$$\begin{cases} IS: Y = c_0 + c_1(Y-T) + \overline{I} + d_1 Y - d_2 i + G \\ LM: \dfrac{M}{P} = f_1 Y - f_2 i \end{cases}$$

$$\begin{cases} Y = c_0 - c_1 T + \overline{I} + G - d_2 i + (c_1 + d_1) Y \\ \dfrac{M}{P} = f_1 Y - f_2 i \end{cases}$$

$$\textit{definiamo}\ \ c_0 - c_1 T + \overline{I} + G = A$$

$$\begin{cases} d_2 i = A - (1 - c_1 - d_1) Y \\ \dfrac{M}{P} = f_1 Y - f_2 i \end{cases}$$

$$\begin{cases} i = \dfrac{A}{d_2} - \dfrac{(1 - c_1 - d_1)}{d_2} Y \\ \dfrac{M}{P} = f_1 Y - f_2 i \end{cases}$$

$$\begin{cases} i = \dfrac{A}{d_2} - \dfrac{(1 - c_1 - d_1)}{d_2} Y \\ \dfrac{M}{P} = f_1 Y - f_2 \left[\dfrac{A}{d_2} - \dfrac{(1 - c_1 - d_1)}{d_2} Y \right] \end{cases}$$

Andiamo avanti con la seconda equazione:

$$\frac{M}{P} = f_1 Y + f_2 \frac{(1 - c_1 - d_1)}{d_2} Y - f_2 \frac{A}{d_2}$$

$$f_1 Y + f_2 \frac{(1 - c_1 - d_1)}{d_2} Y = \frac{M}{P} + f_2 \frac{A}{d_2}$$

$$Y \left[f_1 + f_2 \frac{(1 - c_1 - d_1)}{d_2} \right] = \frac{M}{P} + f_2 \frac{A}{d_2}$$

$$Y = \frac{1}{\left[f_1 + f_2 \frac{(1 - c_1 - d_1)}{d_2} \right]} \frac{M}{P} + \frac{1}{\left[f_1 + f_2 \frac{(1 - c_1 - d_1)}{d_2} \right]} f_2 \frac{A}{d_2}$$

$$Y = \frac{1}{\left[f_1 + f_2 \frac{(1 - c_1 - d_1)}{d_2} \right]} \frac{M}{P} + \frac{1}{\left[\frac{f_1 d_2 + f_2 (1 - c_1 - d_1)}{d_2} \right]} f_2 \frac{A}{d_2}$$

$$Y = \frac{1}{\left[f_1 + f_2 \frac{(1 - c_1 - d_1)}{d_2} \right]} \frac{M}{P} + \frac{1}{\left[f_1 d_2 + f_2 (1 - c_1 - d_1) \right]} f_2 A$$

$$Y = \frac{1}{\left[f_1 + f_2 \frac{(1 - c_1 - d_1)}{d_2} \right]} \frac{M}{P} + \frac{1}{\left[\frac{f_1 d_2}{f_2} + (1 - c_1 - d_1) \right]} A$$

Inseriamo questo valore di Y nella prima equazione del sistema sopra:

$$i=\frac{A}{d_2}-\left[\frac{(1-c_1-d_1)}{d_2}\left[\frac{1}{\left[f_1+f_2\,\frac{(1-c_1-d_1)}{d_2}\right]}\frac{M}{P}+\frac{1}{\left[\frac{f_1 d_2}{f_2}+(1-c_1-d_1)\right]}A\right]\right]$$

$$i=\frac{A}{d_2}-\left[\frac{(1-c_1-d_1)}{d_2}\frac{1}{\left[f_1+f_2\,\frac{(1-c_1-d_1)}{d_2}\right]}\frac{M}{P}+\frac{(1-c_1-d_1)}{d_2}\frac{1}{\left[\frac{f_1 d_2}{f_2}+(1-c_1-d_1)\right]}A\right]$$

$$i=\frac{A}{d_2}-\frac{(1-c_1-d_1)}{d_2 f_1+d_2 f_2\,\frac{(1-c_1-d_1)}{d_2}}\frac{M}{P}+\left(\frac{(1-c_1-d_1)}{d_2}\frac{1}{\left[(1-c_1-d_1)+\frac{f_1 d_2}{f_2}\right]}\right)A$$

$$i=-\frac{(1-c_1-d_1)}{d_2 f_1+d_2 f_2\,\frac{(1-c_1-d_1)}{d_2}}\frac{M}{P}+\left(-\frac{A}{d_2}+\frac{(1-c_1-d_1)}{d_2\left[(1-c_1-d_1)+\frac{f_1 d_2}{f_2}\right]}\right)A$$

$$i=-\frac{1}{\frac{d_2 f_1}{(1-c_1-d_1)}+_2\frac{d_2 f_2}{d_2}}\frac{M}{P}+\left(\frac{\left[(1-c_1-d_1)+\frac{f_1 d_2}{f_2}\right]+(1-c_1-d_1)}{d_2\left[(1-c_1-d_1)+\frac{f_1 d_2}{f_2}\right]}\right)A$$

$$i=-\frac{1}{\frac{d_2 f_1}{(1-c_1-d_1)}+f_2}\frac{M}{P}+\left(\frac{\frac{f_1 d_2}{f_2}}{d_2\left[(1-c_1-d_1)+\frac{f_1 d_2}{f_2}\right]}\right)A$$

$$i=-\frac{1}{\frac{d_2 f_1}{(1-c_1-d_1)}+f_2}\frac{M}{P}+\left(\frac{1}{d_2\left[(1-c_1-d_1)+\frac{f_1 d_2}{f_2}\right]\frac{f_2}{d_2 f_1}}\right)A$$

$$i=-\frac{1}{\frac{d_2 f_1}{(1-c_1-d_1)}+f_2}\frac{M}{P}+\left(\frac{1}{(1-c_1-d_1)\frac{f_2}{f_1}+d_2}\right)A$$

$$Y^*=\frac{1}{(1-c_1-d_1)\frac{f_2}{d_2}+f_1}\cdot\frac{M}{P}+\frac{1}{(1-c_1-d_1)+d_2\,\frac{f_1}{f_2}}\cdot A$$

$$i^*=-\frac{1}{f_2+\frac{d_2 f_1}{1-c_1-d_1}}\cdot\frac{M}{P}+\frac{1}{(1-c_1-d_1)\frac{f_2}{f_1}+d_2}\cdot A$$

$\dfrac{\partial Y}{\partial \frac{M}{P}}=\dfrac{1}{(1-c_1-d_1)\frac{f_2}{d_2}+f_1}=MOLTIPLICATORE$ della politica monetaria

$\dfrac{\partial Y}{\partial A}=\dfrac{1}{(1-c_1-d_1)+d_2\,\frac{f_1}{f_2}}=MOLTIPLICATORE$ della politica fiscale