

$$\delta S_{Y^*Y} \delta \Pi(\theta_b)[\Pi] = \sum_{a|tranche} \delta \theta \left\{ \ln \left(\Pi_s \Pi - 1 \right) \delta \Pi \delta \Pi(\theta_b) - \left(\ln \left(1 - \Pi \Pi_s \right) \right) \delta \Pi_s \delta \Pi(\theta_b) \right\} (\theta_a),$$

Or
$$2\pi \Pi_s = L + (\Delta \star \Pi) \delta \theta,$$