

Solutions

Final Test 11/01/2018

Macroeconomics (L0271)

ISCTE - IUL

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Gruppo A

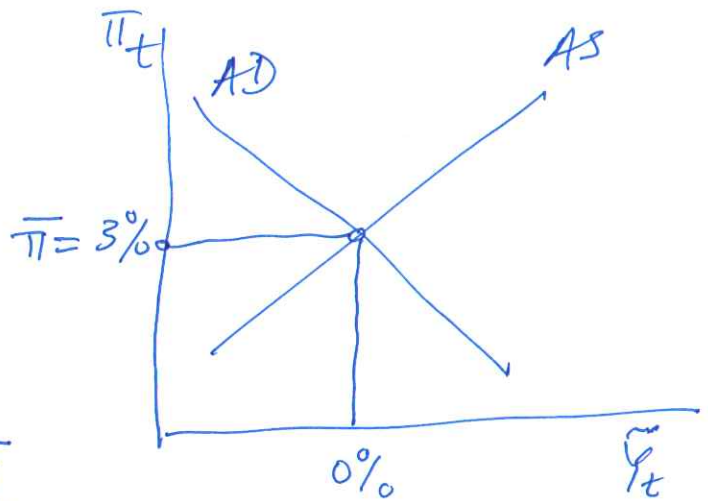
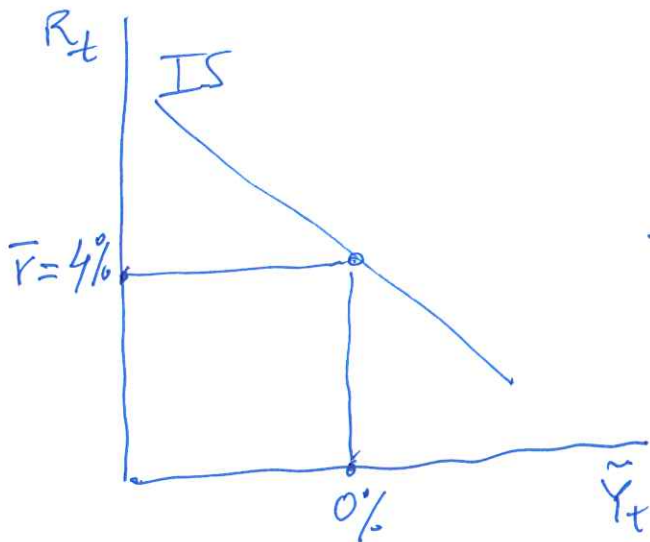
1. Inserting the MP function into the IS function we will get the AD equation:

(15)

$$\tilde{Y}_t = \bar{a} - \bar{b}\bar{m}(\pi_t - \bar{\pi})$$

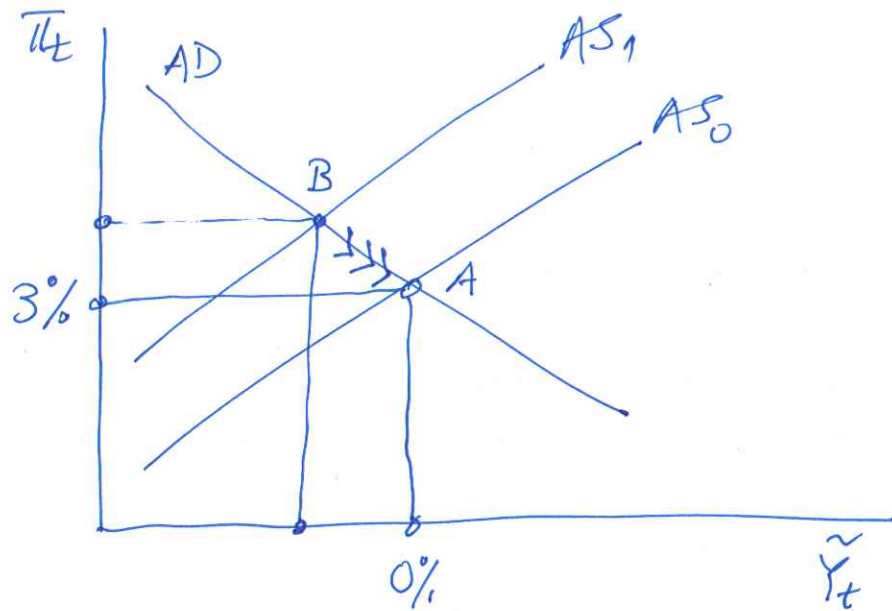
2. The equilibrium in this economy can be represented in both the IS/MP framework or the AS/AD framework as follows:

