

## Problem Set 3 · The loan market

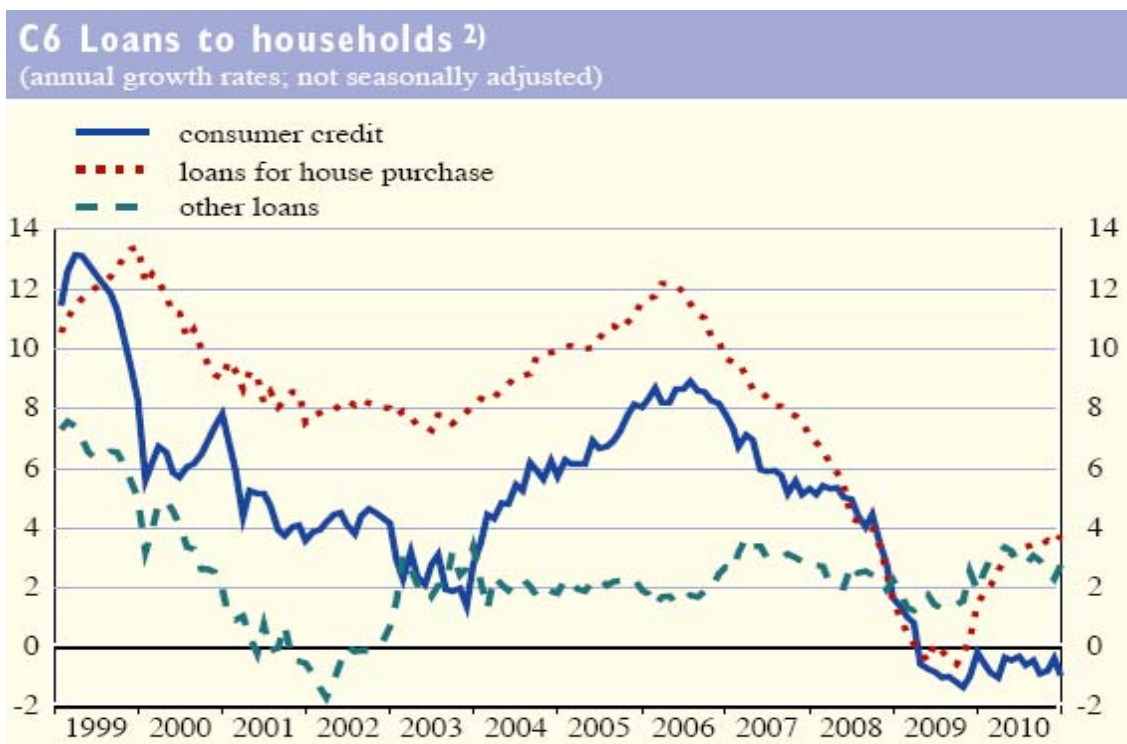
1. In the loan market model, determine the effect on both the equilibrium interest rate and the volume of loans of each of the following events.

- (1) The arrival of a significant number of immigrants
- (2) The closing of a significant number of firms
- (3) There is an increase in the proportion of income saved by households
- (4) The government budget deficit is substantially reduced
- (5) To finance important investment projects the main firms of the economy issue corporate bonds
- (6) The central bank applies an expansive open market operation
- (7) There is an increase of foreigners willing to purchase domestic financial assets
- (8) The population of the economy grows old
- (9) The banks decide not to concede any loan to individuals younger than 40-year old
- (10) Foreign banks settle new offices
- (11) Unemployment doubles
- (12) The inflation rate doubles
- (13) Unquestionable evidence that the afterlife exists is made public
- (14) The central bank increases the reserve ratio and sells T-bills to banks
- (15) The central bank increases the reserve ratio and purchases T-bills from banks

2. Identify three events, different from the ones indicated previously, that cause an increase of the equilibrium interest rate.

