



PROFITABILITY OF FLEMISH DAIRY FARMS AND THE IMPACT OF THE REPLACEMENT RATE ON PROFITABILITY

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Outline

- General introduction: Flemish dairy sector
- General profitability
- Technical and economical parameters
- Drivers for profitability
- Replacement rate



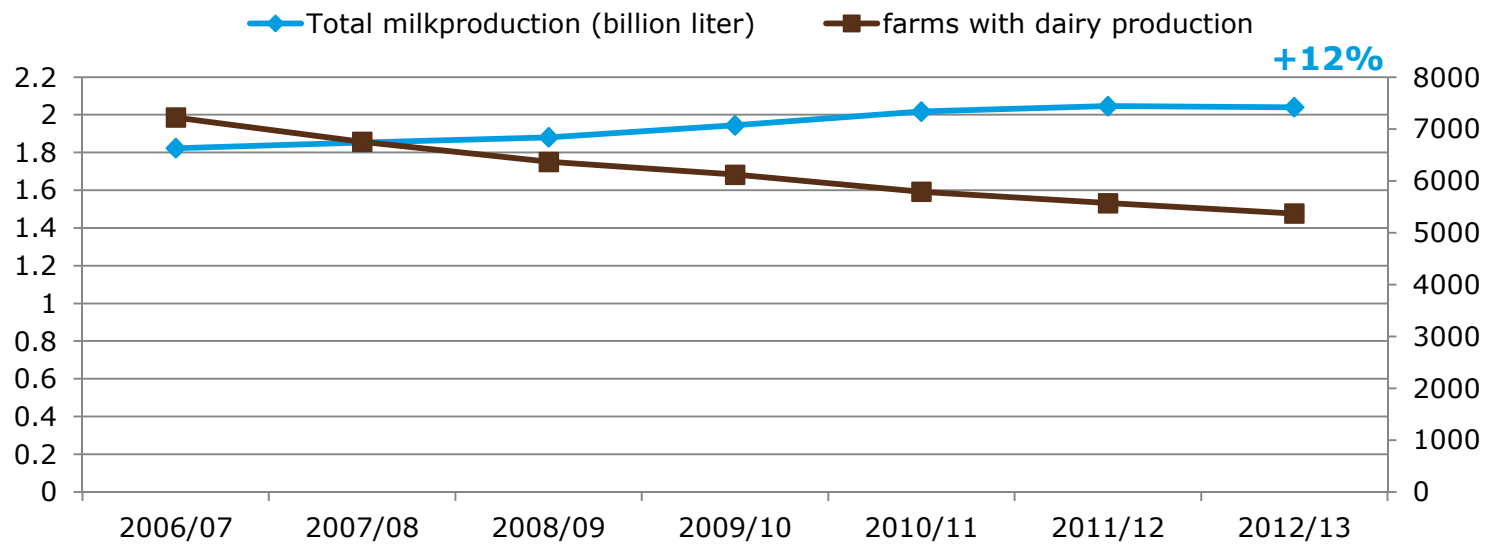
General introduction: Flemish dairy sector

