

Appendices

Data in Appendices 1-5 is from USDA, "Livestock, Meat & Grains Domestic Data." *USDA ERS - Domestic Data*

Appendix 1: Cost and Returns of Hogs, U.S. average 2017-2018

	2018	2017	AV
Gross value of production			
Market hogs	54.78	50.91	52.845
Feeder pigs	0.21	0.19	0.2
Nursery pigs	0.02	0.02	0.02
Cull stock	1.27	1.17	1.22
Breeding stock	0.34	0.32	0.33
Inventory change	0.83	0.87	0.85
Other income 2/	3.27	3.55	3.41
Total, gross value of production	60.72	57.03	58.875
Operating costs			
Feed --			
Purchased feed	26.28	28.25	27.265
Homegrown harvested feed	6.02	6.19	6.105
Total feed cost	32.3	34.44	33.37
Other --			
Feeder pigs	0.49	0.44	0.465
Nursery pigs	0.18	0.16	0.17
Veterinary and medicine	3.07	3.15	3.11
Bedding and litter	0.04	0.05	0.045

Marketing	0.22	0.22	0.22
Custom services	0.76	0.79	0.775
Fuel, lube, and electricity	1.92	1.68	1.8
Repairs	1.43	1.39	1.41
Interest on operating capital	0.21	0.1	0.155
Total, operating costs	40.62	42.42	41.52
Allocated overhead			
Hired labor	4.33	4.28	4.305
Opportunity cost of unpaid labor	4.91	4.66	4.785
Capital recovery of machinery and equipment 3/	13.54	13.23	13.385
Opportunity cost of land (rental rate)	0.07	0.07	0.07
Taxes and insurance	0.63	0.64	0.635
General farm overhead	1.28	1.25	1.265
Total, allocated overhead	24.76	24.13	24.445
Total costs listed	65.38	66.55	65.965
Value of production less total costs listed	-4.66	-9.52	-7.09
Value of production less operating costs	20.1	14.61	17.355
Supporting information			
Production arrangement (percent of production)			
Independent	100	100	100
Under contract	0	0	0
Size of operation (head sold/removed)			

Market hogs	3,159	3,179	3169
Feeder pigs	36	37	36.5
Nursery pigs	9	10	9.5

Appendix 2: Cost and Returns of Cattle, U.S. average 2017-2018

	2018	2017	AV
Gross value of production:			
Calves	460.27	438.35	449.31
Stockers and Yearlings	96.83	97.64	97.235
Other cattle 2/	109.67	118.44	114.055
Total, gross value of production	666.77	654.43	660.6
Operating costs			
Feed--			
Purchased feed	93.47	100.26	96.865
Homegrown harvested feed	176.12	172.66	174.39
Grazed feed	117.28	119.43	118.355
Total, feed costs	386.87	392.35	389.61
Other--			
Cattle for backgrounding	53.18	50.65	51.915
Veterinary and medicine	24.49	25.28	24.885
Bedding and litter	0.48	0.5	0.49
Marketing	12.02	12.41	12.215
Custom services	11	11.36	11.18
Fuel, lube, and electricity	28.88	26.09	27.485
Repairs	38.39	37.53	37.96

Interest on operating capital	2.91	1.28	2.095
Total, operating cost	558.22	557.45	557.835
Allocated overhead			
Hired labour	38.7	37.8	38.25
Opportunity cost of unpaid labour	434.2	423.98	429.09
Capital recovery of machinery and equipment 3/	263.44	257.5	260.47
Opportunity cost of land (rental rate)	0.2	0.2	0.2
Taxes and insurance	21.73	22.43	22.08
General farm overhead	34.69	34.11	34.4
Total, allocated overhead	792.96	776.02	784.49
Total costs listed	1,351.1 8	1,333.4 7	1342.32 5
Value of production less total costs listed	-684.41	-679.04	-
Value of production less operating costs	108.55	96.98	102.765
Supporting information			
Beef cows on farm or ranch (head per farm/ranch)	100	100	100
Cows and heifers calving (head per farm/ranch)	86	86	86
Calves weaned (head per farm/ranch)	72	72	72
Calf weaning weight (pounds per head)	500	500	500
Calves sold (head per farm/ranch)	54	54	54
Stockers and Yearlings sold (head per farm/ranch)	10	10	10

