

Define  $a_{m_{i,j \rightarrow k}} = E_{\{i,j\} \rightarrow \{k\}}[(\alpha_i + \alpha_j) \xi_i + \xi_j]_{\$k}$ ,  $(e^{-\gamma \alpha_j} \xi_i + \xi_j) a_k, (e^{-\gamma \alpha_j} \xi_i + \xi_j) x_k, 1]_{\$k}$

$b_{m_{i,j \rightarrow k}} = E_{\{i,j\} \rightarrow \{k\}}[(\beta_i + \beta_j) y_i + y_j]_{\$k}$ ,  $e^{(e^{-\epsilon \beta_{i-1}} \eta_j) y_k} b_k, (\eta_i + \eta_j) y_k]_{\$k}$