Today

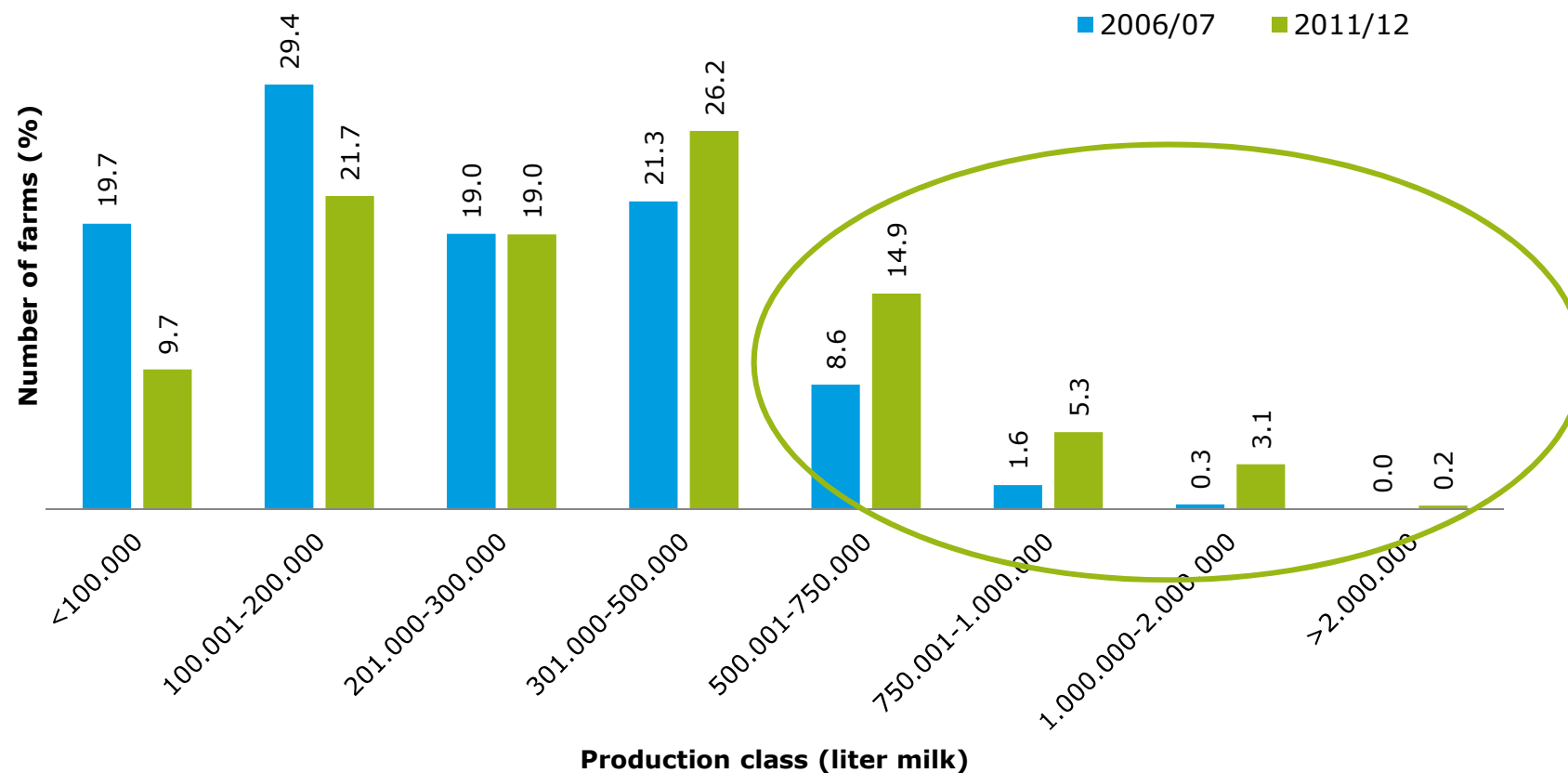
- National quota: 2 billion liter
- 5.400 farms with dairy production
- Important 'user' of agricultural land
 - +- 28% land area for fodder crops (based on FADN data)
 - +- 40% land area needed for allocating produced manure
- Important agricultural subsector (14% of total production value)
- Bounded by legislation
 - Dairy quota (binding constraint)
 - Environmental legislation (nitrate directive)
 - Animal production rights (+- 900 € per cow)
 - Fertilization standards (derogation: up to 250 kg N/ha)
 - In some area's: 300€/cow