(15)



3. $\bar{\pi}$ increases by 5 percentage points. Then the adjustment process will be as follows:

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A: initial equilibrium

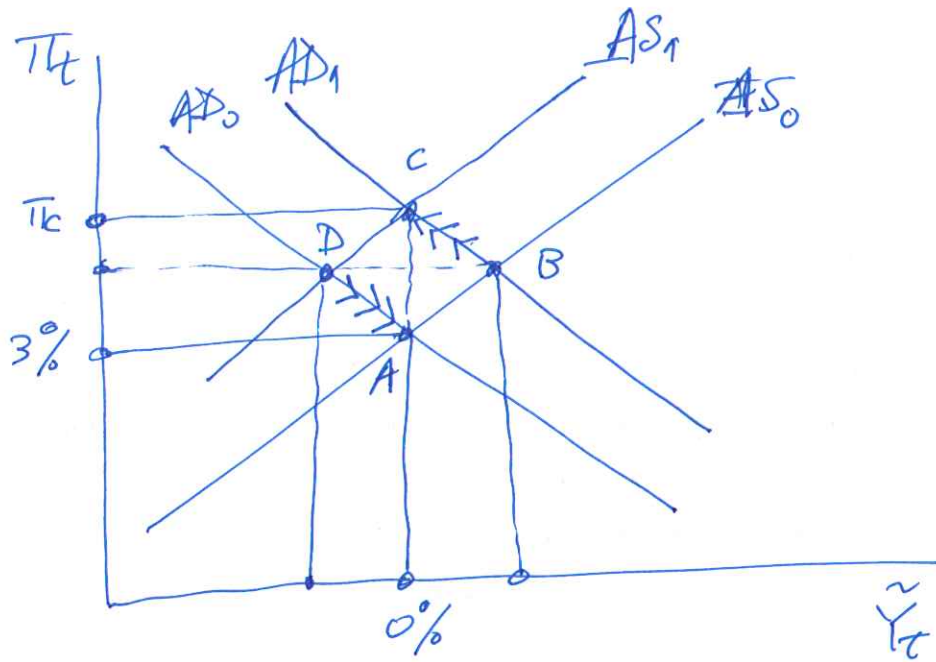
B: a point that results from an increase in $\bar{\pi}$ by 5 ~~2~~ percentage points. This point is not an equilibrium point because the economy is in a recession.

B \rightarrow A: a recession at B will cause inflation to go down gradually and so the ~~AS~~ curve will move down gradually to point A.

A: the final equilibrium point.

4. a_{ex} increases by 2 percentage points. Then the adjustment will be as follows:

