$$(1-\theta)\frac{\Lambda_t}{P_t}\exp\left\{\left[\frac{\lambda\sigma_\varepsilon^2+(1-\lambda)\sigma_z^2}{\lambda^2\sigma_\varepsilon^2+(1-\lambda)^2\sigma_z^2+\sigma_v^2}(\lambda\log\in_t+(1-\lambda)\log Z_t+v_t)\right]+\frac{1}{2}\Omega_s\right\}-\Lambda_t\Phi_p\left(\frac{P_t}{P_{t-1}}-1\right)\frac{Y_t}{P_{t-1}}+\xi_t-\beta\Phi_p\left[-\frac{P_{t+1}}{P_t^2}\left(\frac{P_{t+1}}{P_t}-1\right)\Lambda_{t+1}Y_{t+1}\right]=0$$

Since ε_{jt} and z_t are Gaussian, the conditional variance Ω_s will not depend on the observed s_{jt} and will be given by

$$\Omega_s=\mathrm{var}\left[(\varepsilon_{jt}+z_t)\middle|s_{jt}\right]=\mathrm{var}(\varepsilon_{jt}+z_t)-\frac{\left[\mathrm{cov}(\varepsilon_{jt}+z_t,s_{jt})\right]^2}{\mathrm{var}(s_{jt})}$$

$$\mathrm{var}(s_{jt})=\lambda^2\sigma_\varepsilon^2+(1-\lambda)^2\sigma_z^2+\sigma_v^2$$

$$\mathrm{cov}(\varepsilon_{jt}+z_t,s_{jt})=\lambda\sigma_\varepsilon^2+(1-\lambda)\sigma_z^2$$

$$s_{jt}=\lambda\log\in_{jt}+(1-\lambda)\log Z_t+v_{jt}=\lambda\varepsilon_{jt}+(1-\lambda)z_t+v_{jt}$$