

9/11

From  $z = -(w/\gamma) + (1/2)$  we have

$$z = 0 \Rightarrow w = \frac{\gamma}{2} \quad \text{and}$$

$$z = \frac{\gamma-1}{\gamma} = 1 - \frac{1}{\gamma} \Rightarrow 1 - \frac{1}{\gamma} = -w/\gamma + \frac{1}{2}$$

$$\Rightarrow \gamma - 1 = -w + \frac{\gamma}{2} \Rightarrow w = 1 - \frac{\gamma}{2}.$$

Note that  $w^+$  corresponds to  $z_2 = 0$ , which is unstable for  $\lambda > 1$ , and  $w^-$  corresponds to  $z_2 = \frac{\gamma-1}{\gamma}$  which is stable for  $1 < \lambda < 3$ .