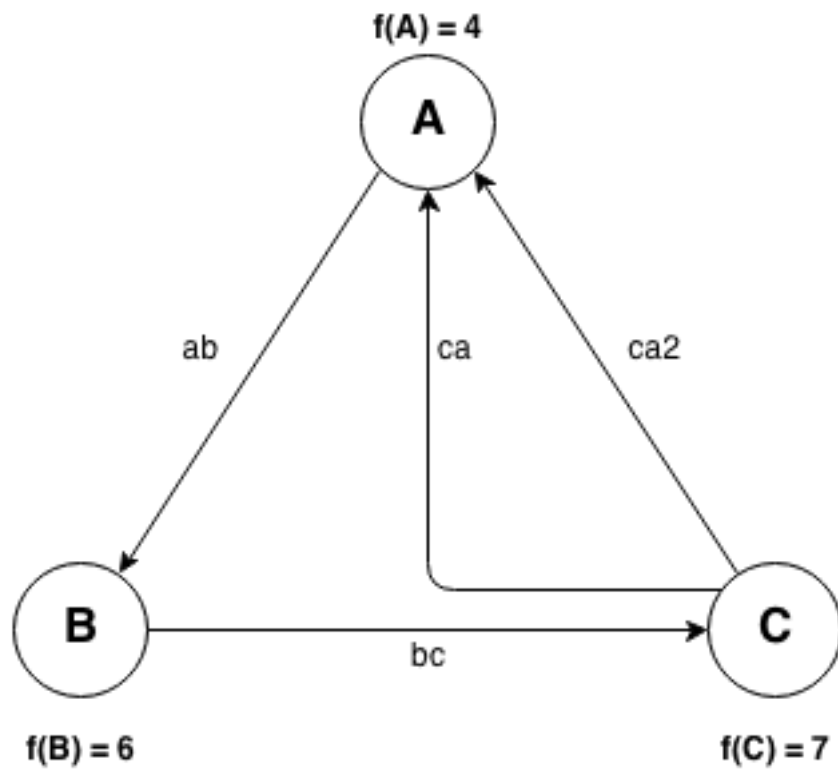


Computing debt cuts leading to global zero-equity - example

May 10, 2014



ab $(3, 0.14, \infty, 1)$,
bc $(2, 0.11, 4, 1.4)$,
ca $(2.5, 0.05, 6, 0.5)$,
ca2 $(1, 0.27, \infty, 1.7)$.

Equilibrium equation for node A :

$$\begin{aligned}
& \Xi(ab)e^{0.14(11.7-6)} - \Xi(ca)\left(1 + \frac{0.05}{6}\right)^{\lfloor 6(11.7-4) \rfloor} - \Xi(ca2)e^{0.27(11.7-4)} = \\
& \quad \frac{2.221 \Xi(ab) - 1.464 \Xi(ca) - 7.996 \Xi(ca2)}{\mathfrak{C}_{T_G}(3e^{0.14(6-1)}, 0.14, \infty, 6) -} \\
& \quad \mathfrak{C}_{T_G}(2.5\left(1 + \frac{0.05}{6}\right)^{\lfloor 6(4-0.5) \rfloor}, 0.05, 6, 4) -} \\
& \quad \mathfrak{C}_{T_G}(e^{0.27(4-1.7)}, 0.27, \infty, 4) = \\
& \mathfrak{C}_{T_G}(6.041, 0.14, \infty, 6) - \mathfrak{C}_{T_G}(2.975, 0.05, 6, 4) - \mathfrak{C}_{T_G}(1.861, 0.27, \infty, 4) = \\
& \quad 13.417 - 4.358 - 14.881 = \underline{-5.822}.
\end{aligned}$$

Equilibrium equation for node B :

$$\begin{aligned}
& \Xi(bc)\left(1 + \frac{0.11}{4}\right)^{\lfloor 4(11.7-7) \rfloor} - \Xi(ab)e^{0.14(11.7-6)} = \\
& \quad \frac{1.629 \Xi(bc) - 2.221 \Xi(ab)}{\mathfrak{C}_{T_G}(2\left(1 + \frac{0.11}{4}\right)^{\lfloor 4(7-1.4) \rfloor}, 0.11, 4, 7) - \mathfrak{C}_{T_G}(3e^{0.14(6-1)}, 0.14, \infty, 6) =} \\
& \quad \mathfrak{C}_{T_G}(3.632, 0.11, 4, 7) - \mathfrak{C}_{T_G}(6.041, 0.14, \infty, 6) = \\
& \quad 3.632\left(1 + \frac{0.11}{4}\right)^{\lfloor 4(11.7-7) \rfloor} - 6.041e^{0.14(11.7-6)} = \\
& \quad 5.918 - 13.417 = \\
& \quad \underline{-7.499}
\end{aligned}$$

Equilibrium equation for node C :

$$\begin{aligned}
& \Xi(ca)\left(1 + \frac{0.05}{6}\right)^{\lfloor 6(11.7-4) \rfloor} + \Xi(ca2)e^{0.27(11.7-4)} - \Xi(bc)\left(1 + \frac{0.11}{4}\right)^{\lfloor 4(11.7-7) \rfloor} = \\
& \quad \frac{1.464 \Xi(ca) + 7.996 \Xi(ca2) - 1.629 \Xi(bc)}{\mathfrak{C}_{T_G}(2.5\left(1 + \frac{0.05}{6}\right)^{\lfloor 6(4-0.5) \rfloor}, 0.05, 6, 4) + \mathfrak{C}_{T_G}(e^{0.27(4-1.7)}, 0.27, \infty, 4) -} \\
& \quad \mathfrak{C}_{T_G}(2\left(1 + \frac{0.11}{4}\right)^{\lfloor 4(7-1.4) \rfloor}, 0.11, 4, 7) = \\
& \quad \mathfrak{C}_{T_G}(2.976, 0.05, 6, 4) + \mathfrak{C}_{T_G}(1.861, 0.27, \infty, 4) - \mathfrak{C}_{T_G}(3.633, 0.11, 4, 7) = \\
& \quad 4.359 + 14.881 - 5.920 = \\
& \quad \underline{13.32}
\end{aligned}$$

Next, the matrix:

$$\begin{bmatrix} 2.221 & 0 & -1.464 & -7.996 & -5.822 \\ -2.221 & 1.629 & 0 & 0 & -7.499 \\ 0 & -1.629 & 1.464 & 7.996 & 13.32 \end{bmatrix}.$$

Add the first row to the second one:

$$\begin{bmatrix} 2.221 & 0 & -1.464 & -7.996 & -5.822 \\ 0 & 1.629 & -1.464 & -7.996 & -13.32 \\ 0 & -1.629 & 1.464 & 7.996 & 13.32 \end{bmatrix}.$$

Now add the second row to the third:

$$\begin{bmatrix} 2.221 & 0 & -1.464 & -7.996 & -5.822 \\ 0 & 1.629 & -1.464 & -7.996 & -13.32 \\ 0 & 0 & 0 & 0 & 0 \end{bmatrix}.$$

Divide the 1st row by 2.221:

$$\begin{bmatrix} 1 & 0 & -0.659 & -3.600 & -2.621 \\ 0 & 1.629 & -1.464 & -7.996 & -13.32 \\ 0 & 0 & 0 & 0 & 0 \end{bmatrix}.$$

Divide the 2nd row by 1.629:

$$\begin{bmatrix} 1 & 0 & -0.659 & -3.600 & -2.621 \\ 0 & 1 & -0.899 & -4.908 & -8.177 \\ 0 & 0 & 0 & 0 & 0 \end{bmatrix}.$$