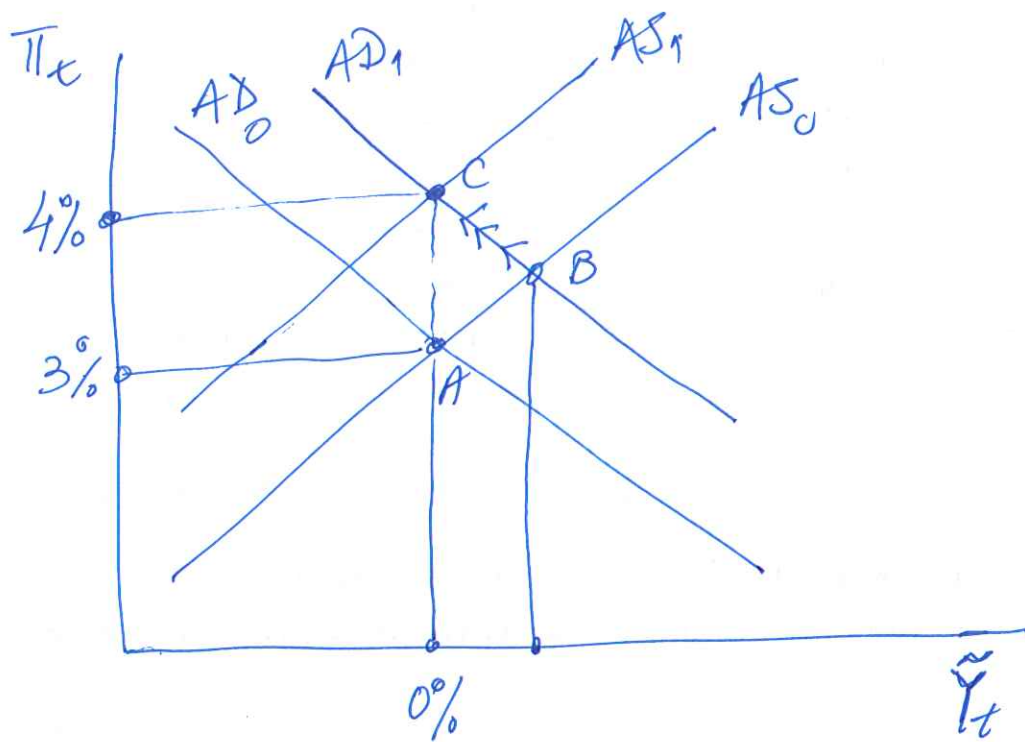
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- A: initial equilibrium
- B: the result from a_{ex} increasing by 2 p.p. We have a boom and inflation will start to go up and, consequently, AS will move from AS_0 to AS_1 .
- C: This point is not an equilibrium point because $\pi_c > \bar{\pi}$. So the central bank will induce a disinflationary process by increasing interest rates, which leads AD_1 to go back to AD_0 .
- D \rightarrow A: at D we have a recession and inflation will go down and the AS curve will shift downward until it reaches the new equilibrium point A.

5. The Central Bank increases the inflation target to 4% :

(15)



A : initial equilibrium point

B : the central bank reduces interest rates so the AD will increase.

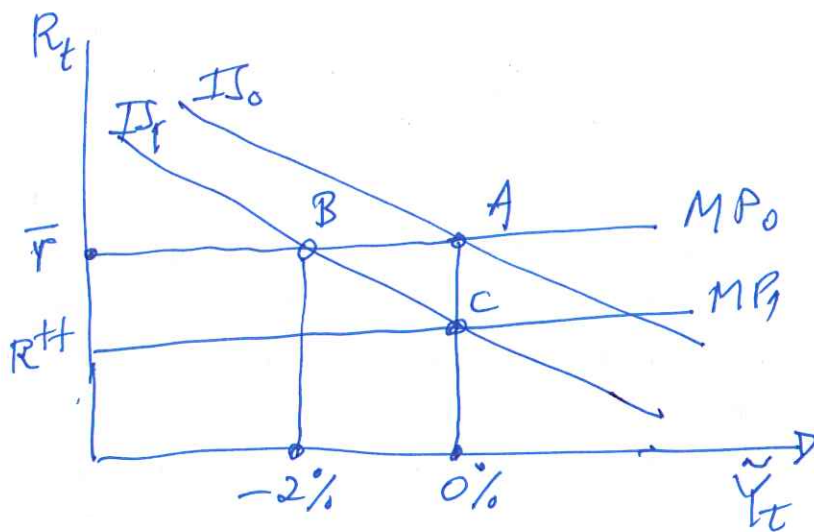
B \rightarrow C : at B the economy is in a boom, and so inflation will gradually increase shifting the AS curve from AS_0 to AS_1 .

C : the new equilibrium point, with a higher inflation target.

