t	IMV_t	P_t	N_t	
1	I_1	P_1	N_1	$I_1 = P_1 \cdot N_1$
2	I_2	P_2	N_2	$I_2 = P_2 \cdot N_2$

$$AC = \frac{P_1 N_1 + P_2 N_2}{N_1 + N_2}$$

$$I_1 = I_2$$

$$AP = \frac{P_1 + P_2}{2}$$

$$AP - AC = \frac{P_1 + P_2}{2} - \frac{P_1 N_1 + P_2 N_2}{N_1 + N_2}$$

$$= \frac{(P_1 + P_2)(N_1 + N_2)}{2(N_1 + N_2)} - \frac{P_1 N_1 + P_2 N_2}{N_1 + N_2}$$

$$= \frac{\frac{N_1}{2P_2}(P_1 - P_2)^2}{(N_1 + N_2)} > 0$$

Hence $AP > AC$ as long as

$$P_1 \neq P_2$$