7,280 Economics of central banking (Zentralbanktheorie und -politik)

Examples of exam questions

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HS09

Question 1 [`10 points`] What is a monetary policy strategy?

Answer: .... (... / 10)
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Question 2 [`2 points`] What is the federal funds rate? What is the current target of the central bank?

Answer: .... (... / 2)
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Question 3 [`9 points`] According to F. Mishkin, central banks should follow some guiding principles (*Mishkin, F. (2000): What should central banks do? Review, Federal Reserve Bank of St. Louis 82(5), 1-13*). For example, he suggests that price stability has to be the overriding goal of a central bank. Name three other guiding principles and explain why they may be relevant.

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Principle 1: .... (... / 3)
Explanation: ....
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Principle 2: .... (... / 3)
Explanation: ....
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Principle 3: .... (... / 3)
Explanation: ....
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Question 4 [`10 points`] What is the identification problem of SVAR models? In this context, what is the solution provided by the Cholesky decomposition and which advantages/disadvantages does it offer?

Identification problem: .... (... / 5)
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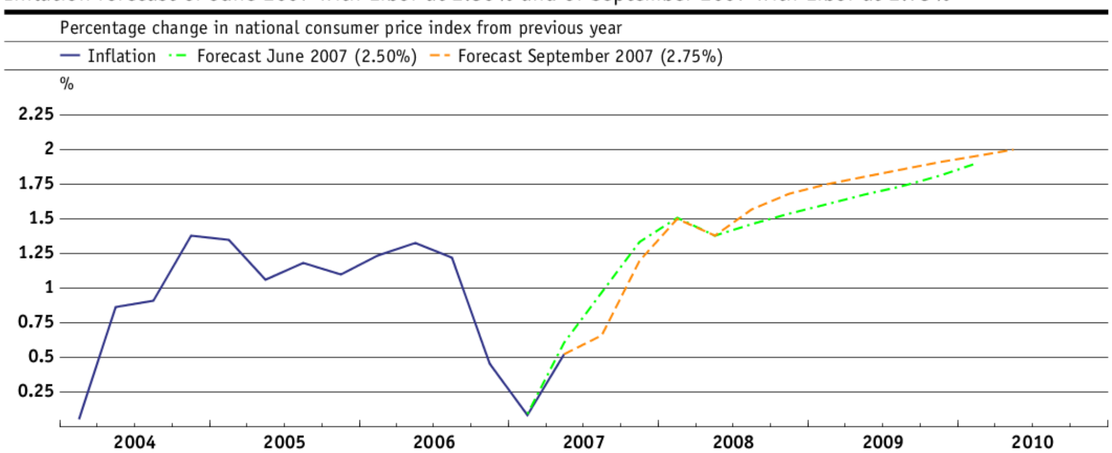
Cholesky decomposition: (... / 5)

Question 5 [16 points] The following chart shows the conditional inflation forecast published by the Swiss National Bank in September 2007. Describe the difference between the two curves and explain which factors may justify this difference. Which interest rate movements could be expected in the future based on the new inflation forecast?

Inflation forecast of June 2007 with Libor at 2.50% and of September 2007 with Libor at 2.75%



Curves: (... / 8)

Expected monetary policy: (... / 8)

Question 6 [12 points] What are the elements of the SNB's monetary policy strategy?

Element 1: .... (... / 4)

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Element 2: .... (... / 4)

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Element 3: .... (... / 4)

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Question 7 [10 points] The Bank of England recently published the following inflation forecasts (*Inflation report, August 2009*). How do you interpret these charts?

Nomenclature: CPI = consumer price index.