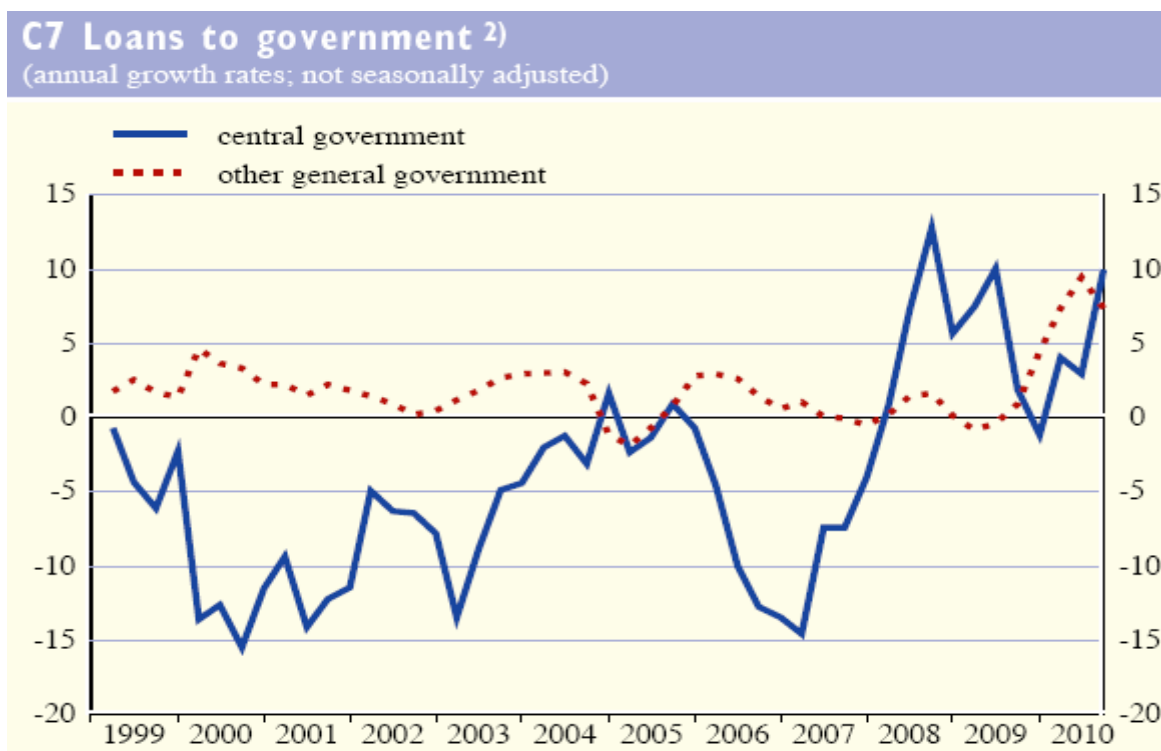
3. Find some good or financial asset that: (i) could be medium of exchange and store of value but not, or hardly, unit of account; (ii) could be medium of exchange but neither store of value nor unit of account; (iii) could be store of value and unit of account but not medium of exchange; and (iv) nor medium of exchange, nor store of value, nor unit of account.

4. The following chart offers information about the Eurozone. What can be inferred from the data from 2006 to 2011: an increase or a decrease in the equilibrium interest rate of the Eurozone?



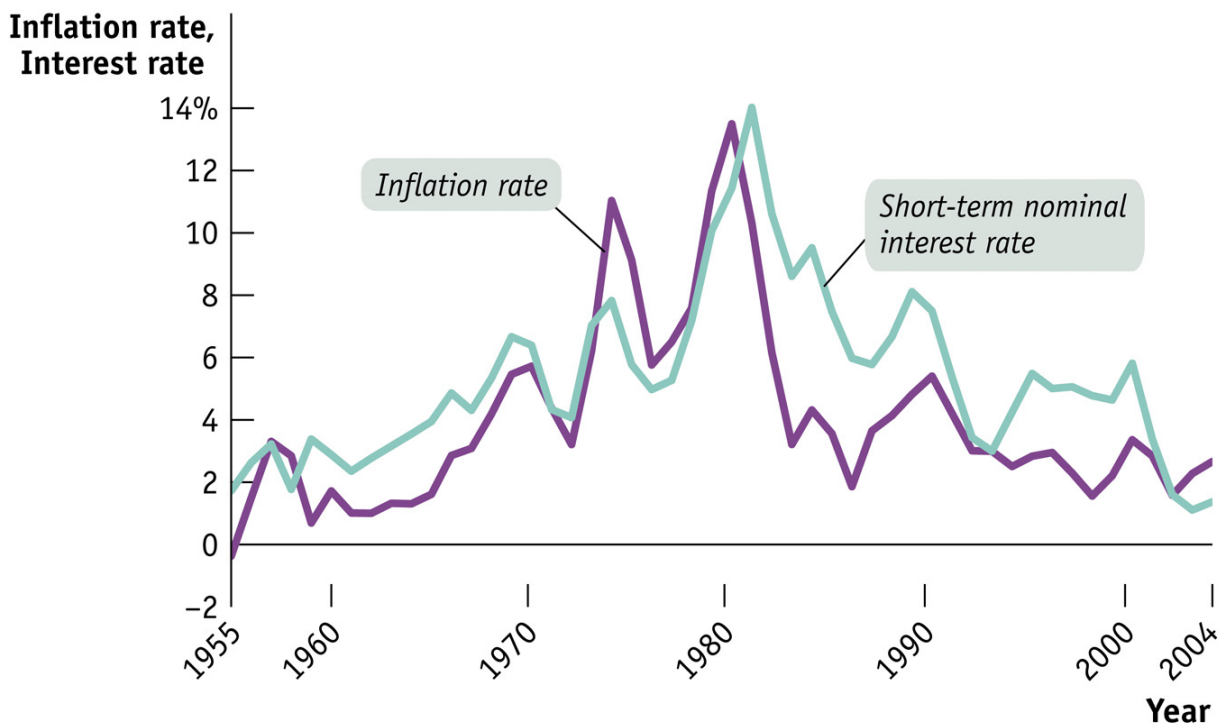
Source: ECB Monthly Bulletin, February 2011, <http://www.ecb.int/pub/pdf/mobu/mb201102en.pdf>.

