

$$P\left(\frac{A}{B} > x\right)$$

$$= P(A > Bx)$$

$$= \int_{b=0}^{2k} \int_{bx}^{\infty} P_A(a, b) da db$$

$$\text{vs } \int_{b=0}^{2k} \int_{bx}^{\infty} P_A(a, b) da db$$

$$= \int_{b=0}^{2k} \int_{bx}^{\infty}$$

$$\int_{bx}^{kx} P_{A|B}(a|b) da > \int_{kx}^{(2k-b)} P_{A|B}(a|b) da$$

Sufficient condition
 is for the mean of
 A to be $\leq k$
 and A be unimodal
 i.e. don't need $EA=0$!