After 2015

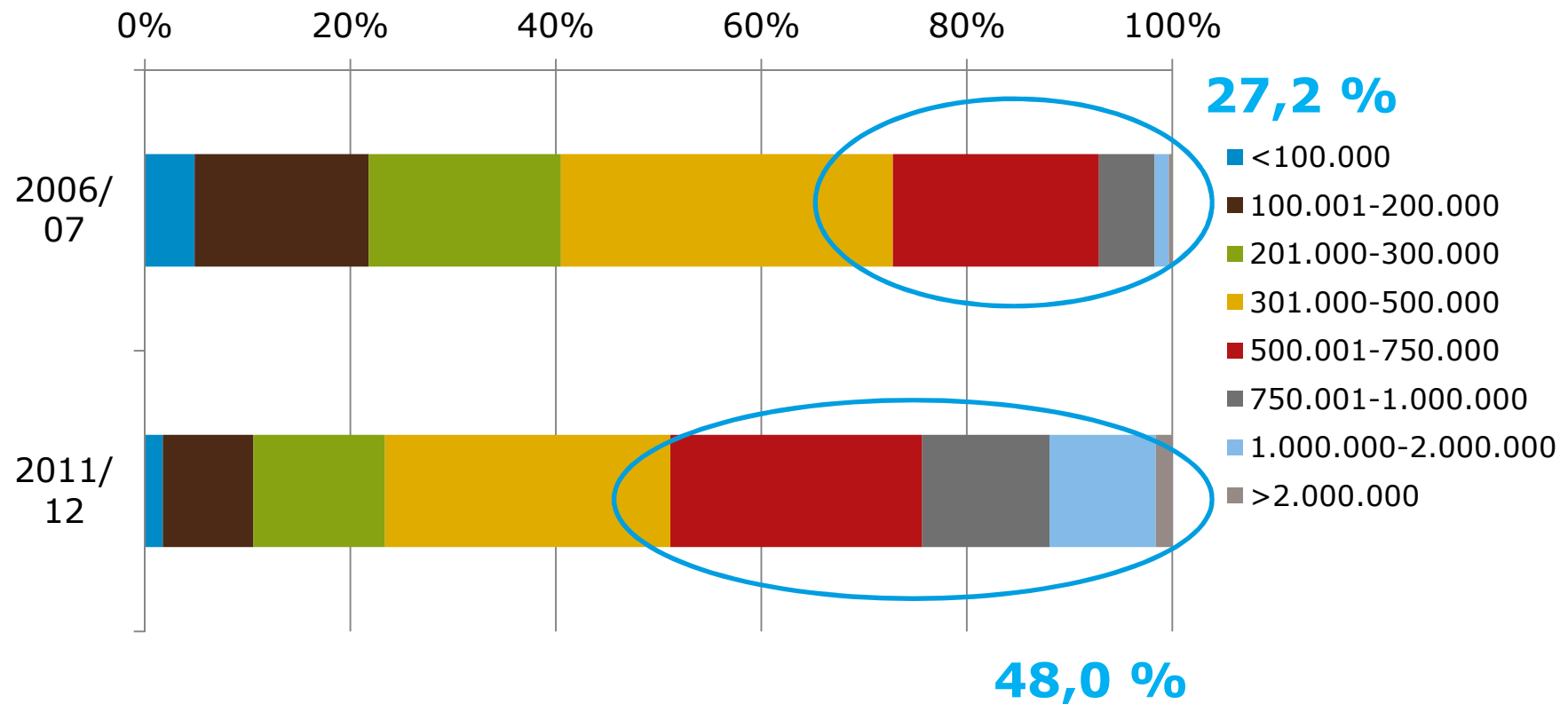
- Strong believe in growth of the sector
 - Survey of AMS: 30% more production in 2018 (compared to 2012)
 - However
 - Supply contracts for private dairy processors
 - Land constraint
 - Manure (nitrate directive)
 - Feed production
 - Labour requiries (mostly family labour) & management
 - New legislation (special protection area's,...)
- => We believe a growth of 15-20% is possible



Share in number of farms per size class (liter milk)



A concentration of dairy production: share in total milk production per size class