Chart 2 CPI inflation projection based on market interest rate expectations and £175 billion asset purchases

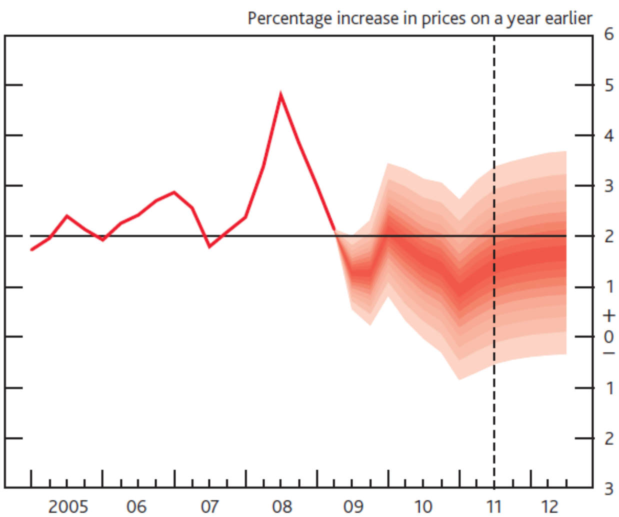
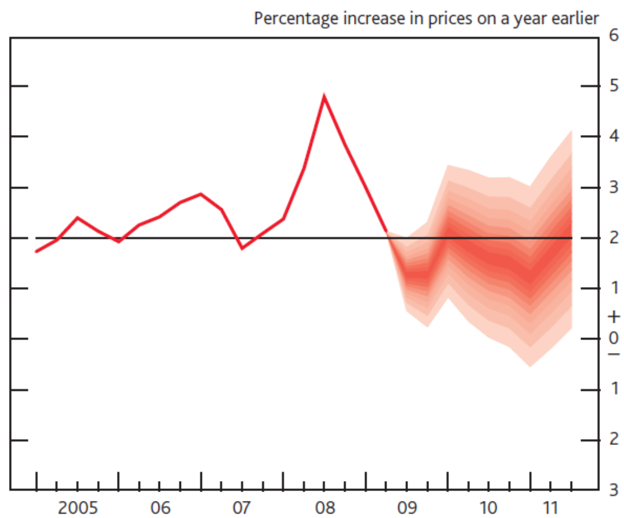


Chart 3 CPI inflation projection based on constant nominal interest rates at 0.5% and £175 billion asset purchases



Interpretation of the charts: .... (... / 10)

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Question 8 [`20 points`] Model: simultaneous game between a central bank and economic agents (y = output, π = inflation, π^e = expected inflation rate, ε = output shock (observed only by the central bank), k = output target (natural ouptut $y_n = 0$)).

- Utility function of the society: $U = -(y-k)^2 - \pi^2$
- Output: $y = \pi - \pi^e + \varepsilon$
- The central bank can directly influence inflation
- Game outcome is the equilibrium inflation

i) Show that the nomination of a conservative central banker (with utility function of the society $U = -(y-k)^2 - (1+\delta)\pi^2$) reduces both the inflation bias and the reaction to output shock (solution, equilibrium inflation is $\pi = k/(1+\delta) - \varepsilon/(2+\delta)$).

ii) Explain the economic impact of this nomination.

iii) The optimal degree of conservatism (i.e. the δ value maximizing the expected utility of the society) is a function of the volatility (σ_ε^2) of the output shock: $\delta = \frac{k^2}{\sigma_\varepsilon^2}\left(\frac{1+\delta}{2+\delta}\right)^{-3}$. Is it worth hiring this conservative banker? And when there is no inflation bias?

Calculation of $\pi = k/(1+\delta) - \varepsilon/(2+\delta)$: .... (... / 5)

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Economic interpretation of the equilibrium inflation: .... (... / 5)

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Sense of the nomination: .... (... / 5)

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Sense of the nomination in case there is no inflation bias: .... (... / 5)

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Question 9 [`10 points`] The following production function (input: several intermediate goods $Y_t(i)$; output: final good Y_t)

$$Y_t = \left[\int Y_t(i)^q \,\mathtt{d}i \right]^{\frac{1}{q}}, 0 < q \leqslant 1, i \in [0,1]$$

has a substitution elasticity between two intermediate goods, e.g. $Y_t(i_1)$ and $Y_t(i_2)$, of $\frac{1}{1-q}$. When the producer maximizes his profit, using this technology, he gets a demand function $Y_t(i)$ as a function of the price $P_t(i)$ for each intermediate good

$$Y_t(i) = \left(\frac{P_t}{P_t(i)} \right)^{\frac{1}{1-q}} Y_t.$$

Show that the price elasticity of the demand function is $\frac{1}{1-q}$. What is the intuition behind this value?

