Details on Median rather than mean after log transform

$$\widehat{mean}(\log(y)) = b_0 + b_1 x$$

$$\widehat{mean}(\log(y|x=1)) - \widehat{mean}(\log(y|x=0)) = b_1$$

STUCK here b/c $mean(\log(y)) \neq \log(mean(y))$

Now try w/ medians

$$\widehat{median}(\log(y)) = b_0 + b_1 x$$

$$\widehat{median}(\log(y|x=1)) - \widehat{median}(\log(y|x=0)) = b_1$$

$$\Rightarrow \log(\widehat{median}(y|x=1)) - \log(\widehat{median}(y|x=0)) = b_1$$ can change order!

$$\log\left(\frac{median(y|x=1)}{median(y|x=0)}\right) = b_1$$

$$\Rightarrow \frac{median(y|x=1)}{median(y|x=0)} = e^{b_1}$$ A ratio of medians!