Appendix 3: Cost and Returns of Corn, U.S. average 2017-2018

	2018	2017	AV
Gross value of production			
Primary product grain	617.97	618.42	618.195
Secondary product silage	2.09	1.81	1.95
Total, gross value of production	620.06	620.23	620.145
Operating costs			
Seed	98.84	100.1	99.47
Fertilizer (commercial fertilizers, soil conditioners, and manure)	115.51	128.68	122.095
Chemicals	35.25	36.16	35.705
Custom services (custom operations, technical services, and commercial drying)	23.15	23.84	23.495
Fuel, lube, and electricity	27	23.78	25.39
Repairs	32.89	32.3	32.595
Purchased irrigation water	0.25	0.25	0.25
Interest on operating capital	1.75	0.79	1.27
Total, operating costs	334.64	345.9	340.27
Allocated overhead			
Hired labour	4.11	4.01	4.06
Opportunity cost of unpaid labour	22.17	21.63	21.9
Capital recovery of machinery and equipment	120.96	118.87	119.915
Opportunity cost of land	169.92	171.82	170.87
Taxes and insurance	11.87	11.74	11.805

General farm overhead	18.37	18.08	18.225
Total, allocated overhead	347.4	346.15	346.775
Costs listed			
Total, costs listed	682.04	692.05	687.045
Net			
Value of production less total costs listed	-61.98	-71.82	-66.9
Value of production less operating costs	285.42	274.33	279.875
Supporting information			
Yield (bushels/acre)	190	188	189
Price (USD/bushel at harvest)	3.26	3.29	3.275
Enterprise size (planted acres)	268	268	268
Production practices			
Dryland (% of acres)	89	89	89
Irrigated (% of acres)	11	11	11

Appendix 4: Cost and Returns of Soybeans, U.S. average 2017-2018

	2018	2017	AV
Gross value of production			
Primary product soybeans	454.72	491.92	473.32
Total, gross value of production	454.72	491.92	473.32
Operating costs			
Seed	58.07	58.79	58.43
Fertilizer ^a	25.06	28.14	26.6
Chemicals	26.83	27.64	27.235

Custom services	10.32	10.6	10.46
Fuel, lube, and electricity	13.57	11.89	12.73
Repairs	23.34	22.82	23.08
Purchased irrigation water	0.06	0.06	0.06
Interest on operating capital	0.83	0.37	0.6
Total, operating costs	158.08	160.31	159.19 5
Allocated overhead			
Hired labor	3.26	3.19	3.225
Opportunity cost of unpaid labour	19.4	18.9	19.15
Capital recovery of machinery and equipment	90.99	88.84	89.915
Opportunity cost of land	142.86	143.72	143.29
Taxes and insurance	10.66	10.52	10.59
General farm overhead	18.25	17.98	18.115
Total, allocated overhead	285.42	283.15	284.28 5
Costs listed			
Total, costs listed	443.5	443.46	443.48
Net			
Value of production less total costs listed	11.22	48.46	29.84
Value of production less operating costs	296.64	331.61	314.12 5
Supporting information			

Yield (bushels per planted acre)	49	52	50.5
Price (dollars per bushel at harvest)	9.28	9.46	9.37
Enterprise size (planted acres)	273	273	273
Production practices			
Dryland (% of acres)	90	90	90
Irrigated (% of acres)	10	10	10

Appendix 5: Cost and Returns of Wheat, U.S. average 2017-2018

	2018	2017	AV
Gross value of production			
Primary product grain	194.46	199.64	197.05
Secondary product silage/straw/grazing	8.87	8.82	8.845
Total, gross value of production	203.33	208.46	205.895
Operating costs			
Seed	14.75	15.26	15.005
Fertilizer (commercial fertilizers, soil conditioners, and manure)	30.66	34.18	32.42
Chemicals	14.56	14.89	14.725
Custom services	11.35	11.08	11.215
Fuel, lube, and electricity	12.47	10.9	11.685
Repairs	22.04	21.55	21.795
Other variable expenses (purchased irrigation water and straw baling)	0.7	0.69	0.695
Interest on operating inputs	0.56	0.25	0.405
Total, operating costs	107.09	108.8	107.945