Group B

B1

(25) without financial frictions we have

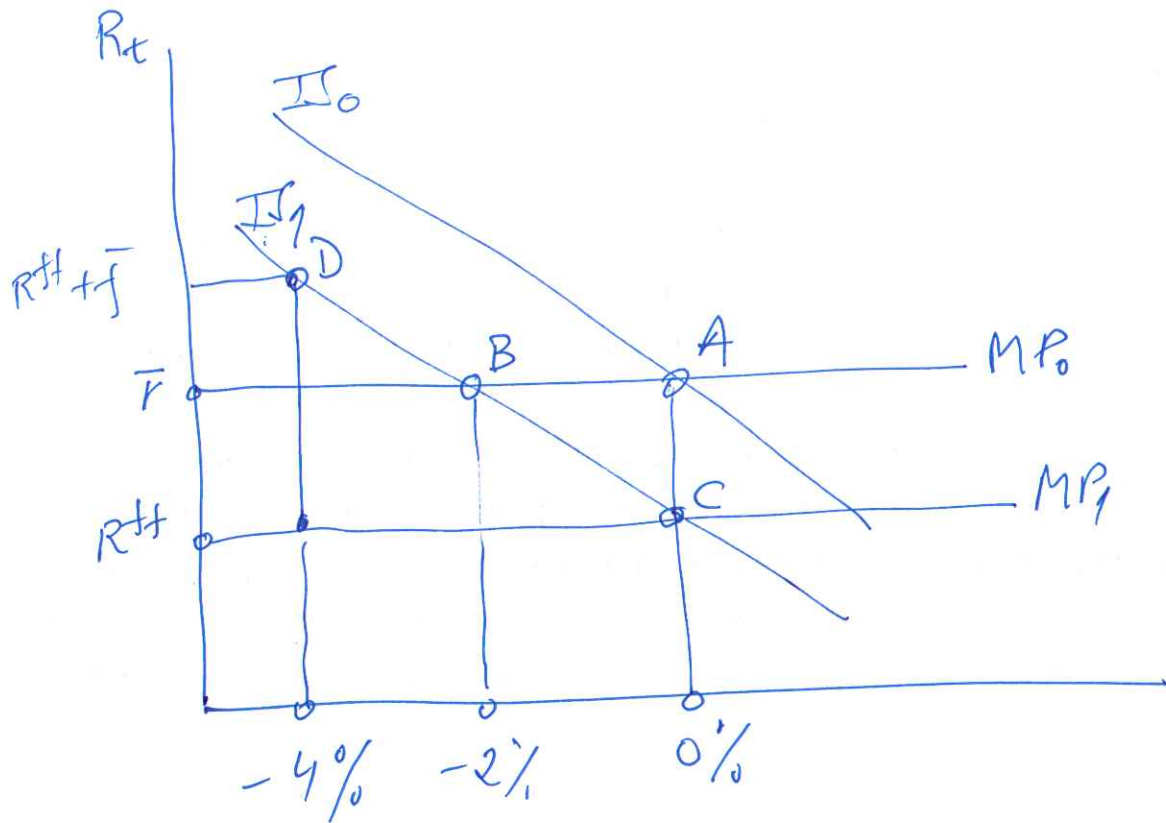


A : initial equilibrium point

B : the effect of a housing bubble burst

C : the Central Bank reduces nominal interest rates such that the new MP_1 will cross the new IS_1 at $\tilde{y}_t = 0\%$.

with financial frictions



D: the new equilibrium point

Instead of having the economy moving from B to C, the economy will move to D due to a large financial friction

f .

B2.

