We start by assuming that:

Alternatively:

We assume that:

iff and

where

This implies that:

Finally, we assume that:

To make this equivalent to our TSB prior, we numerically find that and when . I set because this parameter is really hard to estimate while simultaneously enforcing a small number of groups. I assume that comes from a discrete uniform distribution:

Finally, I assume that:

#-------------------------------------------------------------------------------------

FCD’s

* For

For , then

For , then

For , then

* For
* For

This implies that

Notice that the sufficient statistics are and .

* For

This implies that

* For

This implies that

* For

Taking logs, this becomes: