Answers to Chapter 1

Exercise 3.

we will play a little bit with "FRED". the objectiv is to show some macroeconomic aggregates over time, and also how nice this web funcionality is for students in need of macroeconomic data.

Exercise 6

All you need to know in order to solve this exercise is the following:

- Parameters: they reflect the magnitude of the impact one variable exerts upon another variable;
- Exogenous variables: they are known to the modeller, they are determined outside the process we are analysing.

– Endogenous variables: they are determined by the system we are analysing; they are the unknowns which are determined by the level of parameters (usually constant) and the level of the exogenous variables (which may change over time, due to exogenous forces.

Therefore, if our functions are presented as

$$L^s = \bar{l} + \bar{a}W \qquad (1)$$

$$L^d = \bar{f} - W \qquad (2)$$

we may see imediatelly that we get:

parameters: $\bar{a}$

exogenous variables: $\bar{l}$, $\bar{f}$

endogenous variables: L^d, L^s, W

Answering directly to the questions in this exercise is now an easy task.

6.a

Parameter $\bar{a}$ gives us by how much L^S changes when w changes one unit. For example, if $\bar{a}=10$, then when w increases one unit, L^S will increase 10 units.

6.b

Already answered above.

6.c

The equilibrium in the labor market is given by the following condition

$$L^d = L^S \qquad (3)$$

Then, we have

$$\bar{f} - w = \bar{l} + \bar{a} w$$

$$w(1+\bar{a}) = -\bar{l} + \bar{f}$$

$$w^* = \frac{\bar{f} - \bar{l}}{1+\bar{a}} \qquad (4)$$

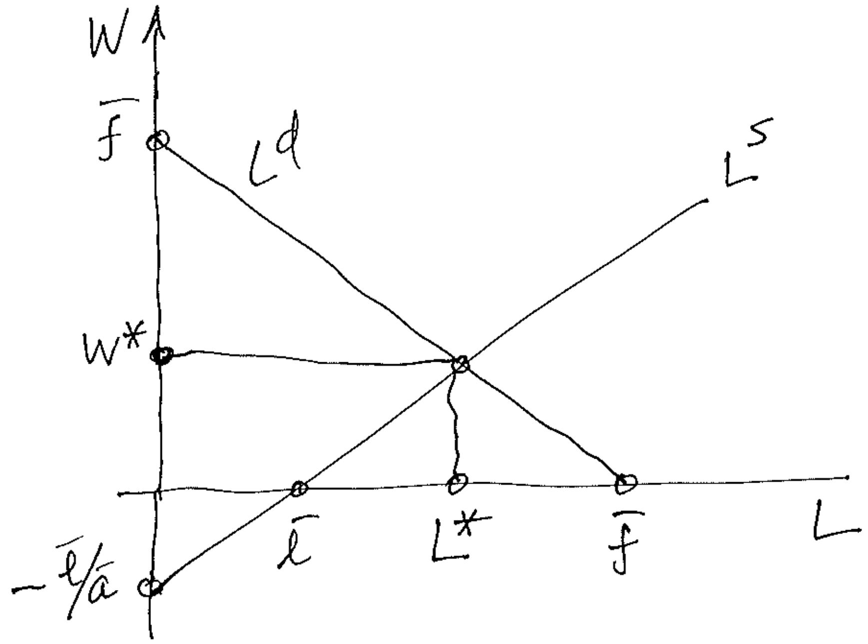
We use a star on top of w to say that

this level of w corresponds to the equilibrium level of wages in the labor market.

Once we have determined the level of w^*, it is now easy to obtain the equilibrium levels of L^d and L^s. As they have to be equal, given our condition (3), we can just insert eq. (4) into eq. (2) and will obtain

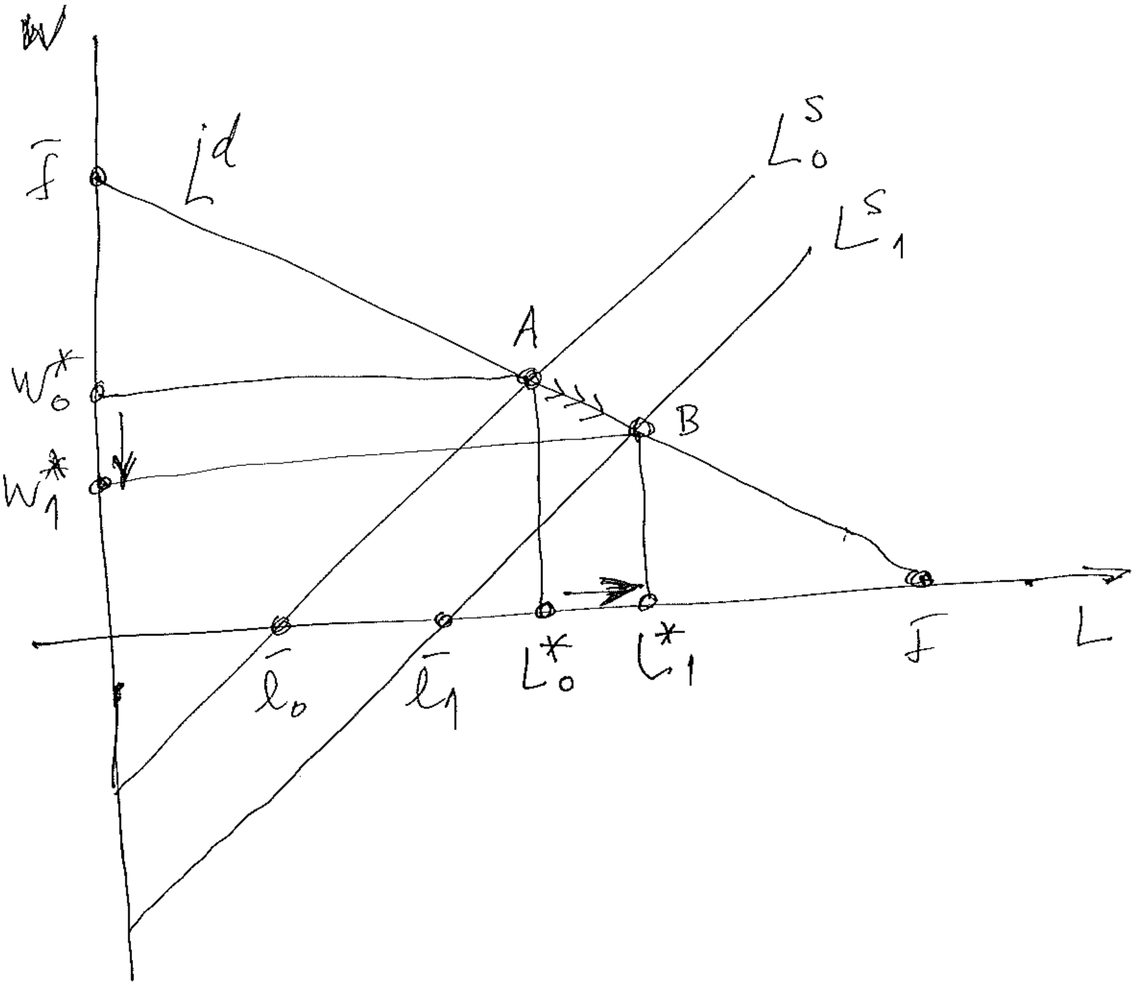
$$L^* = \bar{f} - \frac{\bar{f} - \bar{l}}{1+\bar{a}} = \frac{\bar{f}\bar{a} + \bar{l}}{1+\bar{a}} \quad (5)$$

this equilibrium can be expressed in a graphic way just looking at the next figure



