```mathematica
In[ ]:= h⁺[p_, θ_, n_] := pⁿ / (pⁿ + θⁿ)
       h⁻[p_, θ_, n_] := 1 - h⁺[p, θ, n]

       tmax = 200;

       With[{ma = 1., mb = 1., mc = 1.,
             na = 2.2, nb = 2.2, nc = 2.2,
             θa = 0.28, θb = 0.28, θc = 0.28,
             ka = 1., kb = 1., kc = 1.,
             γa = 1., γb = 1., γc = 1.,
             δa = 1., δb = 1., δc = 1.},

         sol = NDSolve[{rₐ'[t] == ma * (h⁻[p_c[t], θc, nc] + h⁻[p_b[t], θb, nb]) - γa * rₐ[t],
                        r_b'[t] == mb * (h⁺[pₐ[t], θa, na]) - γb * r_b[t],
                        r_c'[t] == mc * (h⁻[p_b[t], θb, nb]) - γc * r_c[t],
                        pₐ'[t] == ka * rₐ[t] - δa * pₐ[t],
                        p_b'[t] == kb * r_b[t] - δb * p_b[t],
                        p_c'[t] == kc * r_c[t] - δc * p_c[t],
                        rₐ[0] == 0,
              r_b[0] == 0, r_c[0] == 0, pₐ[0] == 0, p_b[0] == 0, p_c[0] == 0},
                        {rₐ, r_b, r_c, pₐ, p_b, p_c}, {t, 0, tmax}]];


       ParametricPlot[Evaluate[{pₐ[t], p_b[t]} /. First[sol]], {t, 0, tmax},
        AxesLabel → {pₐ, p_b}, ColorFunction → "Rainbow", PlotRange → Full]

       Plot[Evaluate[{pₐ[t], p_b[t], p_c[t]} /. First[sol]],
        {t, 0, tmax}, PlotLegends → {"pₐ", "p_b", "p_c"}]
```

Out[ ]=

Out[∘]=