Allocated overhead			
Hired labour	2.5	2.39	2.445
Opportunity cost of unpaid labour	19.42	18.86	19.14
Capital recovery of machinery and equipment	91.43	89.39	90.41
Opportunity cost of land	63.07	62.89	62.98
Taxes and insurance	7.36	7.24	7.3
General farm overhead	11.59	11.37	11.48
Total, allocated overhead	195.37	192.14	193.755
Costs listed			
Total, costs listed	302.46	300.94	301.7
Net			
Value of production less total costs listed	-99.13	-92.48	-95.805
Value of production less operating costs	96.24	99.66	97.95
Supporting information			
Yield (bushels per planted acre)	41	51	46
Price (dollars per bushel at harvest)	4.72	3.93	4.325
Enterprise size (planted acres)	443	443	443
Production practices			
Winter wheat (percent of acres)	69	69	69
Spring wheat (percent of acres)	26	26	26
Durum wheat (percent of acres)	4	4	4
Dryland (percent of acres)	95	95	95
Irrigated (percent of acres)	5	5	5

Appendix 6: Excerpt from Marsh's *Cross-Sector Relationships Between the Corn Feed Grains and Livestock and Poultry Economies* on 3SLS Regression results of Livestock and Corn Model and respective formulas

$$\begin{aligned}\hat{Q}_{CN} &= 4.126 + 0.469\hat{P}_{CN(-1)} + 0.212\hat{P}_{LN} \\ &- 0.484\hat{P}_{FT} - 0.412\hat{P}_{SY} + 0.151D_P \\ &+ 0.011T\end{aligned}$$

$$\begin{aligned}\hat{P}_{CN} &= -3.387 - 0.371\hat{Q}_{CN} + 0.191\hat{P}_E \\ &+ 0.440\hat{P}_{B(-1)} + 0.127\hat{P}_{P(-1)} \\ &+ 0.454\hat{P}_{CK},\end{aligned}$$

$$\begin{aligned}\hat{Q}_B &= 1.518 + 0.188\hat{P}_{B(-1)} - 0.061\hat{P}_{CW(-1)} \\ &- 0.064\hat{P}_{CN(-1)} - 0.260\hat{P}_F \\ &- 0.004T + 0.770\hat{Q}_{B(-1)}\end{aligned}$$

$$\begin{aligned}\hat{P}_B &= 1.304 - 0.565\hat{Q}_B + 0.754\hat{P}_{BX} \\ &+ 0.113\hat{P}_{BV} + 0.194\hat{P}_L - 0.001T,\end{aligned}$$

$$\begin{aligned}\hat{Q}_P &= -0.457 + 0.241\hat{P}_{P(-1)} - 0.110\hat{P}_{CN(-1)} \\ &+ 0.008T + 0.845\hat{Q}_{P(-1)}\end{aligned}$$

$$\begin{aligned}\hat{P}_P &= 4.000 - 0.641\hat{Q}_P + 0.412\hat{P}_{PX} \\ &+ 0.225\hat{P}_{PV} - 0.027\hat{P}_L - 0.008T,\end{aligned}$$

$$\begin{aligned}\hat{Q}_{CK} &= 0.167 + 0.091\hat{P}_{CK(-1)} - 0.045\hat{P}_{CN} \\ &- 0.055\hat{P}_{BL} + 0.006T + 0.869\hat{Q}_{CK(-1)}\end{aligned}$$

$$\begin{aligned}\hat{P}_{CK} &= -0.723 - 0.133\hat{Q}_{CK} + 1.045\hat{P}_{BR} \\ &+ 0.045\hat{P}_{BX} - 0.003\hat{P}_{PX} + 0.043\hat{P}_L,\end{aligned}$$

Appendix 7: Living Costs and Food Survey, UK Data Service, 2011

	Deciles									
	1	2	3	4	5	6	7	8	9	10
Beef consumption (g)	92	96	100	103	102	135	111	118	141	116
Pork consumption (g)	50	47	56	62	76	54	53	52	47	56
Chicken consumption (g)	172	175	165	186	179	208	187	202	217	204
Expenditures on beef (p)	51	59	62	62	67	77	77	82	94	85
Expenditures on pork (p)	24	25	27	29	37	27	28	28	27	32
Expenditures on chicken(p)	62	63	62	72	74	82	85	92	104	107

Appendix 8: Average incomes, taxes and benefits by decile groups of ALL households, 2010/11,
Office for national statistics, UK

	Deciles									
	1	2	3	4	5	6	7	8	9	10
Equivalised disposable income	8410	12 975	15 733	18 345	21 123	24 287	28 561	34 109	42 319	75 061