

$$\frac{p_{ik}}{\widetilde{p}_{ik}} - 1 = \tau_{ik} - 1 + \frac{t_{ik}}{\widetilde{p}_{ik}}, \quad \text{with } \tau_{ik} \geq 1 \text{ and } t_{ik} \geq 0 \quad (1)$$