1. The MP rule used in the textbook considers only \bar{r} and $(\pi_t - \bar{\pi})$

$$R_t = \bar{r} + m(\pi_t - \bar{\pi})$$

while the Taylor rule considers also the output gap

$$R_t = \bar{r} + m(\pi_t - \bar{\pi}) + n \tilde{y}_t$$

2. The three monetary policy instruments are:

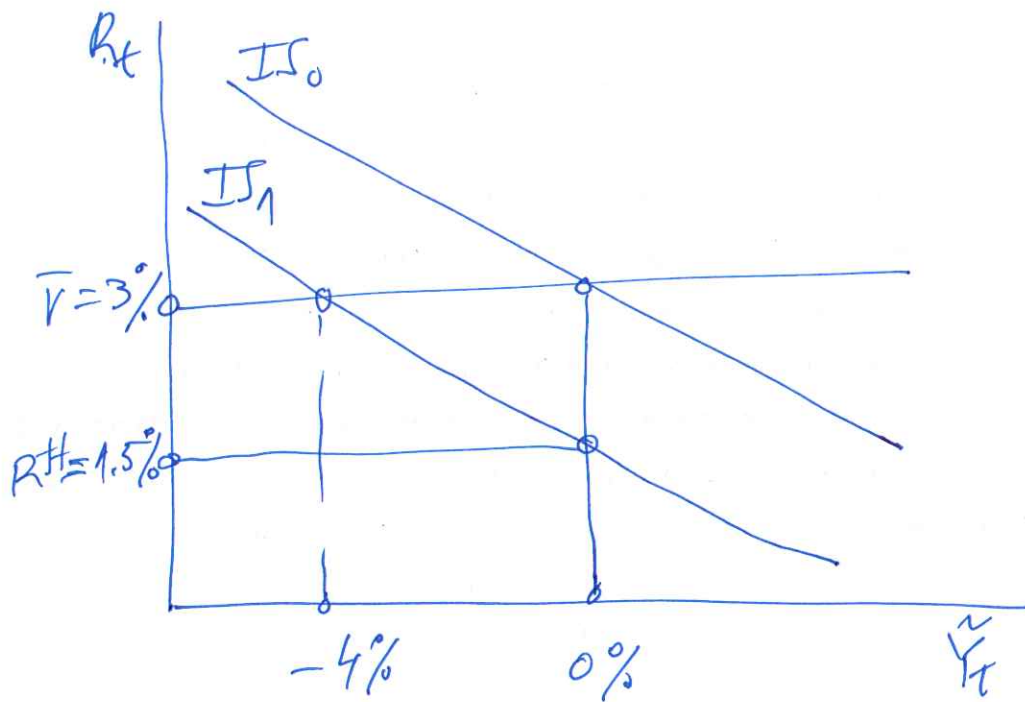
- reserve requirements (RR)
- discount rate (DR)
- open market operations (OMO)

To stimulate the economy the central bank should do as follows:

- RR reduced
- DR reduced
- OMO: buy financial assets

3. Consider this scenario at a certain point in time without no frictions:

$$R_t = 3\%, \quad \pi_t = 2\%, \quad \text{then } i_t = 5\%$$



Now suppose there is a financial friction quite large such that $f = 6\%$. In this case, the economy could be back to $\tilde{Y}_t = 0\%$ only if the central bank sets $i = -1\%$, or $i = 0\%$ and implement drastic measures in order to reduce the friction of 6% , like QE in the US and elsewhere.

Group C

C1

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- The law of one price is given by

$$E \times P = P^w$$

E = nominal exchange rate

P = domestic price index in the US

P^w = price in a foreign country

- Applying this law we can get the price of the Big Mac in dollars all around the world as follows:

$$\text{US} \# \quad 4.37/1 = 4.37$$

$$\text{Norway} \# \quad 42.96/5.48 = 7.84$$

$$\text{Euro Area} \# \quad 3.61/0.74 = 4.88$$

$$\text{Japan} \# \quad 319.62/91.06 = 3.51$$

the values on the right hand side are all different: the law above seems to be rejected by empirical evidence.