5. The following chart offers information about the Eurozone. What can be inferred from the data from 2006 to 2011: an increase or a decrease in the equilibrium interest rate of the Eurozone?



Source: ECB Monthly Bulletin, February 2011, <http://www.ecb.int/pub/pdf/mobu/mb201102en.pdf>.

6. (i) Does the chart below give information concerning the real interest rate? (ii) If so, identify a period in which it is positive and another one in which it is negative? Can a period be identified during which it rises? And another one during which it falls?



Source: <http://www.worthpublishers.com/krugmanwellsnew/main.htm>.  
(Macroeconomics PowerPoints sets → Chapter 16)

## Multiple-choice questions

- If the central bank sells financial assets,
  - a rise of the interest rate is to be expected.
  - a fall of the interest rate is to be expected.
  - the money stock increases.
  - the money multiplier automatically puts up because both the liquidity ratio and the reserve ratio rise.
- The interest rate has dropped. A possible explanation is that
  - there are more banks and fewer firms.
  - there are fewer banks and fewer firms.
  - there are fewer banks and more firms.
  - None of the above
- What could explain a rise in both the interest rate and the volume of loans?
  - An open market operation by the central bank
  - An increase in unemployment
  - Neither (a) nor (d)
  - A rise in the budget deficit combined with an increase in the number of banks
- What decision by the central bank could offset the effect on the interest rate of a worsening in the expectations concerning the short-term evolution of the economic activity?
  - The reduction of the reserve ratio
  - The reduction of the discount rate (the interest rate at which the central bank furnishes loans to the banks)
  - The purchase of financial assets
  - None of the above
- How can a central bank increase the economy's liquidity (money supply)?
  - By selling financial assets in an open market operation
  - By increasing the reserve ratio
  - By reducing the liquidity ratio
  - By purchasing financial assets in an open market operation
- A sale of financial assets performed by the central bank
  - tends to reduce the interest rate.
  - tends to reduce the money supply.
  - increases the money multiplier because it necessarily causes a fall in the liquidity ratio.
  - tends to raise the interest rate.
- Which of the following is not a monetary policy instrument of a central bank?
  - Open market operations
  - Reserve requirements
  - Interest rates set by the central bank when it lends
  - None of the above
- A contractive open market operation consists
  - of reducing reserve requirements.
  - of purchasing financial assets.
  - of purchasing foreign firms.
  - None of the above
- According to the loan market model, what could not explain a rise in the interest rate?
  - An increase in the budget deficit
  - An open market operation
  - A reduction of the number of banks combined with a rise in unemployment
  - An increase in the number of banks combined with a fall in the number of firms
- The real interest rate
  - links M1 with M2.
  - is, in general, equal to the real GDP.
  - coincides with the discount factor.
  - depends on the nominal interest rate and the inflation rate.
- A negative real interest rate
  - necessarily implies a negative inflation rate.
  - arises when the nominal interest rate is greater than the inflation rate.
  - occurs when the inflation rate is greater than the nominal interest rate.
  - is a plain impossibility.
- If the real interest rate remains constant, then, assuming the Fisher effect, a 3-point increase in the inflation rate
  - will be accompanied by a 3-point reduction in the nominal interest rate.
  - will cause no effect on the nominal interest rate.
  - is simply impossible.
  - None of the above
- Which concept is unrelated to the nominal interest rate?
  - The Fisher effect
  - The price of T-bills
  - The income identity
  - None of the above

14. According to the Fisher equation, if real interest rate is 4% and nominal interest rate is 6%, then the inflation rate is, roughly,

- (a) 10%.
- (b) 2%.
- (c) -2%.
- (d) None of the above

15. A negative real interest rate

- (a) is impossible.
- (b) is not impossible.
- (c) is the consequence of having a nominal interest rate equal to the inflation rate.
- (d) None of the above.

