

Appendix

Table A1: Summary statistics of dependent variables (per cow or per labour)

			Dairy sector				Beef sector				Sector comparison
Number of observations			N = 324				N = 208				N = 532
Name	Units	Description	Mean	Standard deviation	Minimum	Maximum	Mean	Standard deviation	Minimum	Maximum	Two-sided p-value
Gross revenues/cow	€/cow	Total revenues – subsidies per cow	5,956.15	26,349.71	-141,322.30	88,214.56	-17,572.33	15,713.87	-66,788.32	12,962.46	p < 0.001
Gross revenues/labour	€/AWU	Total revenues – subsidies per annual work unit	2,651.04	852.45	718.47	6,099.36	1,484.70	449.65	438.77	2,763.46	p < 0.001
Operating expenses/cow	€/cow	Operating costs per cow	1,142.62	477.97	192.38	3,223.52	819.12	283.69	136.96	1,483.31	p = 0.001
Operating expenses/labour	€/AWU	Operating costs per annual work unit	54,293.69	33,945.93	3,586.74	202,124.3	38,816.18	23,539.32	5,488.20	108,764.5	p < 0.001
Operating profits/cow	€/cow	(Total revenues – subsidies – operating costs) per cow	1,480.44	588.45	22.23	3,642.97	644.04	329.66	-71.60	1791.86	p < 0.001
Operating profits/labour	€/AWU	(Total revenues – subsidies – operating costs) per annual work unit	65,229.06	36,380.66	864.78	250,089.00	27,557.52	16,161.66	-2,239.86	78,990.06	p < 0.001
Subsidy/cow	€/cow	Subsidies per cow	391.24	203.46	111.15	1,572.98	555.869	0.07	-141,322.30	88,214.56	p < 0.001
Subsidy/labour	€/AWU	Subsidies per annual work unit	15,263.08	5,981.85	3,986.99	42,911.96	23,299.31	11,138.74	6,816.77	78,900.31	p < 0.001

All variables are expressed per year.

Table A2: Random effects regression analysis for the dairy sector – (dependent variables per cow) (N = 324)

	Milk productivity	Gross revenues/cow	Operating expenses/cow	Operating profits/cow	Operating profit margin	Subsidy/cow	Subsidy dependence
Log (herd size)	0.16 (0.22)	0.07 (0.21)	-0.17 (0.246)	0.43 (0.31)	11.340.11 (8.68)	-1.47*** (0.34)	-27.62*** (7.37)
Grazing livestock density	-0.005 (0.07)	-0.04 (0.08)	0.16* (0.09)	-0.22 (0.14)	-9.71*** (3.60)	0.32* (0.17)	7.43** (3.04)
Log (cattle area)	-0.04 (0.23)	0.01 (0.22)	0.29 (0.27)	-0.32 (0.35)	-12.16 (9.08)	1.13*** (0.35)	22.09*** (7.12)
Share of grassland	-0.004*** (0.002)	-0.003 (0.002)	-0.006** (0.003)	0.002 (0.003)	0.17** (0.08)	0.001 (0.002)	0.06 (0.03)
Log (total concentrate)	0.007 (0.004)	0.01* (0.007)	0.02** (0.01)	0.01 (0.009)	-0.510 (0.404)	-0.002 (0.007)	-0.268 (0.221)
Concentrate autonomy	-0.004* (0.002)	-0.002 (0.002)	-0.005*** (0.002)	0.002 (0.002)	0.12** (0.05)	0.001 (0.002)	0.05 (0.07)
Log (labour)	0.05 (0.03)	0.04 (0.05)	0.05 (0.06)	0.02 (0.12)	1.12 (2.87)	0.13* (0.07)	2.11* (1.24)
Constant	8.32*** (0.28)	8.84*** (0.38)	6.75*** (0.53)	6.89*** (0.63)	63.12*** (14.71)	7.73 (0.38)	36.17*** (5.57)
R ² overall	0.137	0.273	0.349	0.205	0.316	0.603	0.562

***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively. Robust standard errors are reported between parentheses.

Milk productivity, gross revenues, operating expenses, operating profits and subsidies are expressed in logarithmic values.

Seven region dummies are included (*Sablo-limoneuse*, *Condroz*, *Herbagère*, *Ardenne*, *Ardenne*, *Jura*, *Famenne*), with *Limoneuse* as base level.

Three year dummies are included for 2015, 2016 and 2017, with 2014 as base level.

Table A3: Random effects regression analysis for the dairy sector – (dependent variables per annual work unit) (N = 324)

	Milk productivity	Gross revenues/labour	Operating expenses/labour	Operating profits/labour	Operating profit margin	Subsidy/labour	Subsidy dependence
Log (herd size)	0.16 (0.22)	1.30 (0.95)	0.49 (0.32)	1.08*** (0.35)	11.34 (8.68)	-0.57* (0.30)	-27.62*** (7.37)
Grazing livestock density	-0.005 (0.07)	-0.28 (0.55)	0.29** (0.13)	-0.04 (0.17)	-9.71*** (3.60)	0.35** (0.15)	7.43** (3.04)
Log (cattle area)	-0.04 (0.23)	-0.34 (0.98)	0.58* (0.31)	-0.001 (0.39)	-12.16 (9.08)	1.19*** (0.32)	22.09*** (7.12)
Share of grassland	-0.004*** (0.002)	0.007 (0.008)	-0.006** (0.003)	0.001 (0.003)	0.17** (0.08)	0.001 (0.002)	0.06 (0.04)
Log (total concentrate)	0.007 (0.004)	0.04 (0.03)	0.02** (0.01)	0.01 (0.011)	-0.510 (0.404)	-0.005 (0.005)	-0.268 (0.221)
Concentrate autonomy	-0.004* (0.002)	-0.001 (0.006)	-0.006*** (0.002)	0.001 (0.002)	0.12** (0.05)	0.00 (0.003)	0.05 (0.07)
Log (labour)	0.05 (0.03)	-0.70** (0.33)	-0.84*** (0.09)	-0.92*** (0.11)	1.12 (2.87)	-0.87*** (0.05)	2.11* (1.24)
Constant	8.32*** (0.28)	5.60*** (1.34)	6.40*** (0.56)	6.41*** (0.58)	0.63*** (0.15)	7.41*** (0.35)	0.36*** (0.06)
R ² overall	0.137	0.284	0.690	0.516	0.316	0.600	0.562

