BI NORWEGIAN SCHOOL OF MANAGEMENT   Department of Economics

Case in: **EXC 23041 Statistics**

Handout date: 28.05.08, 09.00

Examination is held: 11.06.08, 09.00 - 12.00

Total number of pages: 4

General information

The case analysis will be the basis for 15 out of the 30 multiple choice questions. You have to bring the case text and the results of your analysis to the exam. Your analysis will hopefully supply the answers to the exam questions. You will not be required to hand in your analysis.

The case is relatively open. The questions invite to different approaches and use of different statistical methods. You should focus on the approach you find the most interesting and the methods you find to be the most relevant.

As you do not know in advance the questions that will be asked, your analysis should be a broad one. The questions in the multiple choice exam are posed in such a way that, even if you haven't worked out the exact answer required, a thorough analysis of the case will enable you to choose the right answer.

You can analyse the case on your own or together with a group of other students. What is important is that you acquire an insight into the data material, that you understand the analytical methods used and that you are able to draw the right conclusions. The multiple choice exam is an individual exam.

You will find the data here: http://www.bi.no/users/fag87027/met8006.htm

Case: Norway's CO_2 emission

(Weight 7)

Where is Norway heading with respect to CO_2 emission? Statistics Norway (Statistisk Sentralbyrå, SSB) closely monitors Norway's national accounts data and environmental data. The 22nd April 2008 Statistic Norway published a report concerning value added (gross product at constant price) and greenhouse gas (GHG) emission for the period 1990 – 2006[1]. Statistics Norway's conclusion is that emission intensity (emission/value added) is decreasing. This is what we want you to analyse closer, using the data in Table 1. Get acquainted with the data. Analyse each time series graphically. Try to make forecasts both of CO_2 emission and of the emission intensity in 2010. Assess the validity of the assumptions you make.

(There is a lot of interesting stuff to read on Statistics Norway's web pages, but the questions in your multiple choice exam are based solely on the data presented in table 1 below.)

Table 1: Gross total value added and CO_2 emission in Norway 1990 – 2006[2]

Year	Gross total value added Millions NOK (constant 2000 basic prices)	Carbon dioxide - CO_2 emission 1 000 tonnes	Emission intensity (CO_2/Gross value added)
1990	911 765	48 853	0,05358
1991	942 702	46 501	0,04933
1992	976 356	45 999	0,04711
1993	1 001 110	46 500	0,04645
1994	1 054 121	49 038	0,04652
1995	1 095 474	49 073	0,04480
1996	1 146 900	55 165	0,04810
1997	1 208 376	55 527	0,04595
1998	1 236 804	53 609	0,04334
1999	1 261 078	53 114	0,04212
2000	1 302 768	55 873	0,04289
2001	1 325 481	57 765	0,04358
2002	1 341 164	53 987	0,04025
2003	1 354 219	54 304	0,04010
2004	1 397 318	56 227	0,04024
2005	1 430 817	53 055	0,03708
2006	1 462 570	53 483	0,03657

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[1] http://www.ssb.no/english/subjects/09/01/nrmiljo_en/

[2] http://www.ssb.no/english/subjects/09/01/nrmiljo_en/tab-2008-04-22-01-en.html

Case: Market for self owned flats in Oslo and Bergen

(Weight 8)

You are considering studying in Oslo or Bergen and wish to purchase a self owned flat of about 50-69 m^2 close to campus, i.e. either in the area Ullevål Hageby – St. Hanshaugen in Oslo or in the centre of Bergen. In order to make some preliminary inquiries about the market you logged on to Finn.no[3] on the 1st of May and found a number of flats for sale. They are shown in Table 2. You now wish to use your newly acquired skills in statistics to illuminate the questions below. (For the sake of simplicity we refer to the markets as Oslo and Bergen, and not the local area names.)

a) *Flat size*: Which flat size is the most common in the 50-69 m^2, and what can be said about the distribution?

b) *Price*: How much would you expect to have to pay for the flat?

c) *Price pr m^2*: What can you say about price pr square meter? Is there a difference between Oslo and Bergen, and if so how large is the difference?

d) *Price pr m^2 and size*: Is the price pr m^2 independent of size, or is there a relationship; if so is it positive or negative?

e) *Are people from Bergen easier to fool than those from Oslo*? Conspicuously many prices end with digits 90. Is this significantly more usual in Bergen than in Oslo?

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[3] http://finn.no/finn/realestate/homes/browse1

Table 2: Size and price of flats in Oslo and Bergen

Oslo (n =31)   Bergen (n = 66)

m^2	Price (1000)	m^2	Price (1000)	m^2	Price (1000)
55	1950	50	1590	64	1790
61	2600	65	2250	64	1890
64	3750	54	1590	57	2990
58	2250	52	1890	65	2690
58	2900	63	2490	60	2090
54	2290	57	2090	55	1660
54	2600	60	2250	60	1990
60	2690	56	2290	60	1980
62	3490	61	1790	59	2190
52	1850	62	2590	55	2190
52	2300	65	2390	52	1990
62	2400	62	1800	65	2490
57	2900	50	1690	51	2590
56	2350	54	2290	58	2590
50	2150	50	1790	66	2090
67	2500	64	2725	52	2090
62	2790	58	1875	67	2690
69	2350	56	1590	57	2190
57	2250	64	2390	63	2350
60	2450	50	1650	53	2350
54	1700	51	2290	60	1780
62	2350	64	1690	62	2690
54	2290	69	1990	62	2190
55	2450	53	2190	52	2390
69	2690	60	2190	61	2550
57	2450	64	2240	55	2390
65	2450	68	1690	67	2890
58	2450	57	1950	64	1680
56	2090	61	2150	51	2050
51	2750	60	2190	62	3410
59	2790	69	2690	60	1650
		69	2490	66	2950
		57	2050	69	2290