***Supplemental Appendix**: Quasilinearity and Its Discontents: Public-Good Regulation with Consumer Risk Aversion and Income Effects:*

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Here I substantiate that benefit risk aversion can favor prices in a single-person economy for the Weitzman quadratic case (note 8). I set $u(m) = m$ here, assume that θ and η distributed according to a positive density on closed intervals, $[\eta_0, \eta_1]$ and $[\theta_0, \theta_1]$, with $\eta_0 >\mid \theta_0 \mid$ and $\theta_1 < 0$. I index U smoothly by risk aversion: $U(z, \rho) = \rho v(z) + (1 - \rho)z$, with v strictly increasing and strictly concave. I set $\alpha = \beta = 1$ so that the regulator is indifferent between prices and quantities when $\rho = 0$. I give conditions such that, if v is sufficiently concave, then a small increase in ρ favors prices. Let $\tilde{TS}(\eta, \theta)$ be total surplus at the optimal fixed price and $\bar{TS}(\eta, \theta)$ the total surplus at the optimal fixed quantity in a quasilinear economy. A simple point is that $\tilde{TS}$ and $\bar{TS}$ are not ranked by second order stochastic dominance, even though they have the same mean and the variance of $\tilde{TS}$ is higher, so the expectation of some strictly increasing concave v is higher for prices. The more subtle point is that any sufficiently-concave v suffices. I compare the surplus under prices and quantities in the worst state of the world for each. The worst benefit state is η_0 for either policy, and the worst technology state under quantities is θ_0. Under prices, the worst technology state could be either θ_0 or θ_1. Total surplus under prices at the worst benefit state is $(\eta_0 + \theta)s(\bar{p}, \theta) - s(\bar{p}, \theta)^2$, where $\bar{p}$ is the

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optimal fixed price in Weitzman and $s(\bar{p}, \theta) = \theta + (\mathbb{E}[\eta] - \mathbb{E}[\theta])/2$. Differentiate $\tilde{TS}(\eta_0, \theta)$ with respect to θ to find its sign is $-\mathbb{E}[\eta] + \mathbb{E}[\theta] + 2\eta_0$. There are two cases. First the derivative is positive, in which case the worst state is (η_0, θ_0) for both policies. In this case (adapting Schlee (2025, eq. (35)), to the notation here)

$$\tilde{TS}(\eta_0, \theta_0) - \bar{TS}(\eta_0, \theta_0) = (\theta_0 - \mathbb{E}[\theta])(\eta_0 - \mathbb{E}[\eta]) > 0. \tag{1}$$

It follows that, if v is sufficiently concave, then a small increase in ρ favors prices. Without benefit uncertainty, the conclusion fails. The second case is that the worst state under prices is (η_0, θ_1). (This requires that benefit is uncertain.) In this case, one can show that $\tilde{TS}(\eta_0, \theta_1) - \bar{TS}(\eta_0, \theta_0) > 0$ provided that $\mathbb{E}[\theta]$ is at least equal to the midpoint of its support (qualitatively the same condition as in Schlee (2025)). If $\mathbb{E}[\theta]$ is less than the midpoint and $\mathbb{E}[\eta]$ is large enough, then a small increase in ρ favors quantities for a concave-enough v.