a) $\dot{x}_j = (\ldots) - \underbrace{\dot{\beta}\beta^{-1}}_{\mu} x_j$

constant

$\beta = V_R$

$\dot{\beta} = \dot{V}_R = 0$

$\therefore$ no μ b/c V_R constant

So...

$$\dot{m} = r_x u - (\mu + \theta_m) m + \lambda$$
$$\dot{p} = r_L w - (\mu + \theta_p) p$$

$$\Downarrow$$

$$\dot{m} = r_x u - \theta_m m + \lambda$$
$$\dot{p} = r_L w - \theta_p p$$