16. According to the Fisher effect, a surge in the inflation rate causes

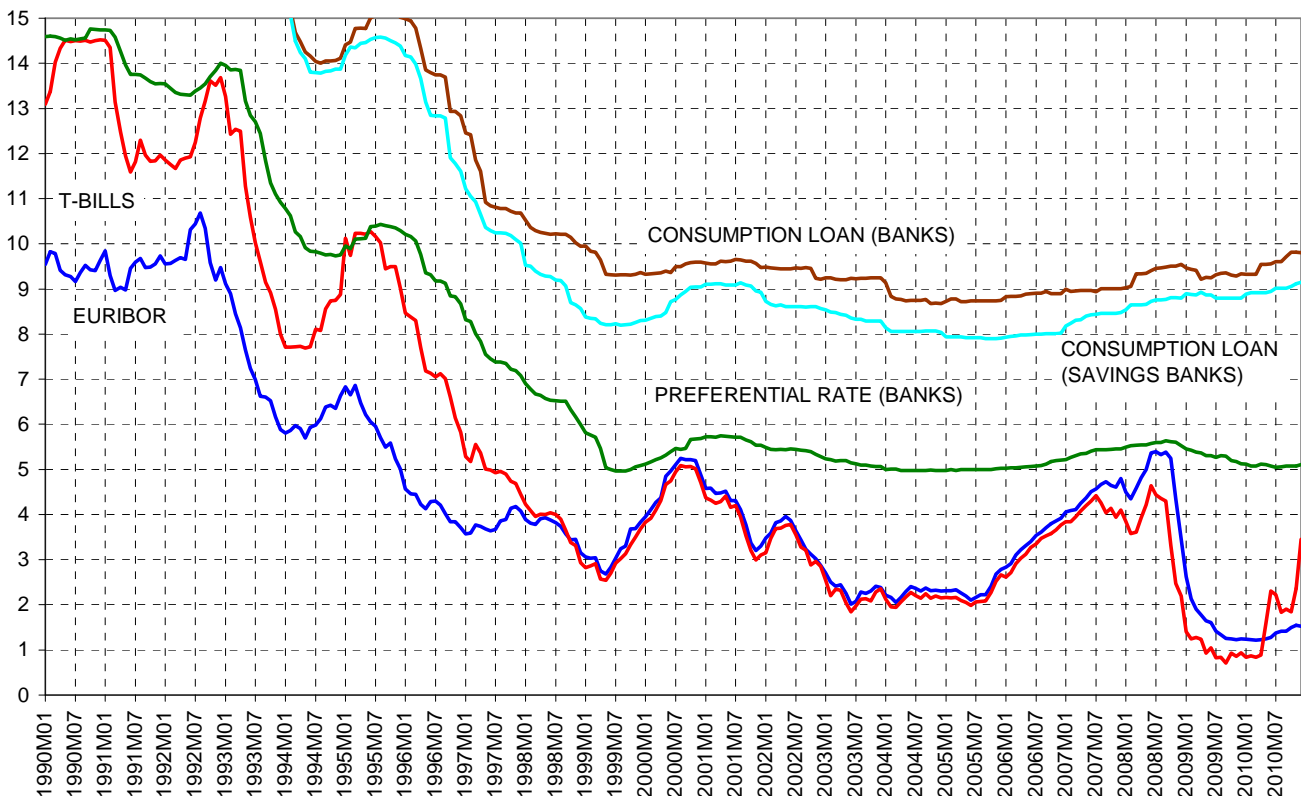
- (a) a reduction of the unemployment rate
- (b) an increase in real GDP
- (c) a reduction of the nominal interest rate
- (d) an increase of the nominal interest rate

17. The Fisher effect relates

- (a) the economy growth rate and the nominal interest rate
- (b) the economy growth rate and the inflation rate
- (c) the unemployment rate and the nominal interest rate
- (d) the inflation rate and the nominal interest rate

18. The chart below

- (a) shows the effect on interest rates of a 20-year sustained decrease of the demand for loans.
- (b) is consistent with having a shrinking supply of loans matched, for 20 years, with an unchanged demand for loans.
- (c) suggests that all the interest rates in an economy move more or less in parallel.
- (d) None of the above



Interest rates in Spain, 1990–2010

Source: <http://www.ine.es/jaxi/menu.do?type=pcaxis&path=/t38/bme2/t30/b092/&file=pcaxis>