Price elasticity of demand: .... (... / 5)

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Intuition: .... (... / 5)

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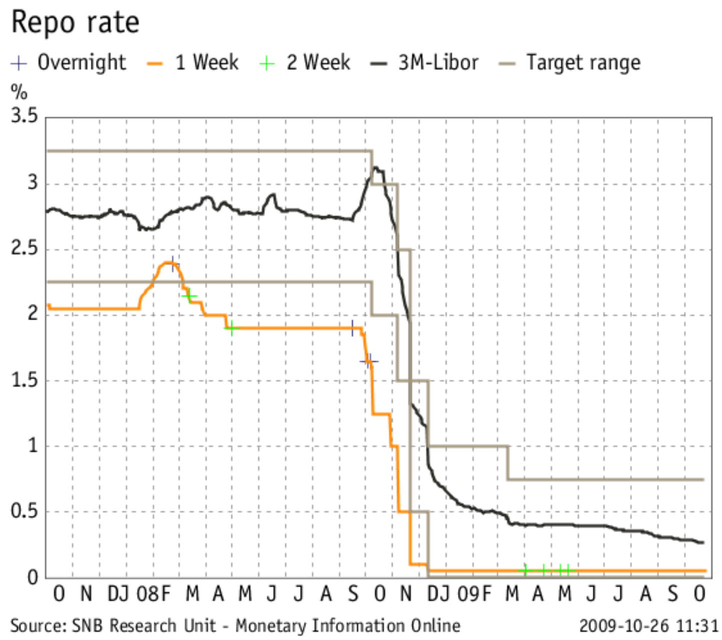
Question 10 [`10 points`] What are these curves on the Swiss money market? Describe in particular the period between September and December 2008?



Curves: .... (... / 5)
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Specific period: .... (... / 5)
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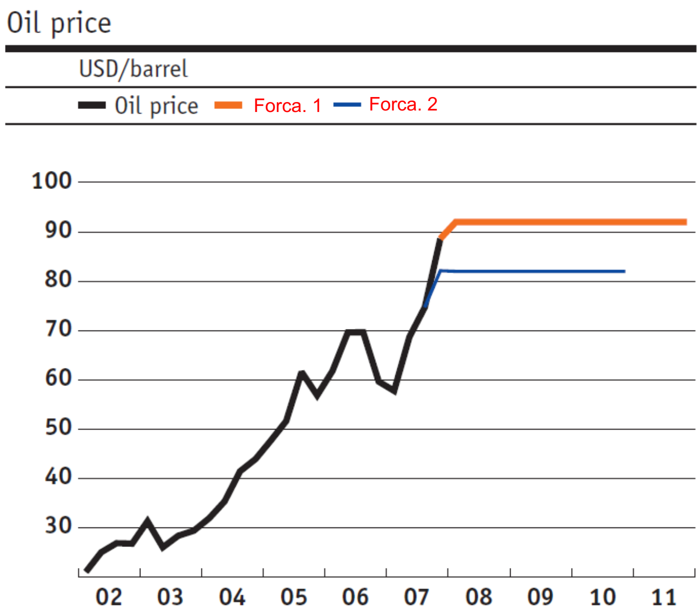
Question 11 [`10 points`] The inflation forecast of several central banks is based on a scenario for global economic developments. An important component of this international scenario is the assumption about the oil price for the next three years. The following chart shows a so-called 'flat' assumption. What is the difference between a 'flat' assumption and a normal assumption? Oil price is often an important CPI item; what are the implications of the 'flat' assumption on the development of CPI inflation?



'Flat' assumption: .... (... / 5)

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CPI development: .... (... / 5)

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