Results from FADN data

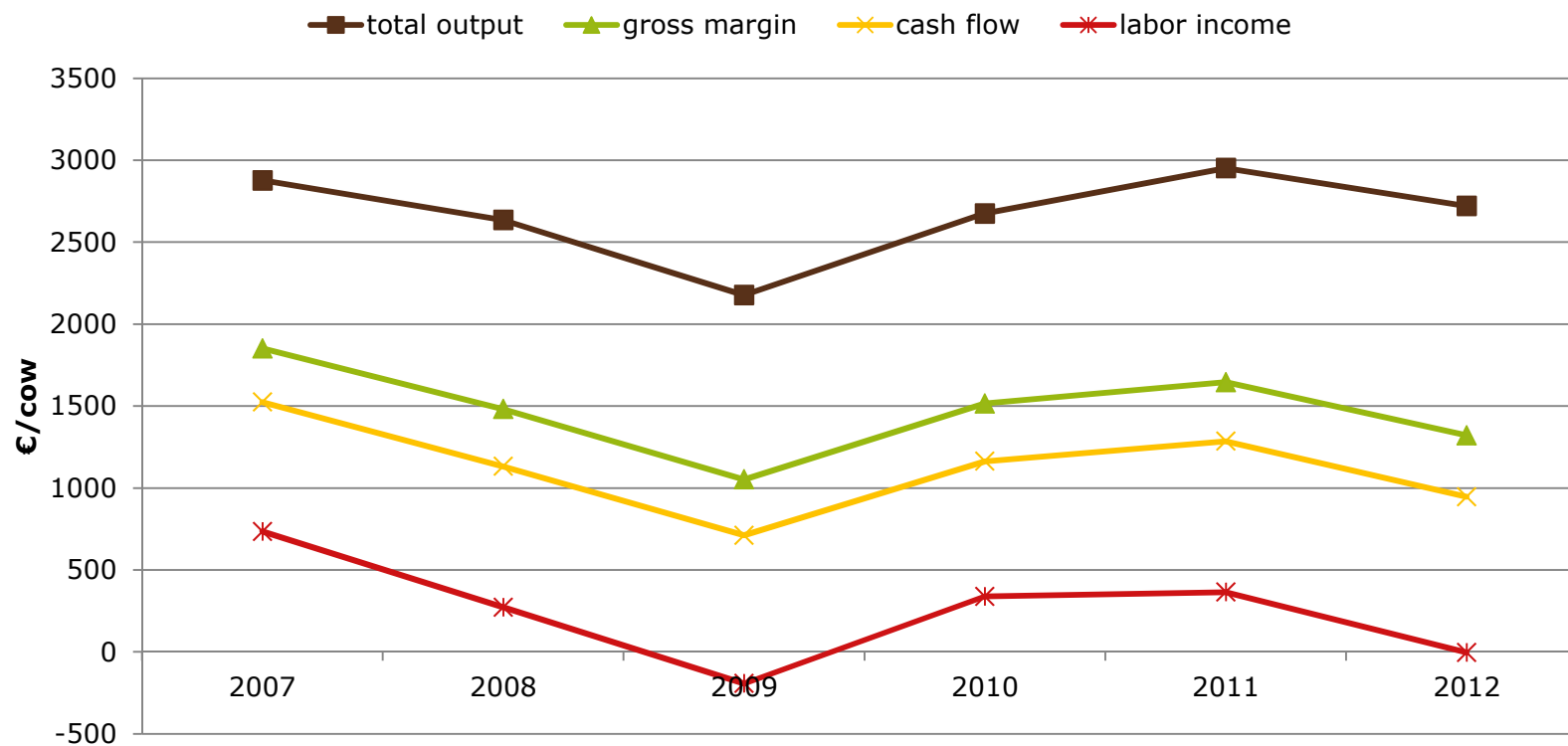
Sample

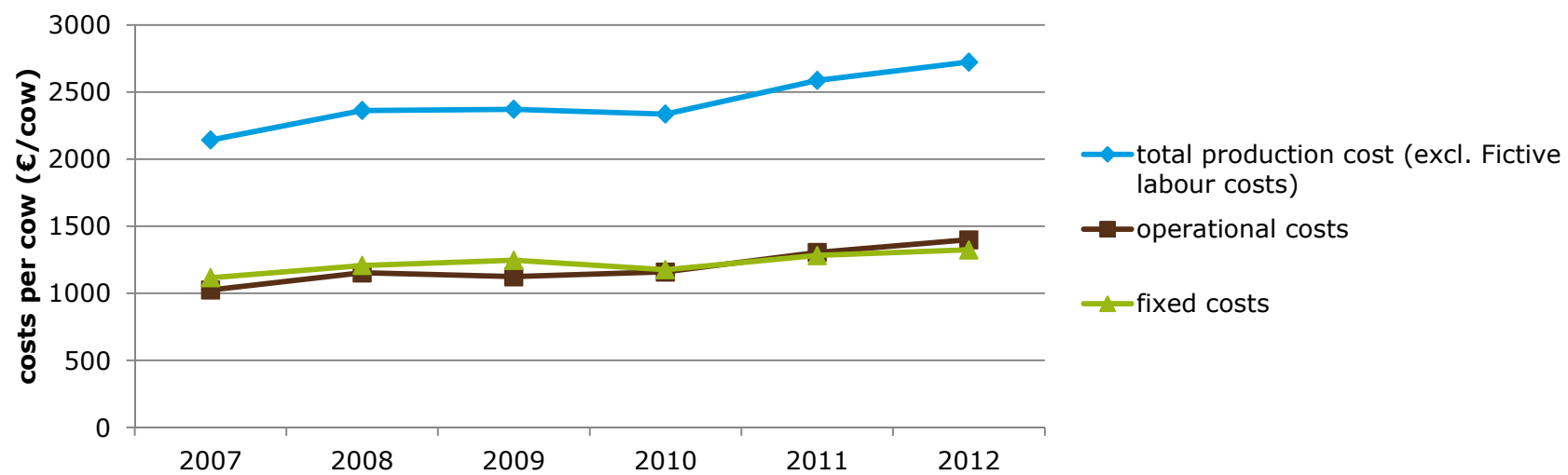
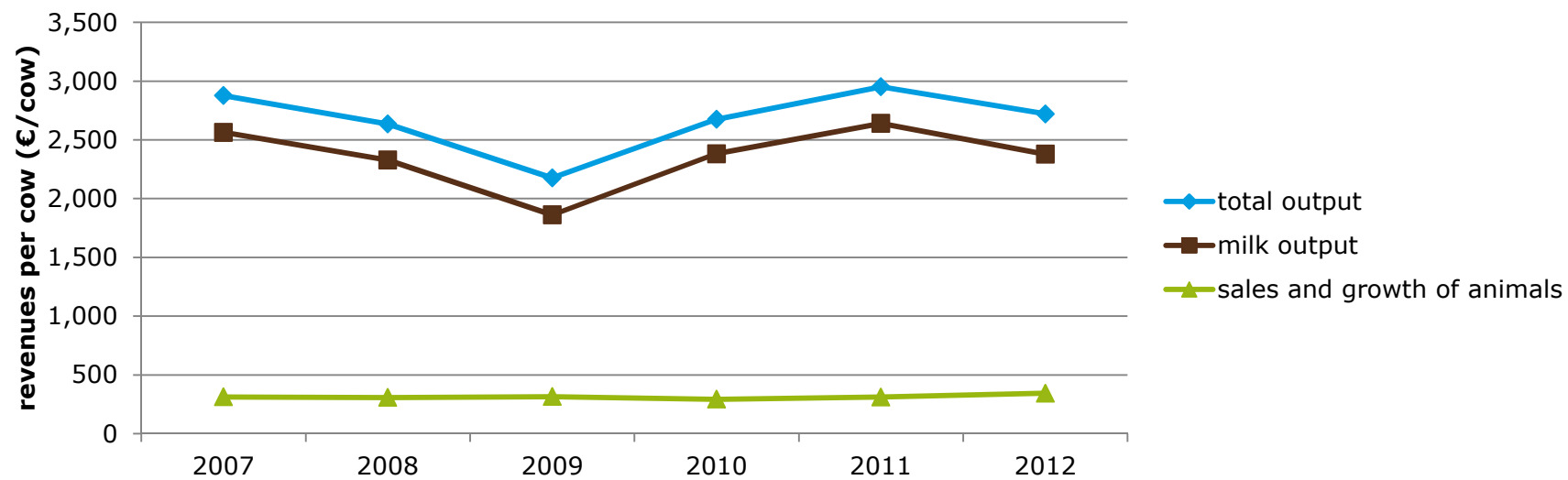
- Region: Flanders
 - Period: 2007-2012
 - Farms
 - Specialised dairy farms (based on SO)
 - Min. productivity: 4.000 l/year/cow
 - Min. production: 100.000 l/year/farm
- ⇒ 90-97 farms per year