***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively. Robust standard errors are reported between parentheses.

Milk productivity, gross revenues, operating expenses, operating profits and subsidies are expressed in logarithmic values.

Seven region dummies are included (*Sablo-limoneuse*, *Condroz*, *Herbagère*, *Ardenne*, *Jura*, *Famenne*), with *Limoneuse* as base level.

Three year dummies are included for 2015, 2016 and 2017, with 2014 as base level.

Table A4: Random effects regression analysis for the beef sector – (dependent variables per cow) (N = 208)

	Gross revenues/cow	Operating expenses/cow	Operating profits/cow	Operating profit margin	Subsidy/cow	Subsidy dependence
Log (herd size)	0.17 (0.29)	-0.19 (0.27)	0.34 (0.86)	4.52 (16.31)	-1.10*** (0.23)	-30.75*** (4.93)
Grazing livestock density	0.01 (0.14)	0.12 (0.12)	0.08 (0.41)	0.054 (7.740)	0.24** (0.12)	6.69*** (2.26)
Log (cattle area)	-0.11 (0.30)	0.20 (0.27)	-0.21 (0.82)	-1.15 (16.12)	1.04*** (0.24)	28.31*** (5.60)
Share of grassland	-0.005* (0.003)	-0.010*** (0.002)	0.007 (0.009)	0.32 (0.19)	0.001 (0.003)	0.12* (0.07)
Log (total concentrate)	0.02 (0.01)	0.04* (0.02)	-0.02 (0.02)	-1.56*** (0.28)	-0.006 (0.006)	-0.535 (0.439)
Concentrate autonomy	-0.002 (0.001)	-0.003** (0.001)	0.00 (0.003)	0.09* (0.05)	-0.003*** (0.001)	-0.04 (0.03)
Log (labour)	0.09 (0.10)	0.18* (0.11)	0.06 (0.24)	-2.13 (4.75)	0.07 (0.07)	-0.63 (2.27)
Constant	7.39*** (0.44)	7.00*** (0.50)	5.47*** (1.26)	24.80 (28.67)	6.76*** (0.47)	36.72*** (12.84)
R ² overall	0.338	0.500	0.191	0.309	0.661	0.679

***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively. Robust standard errors are reported between parentheses.

Gross revenues, operating expenses, operating profits and subsidies are expressed in logarithmic values.

Seven region dummies are included (*Sablo-limoneuse*, *Condroz*, *Herbagère*, *Ardenne*, *Ardenne*, *Jura*, *Famenne*), with *Limoneuse* as base level.

Three year dummies are included for 2015, 2016 and 2017, with 2014 as base level.

Table A5: Random effects regression analysis for the beef sector – (dependent variables per annual work unit) (N = 208)

	Gross revenues/labour	Operating expenses/labour	Operating profits/labour	Operating profit margin	Subsidy/labour	Subsidy dependence
Log (herd size)	-5.88 (6.24)	0.43* (0.23)	1.01 (0.89)	4.52 (16.31)	-0.26 (0.22)	-30.75*** (4.93)
Grazing livestock density	4.91 (3.60)	0.31*** (0.11)	0.27 (0.42)	0.054 (7.54)	0.36*** (0.105)	6.70*** (2.26)
Log (cattle area)	6.56 (7.80)	0.55** (0.24)	0.11 (0.86)	-1.15 (16.12)	1.12*** (0.22)	28.31*** (5.60)
Share of grassland	0.18** (0.08)	-0.008*** (0.003)	0.009 (0.009)	0.32 (0.195)	0.003 (0.002)	0.12* (0.07)
Log (total concentrate)	-1.24 (1.04)	0.04** (0.02)	-0.02 (0.015)	-1.56*** (0.28)	-0.004 (0.009)	-0.53 (0.44)
Concentrate autonomy	0.015 (0.021)	-0.002*** (0.001)	0.001 (0.003)	0.09* (0.05)	-0.002** (0.001)	-0.04 (0.03)
Log (labour)	3.81 (3.91)	-0.80*** (0.10)	-0.96*** (0.26)	-2.13 (4.75)	-0.89*** (0.06)	-0.63 (2.27)
Constant	-7.05 (12.14)	6.01*** (0.52)	4.305*** (1.315)	24.89 (28.67)	5.825*** (0.435)	36.71*** (12.84)
R ² overall	0.637	0.818	0.427	0.309	0.778	0.679

***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively. Robust standard errors are reported between parentheses. Gross revenues, operating expenses, operating profits and subsidies are expressed in logarithmic values. Seven region dummies are included (*Sablo-limoneuse*, *Condroz*, *Herbagère*, *Ardenne*, *Ardenne*, *Jura*, *Famenne*), with *Limoneuse* as base level. Three year dummies are included for 2015, 2016 and 2017, with 2014 as base level.