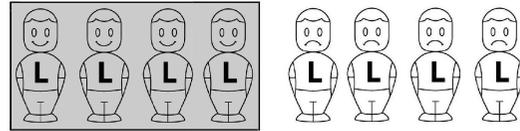


Why insurance works better with some adverse selection

1. No adverse selection

Risk premiums = 0.01



Weighted average premium

0.016

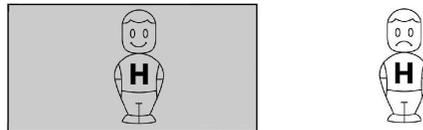
Loss coverage (expected losses compensated by insurance)

50%

$$\frac{(4 \times 0.01 + 1 \times 0.04)}{5}$$

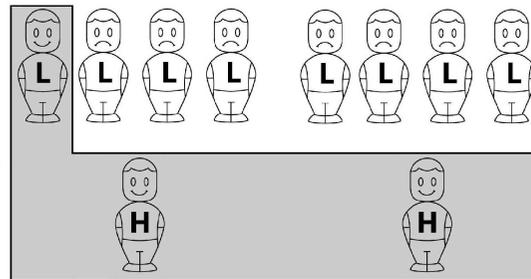
$$\frac{(4 \times 0.01 + 1 \times 0.04)}{(8 \times 0.01 + 2 \times 0.04)}$$

Risk premiums = 0.04



2. Some adverse selection

Pooled premiums = 0.03



0.03

56%

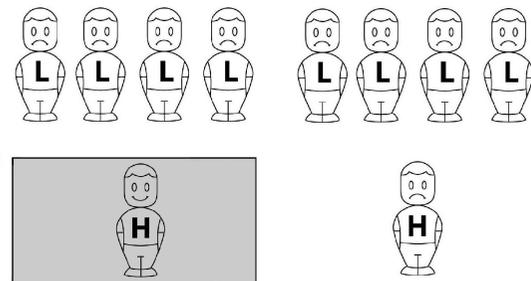
$$\frac{(1 \times 0.01 + 2 \times 0.04)}{3}$$

$$\frac{(1 \times 0.01 + 2 \times 0.04)}{(8 \times 0.01 + 2 \times 0.04)}$$

Loss coverage is *increased* by the "right amount" of adverse selection ...

3. Severe adverse selection

Pooled premiums = 0.04



0.04

25%

... but *reduced* by "too much" adverse selection.