Technical performance and change in time

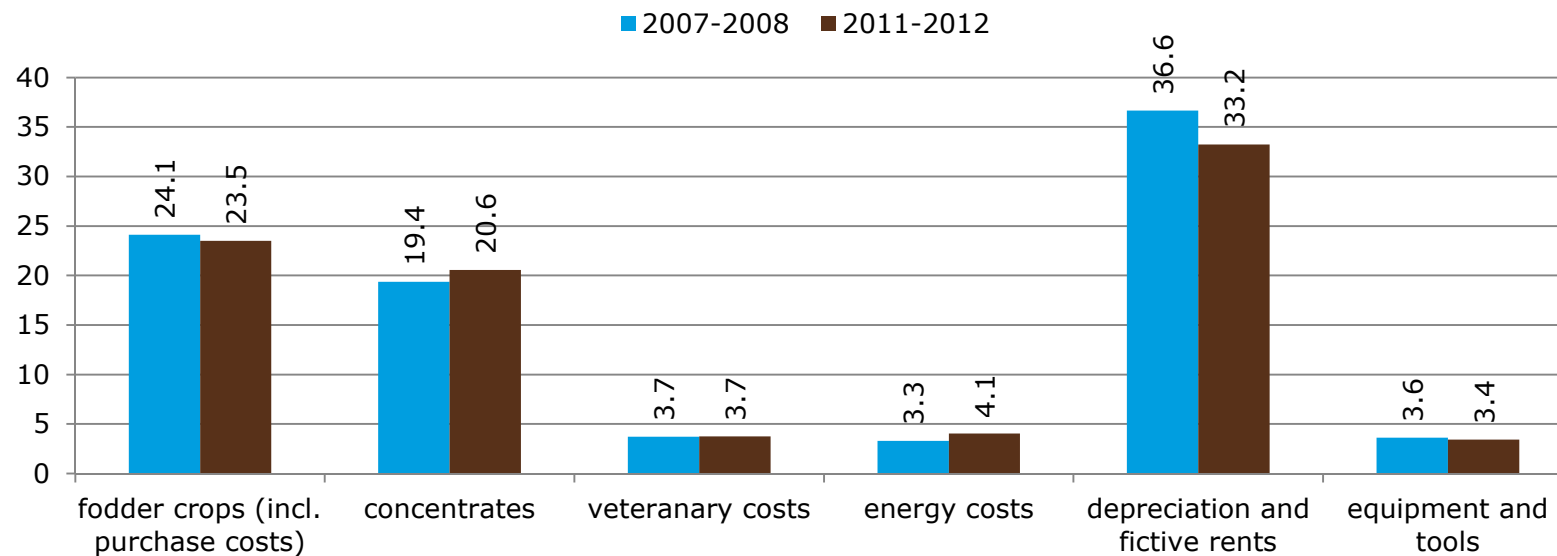
	2007-2008	2011-2012	% change
dairy cows	54	64,0	+19,6 %
production (liter/farm)	379.864	480.826	+26,6 %
land area (ha/farm)	34,5	42,0	+21,7 %
productivity (liter/cow)	7.040	7.536	+7,0 %
intensity (liter/ha)	11.028	11.517	+4,4 %
replacement rate (%)	30,0	34,5	+ 15,0 %
heifers per 100.000 liter	10,7	10,7	-0,5 %
calving interval (days)	426	420	- 6 days
age of first calve (months)	28,3	28,1	-0,2 years
age of cull cows (year)	6,8	6,0	-0,8 years
concentrate use per liter (g/liter melk)	202	182	-9,7 %
concentrate use per cow (kg/cow)	1.418	1.371	-3,3 %
% of milk production based on foddercrops	58	63	

