

Stockholms Universitet, Statistik

Exam in: Economic statistics

Examiner: Mikael Möller

Approved aids: Pen, pencil, calculator, dictionary (also electronic)

Examination day: 111027

Examination time: 5 hours

All assumptions and notations should be explained and defined (also those that have been used during the course). All answers, reasoning and explanations should be easy to follow. Answers and arguments which cannot be understood give 0 points.

Phones must be turned off!

Good luck!

1: National accounts

(20p)

Volume at various price levels

We have the following three products with quantities (q) and prices (p) as shown below

	2005		2006		2007	
	q	p	q	p	q	p
A	2	5	4	3	6	2
B	100	0.2	150	0.3	300	0.4
C	20	20	10	30	5	40

Compile for each period

- Value in current prices (that is: at 2005, 2006, 2007)
- Volume in price level of period 2005
- Volume in price level of period 2006
- Volume growth between periods 2006/2005 and 2007/2006

Comment on your results

2: National accounts

(20p)

Quarterly estimates

Many quarterly compiled economic variables show seasonal variations. National accounts estimates are compiled and disseminated both as actual estimates and as seasonal adjusted estimates.

- a. When should actual estimates be used
- b. When should seasonal estimates be used
- c. What are the advantages and/or disadvantages with actual estimates?
- d. What are the advantages and/or disadvantages with seasonal estimates?

3: Index

(20p)

- a. When may a quality adjustment have to be made in CPI production: Is it
 - (1) in the annual chain linking of a chained index, or
 - (2) in annual renewal of the sample of shops, or
 - (3) when a price observation is missing in the price collection, or
 - (4) when a product model is replaced in the price collection?
- b. Very briefly characterize the type of quality adjustment methods that is known as explicit methods, and do the same for the type known as implicit methods.
- c. Very briefly describe the idea of hedonic regression.
- d. Name or characterize two different approaches to treating owner occupied housing in a CPI.

4: SAMU

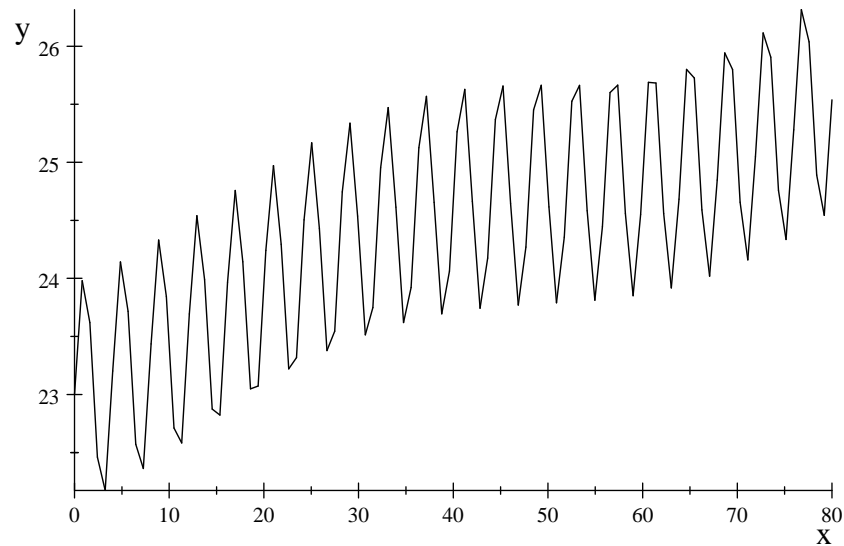
(20p)

- a. What is meant by negative coordination of samples?
- b. What is meant by positive coordination of samples?
- c. Give some reasons for positive coordination and for negative coordination.
- d. Describe how to draw two disjoint simple random samples (without replacement) with sizes n_1 and n_2 from a frame with $N \gg n_1 + n_2$ units using permanent random numbers (PRN).

5: Time series

(20p)

Suppose that you are given the time series below (observe that there is an irregular component in it)



Your task is to decompose it into different components

- Which type of model would you use? Motivate!
- Describe how you find each component. What are the underlying ideas?