Observation equation for relative price of Investment

$$\Delta \log(Z_t^I A_t) = \log(Z_t^I) + \log(A_t) - \log(Z_{t-1}^I) - \log(A_{t-1})$$

$$= \log(Z_t^I) - \log(Z^I) - \left[\log(Z_{t-1}^I) - \log(Z^I)\right]$$

$$+ \log\left(\frac{A_t}{A_{t-1}}\right)$$

$$= \hat{Z}_t^I - \hat{Z}_{t-1}^I + \log(\mu_t^a) - \log(\mu^a) + \log(\mu^a)$$

$$= \hat{\mu}_t^a + \hat{Z}_t^I - \hat{Z}_{t-1}^I + \log(\mu^a)$$