Evolution of most important economic parameters





Importance of cost categories in total production costs



Factors explaining differences in gross margin per cow (1)

- Technical info:
 - Fixed effect model
 - Only time-effect: explains differences between farms
 - Time and subject effect: explains how farms can change gross margin
 - Data: panel data: (2007-2012), specialized farms

Results of regression analyse

parameter	Coëfficiënt	significance
Constante	-2.2265	<0,0001 (***)
Number of dairy cows	1,6678	<0,0001 (***)
Intensity (liter milk/ ha)	-0,0101	0,0101 (**)
Productivity (liter/cow)	0,2889	<0,0001 (***)
Use of concentrates (kg/cow)	-0,5738	<0,0001 (***)
Replacement rates (%)	-4,4514	<0,0001 (***)
Calving interval (days)	-0,1998	0,4539
Age of first calve (months)	-13,6092	0,0002 (***)
Average milk price	98,8025	<0,0001 (***)
Average concentrates price	-73,6156	<0,0001 (***)
Price of young calves	0,6776	0,0004 (***)
Price of cull cow	0,1611	0,0154 (**)
Rate heifers/dairy cows	137,81	0,0017 (***)
Mortality rate dairy cows (%)	-12,6159	0,0008 (***)
Mortality rate heifers (%)	-2,0517	0,7410
Mortality rate young calves (%)	-1,7454	0,6354
Rate concentrates prices / milk prices	1.594,0902	<0,0001 (***)

	difference	impact per cow (€/cow)	impact per farm (60 cows)
Number of dairy cows	1	1.67	100
Intensity (liter milk/ ha)	1000	-10	-606
Productivity (liter/cow)	100	29	1733
Use of concentrates (kg/cow)	100	-57	-3443
Replacement rates (%)	-5	22	1335
Age of first calve (months)	-1	14	817
Average milk price	1	99	5928
Average concentrates price	1	-74	-4417
Price of young calves	10	7	407
Price of cull cow	50	8	483
Rate heifers/dairy cows	0.1	14	827
Mortality rate dairy cows (%)	-0.5	6	378



Replacement rate

Impact replacement rate

- 4 groups based on replacement rates (23-24 farms per group)
 - <25
 - 25 - 32,6
 - 32,6 - 39,2
 - > 39,2
- Anova test: differences are statistically relevant?

Differences in technical parameters between levels of replacement rate

	<25	25-32,6	32,6 - 39,2	>39,2	P-value
replacement value	20,0	29,3	35,5	45,5	<0,0001
dairy cows	59	69	69	61	0,6631
milk production	439.560	536.007	517.527	446.092	0,5644
land area	40	45	45	41	0,8476
productivity	7.410	7.738	7.544	7.294	0,8982
intensity	11.086	12.017	11.418	10.839	0,6172
heifers/dairy cows	0,8	0,8	0,8	0,8	0,4472
heifers/ 100.000l	10,2	10,2	11,2	10,9	0,5810
calving interval	429	423	414	424	0,2718
age of first calve	28,0	28,0	28,1	28,7	0,8153
age of culling cows	6,14	5,72	5,62	6,23	0,8628
mortality rate cows %	1,50	2,71	2,29	2,81	0,1189

Differences in economical parameters between levels of replacement rate

	<25	25-32,6	32,6 - 39,2	>39,2	
Totale revenues	2.738	2.789	2.737	2.611	0,7878
revenues from milk	2.207	2.362	2.299	2.222	0,8808
revenues from cull cows	133	182	234	275	<0,0001
revenues from calves	91	90	76	90	0,2684
purchasecosts for animals	-38	-21	-46	-170	0,2055
total variabel costs	-1.359	-1.432	-1.376	-1.428	0,7684
total fixed costs	-1.355	-1.374	-1.228	-1.345	0,8445
total production costs	-2.714	-2.806	-2.605	-2.774	
gross margin	1.379	1.357	1.360	1.183	0,1841
labor income	24	-17	132	-162	0,5250
Net farm result	-1.014	-967	-798	-1.074	0,6618



Questions?

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