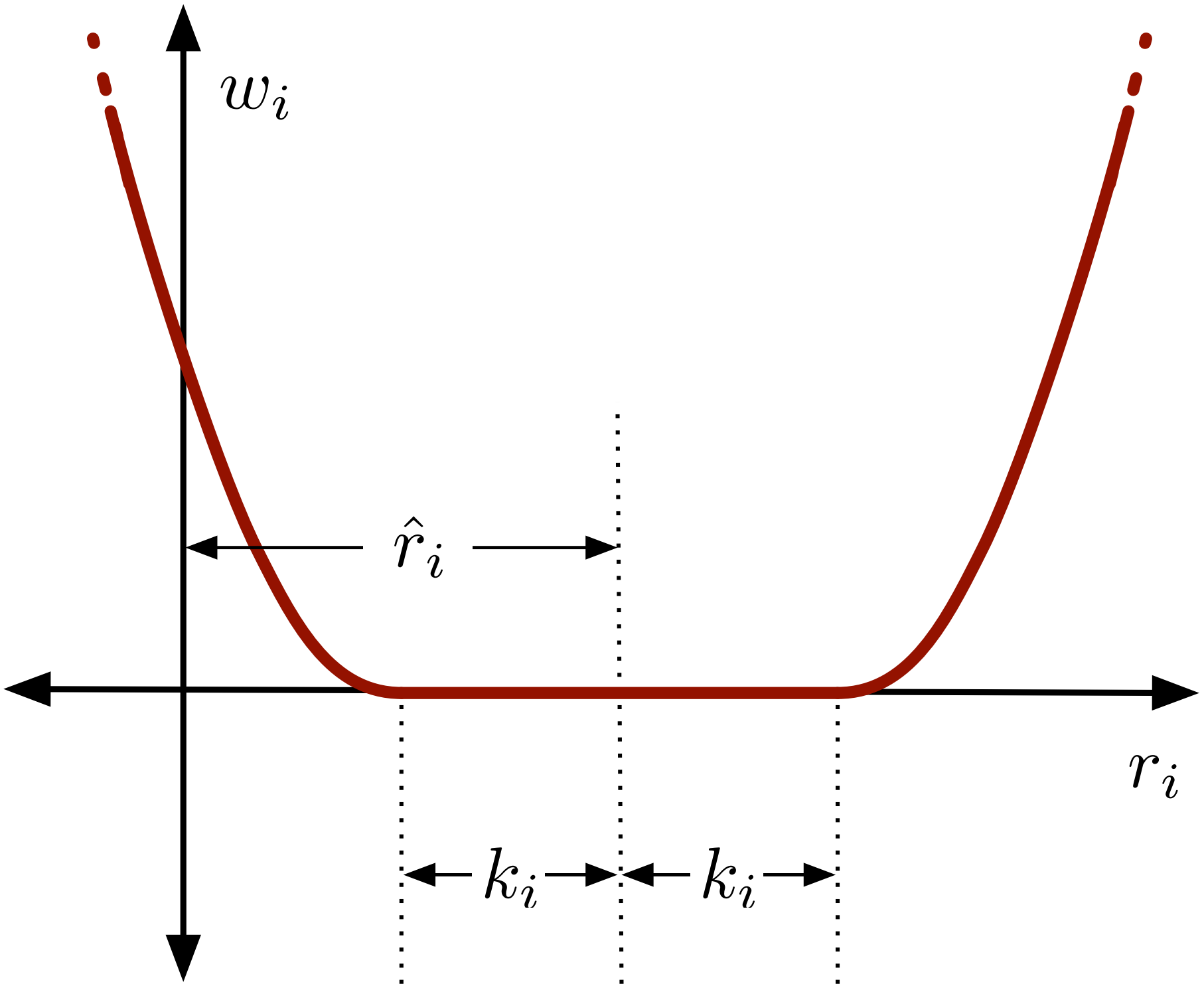
w_i
$\hat{r}_i$
r_i
k_i
k_i