$$\mathbf{b2t}_{i\_} := \mathbb{E}\left[\alpha_i\, \mathbf{a}_i - \beta_i\, \mathbf{t}_i,\ \xi_i\, \mathbf{x}_i + \eta_i\, \mathbf{y}_i,\ 1 + \epsilon\, \beta_i\, \mathbf{a}_i + \mathbf{O}[\epsilon]^2\right]$$

$$\mathbf{t2b}_{i\_} := \mathbb{E}\left[\alpha_i\, \mathbf{a}_i - \tau_i\, \mathbf{b}_i,\ \xi_i\, \mathbf{x}_i + \eta_i\, \mathbf{y}_i,\ 1 + \epsilon\, \tau_i\, \mathbf{a}_i + \mathbf{O}[\epsilon]^2\right]$$