C2

(15)

- Definition of the nominal exchange rate

$$E = \frac{\text{number of a foreign currency}}{1 \text{ US dollar}}$$

- The Real Exchange Rate is defined as

$$RER = E \times \frac{P}{P^w}$$

- If the law of one price holds

$$E = P^w / P$$

- then

$$RER = E \times \frac{P}{P^w} = \frac{P^w}{P} \times \frac{P}{P^w} = 1$$

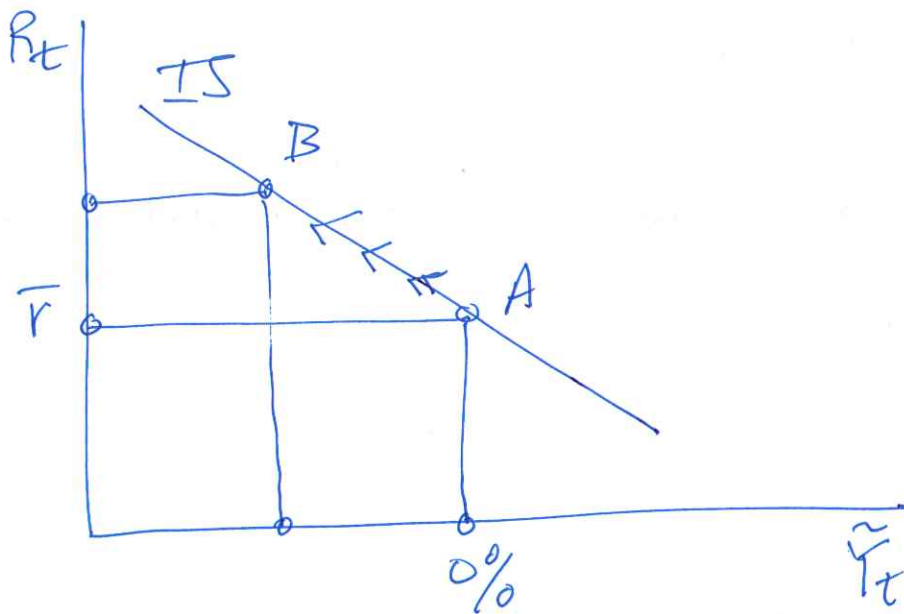
C3

10 ↓.

$\uparrow R^w \Rightarrow \downarrow F \Rightarrow \downarrow RER \Rightarrow \uparrow NX$

$\uparrow R \Rightarrow \uparrow E \Rightarrow \uparrow RER \Rightarrow \downarrow NX$

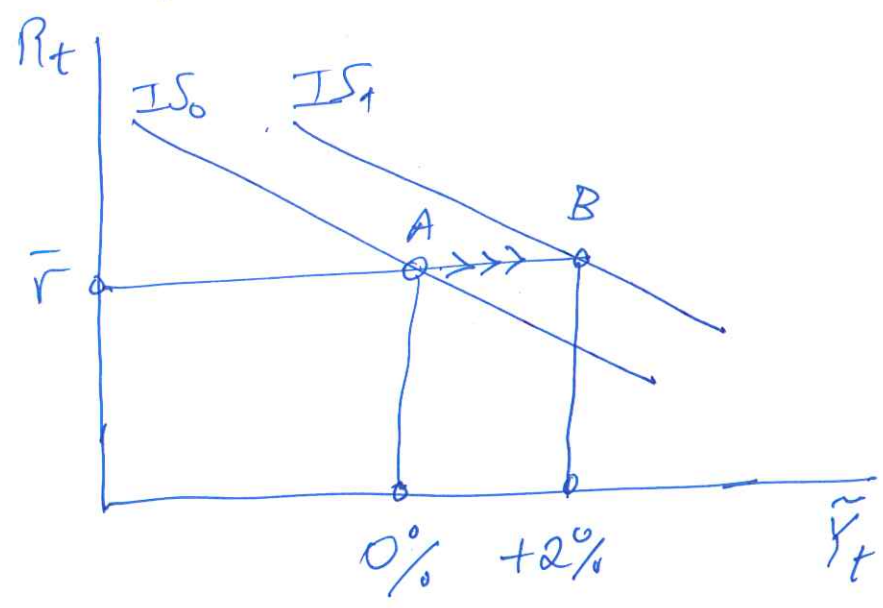
10 2.



An increase in i_t leads to a recession, if the initial point was such that $\tilde{Y}_t = 0\%$.

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3. If the government increases public spending by 2 percentage points then



4. The results will be different, depending on the type of decision:

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