The solution of model REG (Godley – Lavoie [2007]: 170 – 186).

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Temporary equilibrium:

$$Y^N = \frac{1}{1-\frac{\mu^N\mu^S}{q^N q^S}} * \left\{ \frac{\alpha_1^N(1-\theta^N)r_{-1}B_{h-1}^N + \alpha_2^N V_{-1}^N + G^N}{q^N} + \frac{\mu^S}{q^N} * \frac{\alpha_1^S(1-\theta^S)r_{-1}B_{h-1}^S + \alpha_2^S V_{-1}^S + G^S}{q^S} \right\}$$

where: $q^N = 1-\alpha_1^N(1-\theta^N)+\mu^N$

$q^S = 1-\alpha_1^S(1-\theta^S)+\mu^S$

Steady state

$$Y^{N*} = \frac{1}{1-\frac{\mu^N\mu^S}{Q_4^N Q_4^S}} * \left[\frac{G^N}{Q_4^N} + \frac{\mu^S}{Q_4^N} * \frac{G^S}{Q_4^S} \right]$$

where: $Q_4^N = (\theta^N+\mu^N)*(1-Q_3^N)$

where: $$Q_3^N = \frac{(1-\theta^N)*r*Q_1^N*\frac{1-\alpha_1^N}{\alpha_2^N}*Q_2^N}{\theta^N+\mu^N}$$

where: $$Q_2^N = \frac{1-\theta^N}{1-(1-\theta^N)*r*Q_1^N*\frac{1-\alpha_1^N}{\alpha_2^N}}$$

$$Q_1^N = \lambda_0^N + \lambda_1^N r - \lambda_2^N \frac{\alpha_2^N}{1-\alpha_1^N}$$

$Q_1^S,\ Q_2^S,\ Q_3^S, Q_4^S$ are the same (switching N for S everywhere and vice versa). The solution for the South region is the same.

Comments:

- in the book the tax rates (θ) are identical in the two regions, the above solution works with the more general case, where the tax rates can differ.
- in the excel file I used different parameter sets; one of them belongs to a special interpretation of the model, where:
    - the government and the central bank belongs to the North region;
    - there are no government expenditures in the South;

- there is taxation in the South region, but its special: it can be interpreted as profit income flow from the South to the North;
- the money serves as world currency;
- the wealth of north households is something like international reserves: it contains mainly bills issued by the North government and no interest bearing currency;
- in the steady state the trade balance of the South is in surplus the income balance is in deficit (interest payments inflow profits /tax/ outflow). The opposite will be true for the North.

I labeled this the USA / China case, because it gives back some features of the global imbalances. Some experiments can be made by changing the south taxation, the parameters of the consumption function in the South etc.