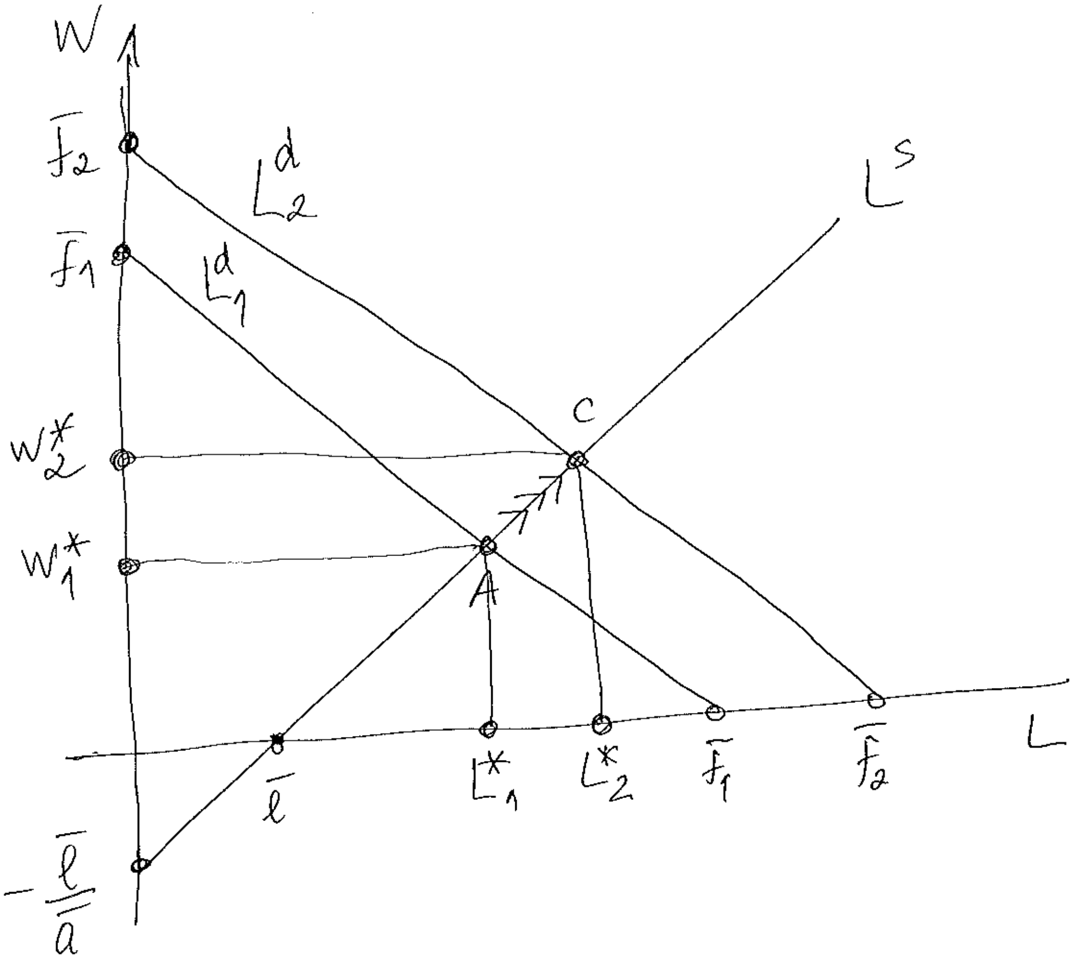
6.d

If $\bar{l}$ increases, it means that the workers accept lower wages for any level of L^S. From eq. (5) we can immediately see that if $\bar{l}$ increases by 1 unit, then L^* will increase by $\frac{1}{1+\bar{a}}$ units. Graphically, this increase can be seen in the next figure, where W^* decreases and L^* increases:



6. e

Now let us see what happens if $\bar{f}$ increases. Such increase means from an economic point of view that firms are ready to pay higher wages for any given level of labor services. From eq. (5) we can easily see that if $\bar{f}$ increases by 1 unit, then L^* will increase by $\frac{\bar{a}}{1+\bar{a}}$ units, and w^* will increase by $\frac{1}{1+\bar{a}}$ units, given the information we get from eq. (4). Graphically, see the next figure



Exercise 7

Try to apply the same kind of reasoning to the

- computer market
- the foreign exchange market between Euro and the Dollar.

Try to come up with endogenous variables, exogenous forces, and parameters.

Nothing really different from what we did for the labor market.