

Chapter 3

Monetary and Wage Competition: Sequential Decisions

1) The static model. This chapter deals with competition between the European central bank, the American central bank, the German labour union, and the French labour union. As a point of reference, consider the static model. It can be represented by a system of three equations:

$$Y_1 = A_1 + 0.5\alpha M_{12} - 0.5\beta M_3 - \lambda W_1 - \mu W_2 \quad (1)$$

$$Y_2 = A_2 + 0.5\alpha M_{12} - 0.5\beta M_3 - \lambda W_2 - \mu W_1 \quad (2)$$

$$Y_3 = A_3 + \alpha M_3 - \beta M_{12} + \nu W_1 + \nu W_2 \quad (3)$$

This is a reduced form of the basic model, see Part One. Y_1 denotes German output, Y_2 is French output, Y_3 is American output, M_{12} is European money supply, M_3 is American money supply, W_1 is German nominal wages, and W_2 is French nominal wages. α , β , λ , μ and ν are positive coefficients with $\alpha > \beta$, $\lambda > \mu$ and $\lambda > \nu$.

According to equation (1), German output is a positive function of European money supply, a negative function of American money supply, a negative function of German nominal wages, and a negative function of French nominal wages. According to equation (2), French output is a positive function of European money supply, a negative function of American money supply, a negative function of French nominal wages, and a negative function of German nominal wages. According to equation (3), American output is a positive function of American money supply, a negative function of European money supply, a positive function of German nominal wages, and a positive function of French nominal wages.

The static model can be compressed to a system of two equations:

$$Y_{12} = A_{12} + \alpha M_{12} - \beta M_3 - (\lambda + \mu)W_1 - (\lambda + \mu)W_2 \quad (4)$$

$$Y_3 = A_3 + \alpha M_3 - \beta M_{12} + \nu W_1 + \nu W_2 \quad (5)$$

Here Y_{12} denotes European output. According to equation (4), European output is a positive function of European money supply, a negative function of American money supply, a negative function of German nominal wages, and a negative function of French nominal wages.

2) The dynamic model. At the beginning there is unemployment in Germany, France and America. More precisely, unemployment in Germany is high, and unemployment in France is low. The target of the European central bank is full employment in Europe. The instrument of the European central bank is European money supply. The target of the American central bank is full employment in America. The instrument of the American central bank is American money supply. The target of the German labour union is full employment in Germany. The instrument of the German labour union is German nominal wages. The target of the French labour union is full employment in France. The instrument of the French labour union is French nominal wages.

We assume that the central banks and the labour unions decide sequentially. First the central banks decide, then the labour unions decide. In step 1, the European central bank and the American central bank decide simultaneously and independently. In step 2, the German labour union and the French labour union decide simultaneously and independently. In step 3, the European central bank and the American central bank decide simultaneously and independently. In step 4, the German labour union and the French labour union decide simultaneously and independently. And so on.

Now have a closer look at step 1. The European central bank and the American central bank decide simultaneously and independently. The European central bank sets European money supply, forming rational expectations of American money supply. And the American central bank sets American money supply, forming rational expectations of European money supply. On this basis, the dynamic model can be characterized by a system of four equations:

$$\bar{Y}_{12} = A_{12} + \alpha M_{12} - \beta M_3^e - (\lambda + \mu)W_1 - (\lambda + \mu)W_2 \quad (6)$$