Src2 is 0.03 = 0.08 – 0.05

We can go through the algebra and get a restated model, but I don’t do this. I find the indirect contributions by comparing the decomps of (1) (6) and (7). I then allocate the indirect contributions in some “fair” way to OOH, TV, Src1 and Src2. Doing this in proportion to the coefficients from (1) is a decent method. It just isn’t right to use the old MarketShare way and give all the credit to TV and OOH.