ARDL(2,2)

$$(1-\theta_1 L-\theta_2 L^2)y_t = \delta + (\delta_0+\delta_1 L+\delta_2 L^2)x_t + v_t$$

$$y_t = (1-\theta_1 L-\theta_2 L^2)^{-1}\delta + (1-\theta_1 L-\theta_2 L^2)^{-1}(\delta_0+\delta_1 L+\delta_2 L^2)x_t + (1-\theta_1 L-\theta_2 L^2)^{-1}(\beta_0+\beta_1 L+\beta_2 L^2+\cdots)\varepsilon_t$$

Mult both sides $(1-\theta_1 L-\theta_2 L^2)$

$$(\beta_0+\beta_1 L+\beta_2 L^2+\cdots)$$
$$-\beta_0\theta_1 L-\beta_1\theta_1 L^2-\beta_2\theta_1 L^3$$
$$-\beta_0\theta_2 L^2-\beta_1\theta_2 L^3-\beta_2\theta_2 L^4$$

$$=\beta_0+(\beta_1-\beta_0\theta_1)L+(\beta_2-\beta_1\theta_1-\beta_0\theta_2)L^2$$
$$+(\beta_3-\beta_2\theta_1-\beta_1\theta_2)L^3+\cdots$$

$\delta_0=\beta_0$

$\delta_1=\beta_1-\beta_0\theta_1 \quad \beta_1=\delta_1+\delta\theta_1$

$\delta_2=\beta_2-\beta_1\theta_1-\beta_0\theta_2 \quad \beta_2=\delta_2+\beta_1\theta_1+\beta_0\theta_2$

$\delta_3=0 \quad \beta_3=\beta_2\theta_1+\beta_1\theta_2$

$\beta_4=\beta_3\theta_1+\beta_2\theta_2$

$\vdots$