$$h^s = \sum_{i=1}^{n} a_i^{s-1} g_i$$

$G = (g_1, \ldots, g_n)$ $d \times n$ matrix

$a_s = (a_1^{s-1}, \ldots, a_n^{s-1})'$ $n \times 1$ vector

$h^s = G a_s$

$[h^1, \ldots, h^T] = G[a_1, \ldots, a_T]$

$d \times T$

$y_t = \sum_{s=0}^{H} \langle h^s, u_{t-s} \rangle = \langle Hvec, Uvec \rangle = Hvec'Uvec$

$Hvec = [(h^0)', \ldots, (h^H)']' = vect(Hmat)$

$d(H+1) \times 1$

$Uvec = [u_t', \ldots, u_{t-H}']'$

$d(H+1) \times 1$