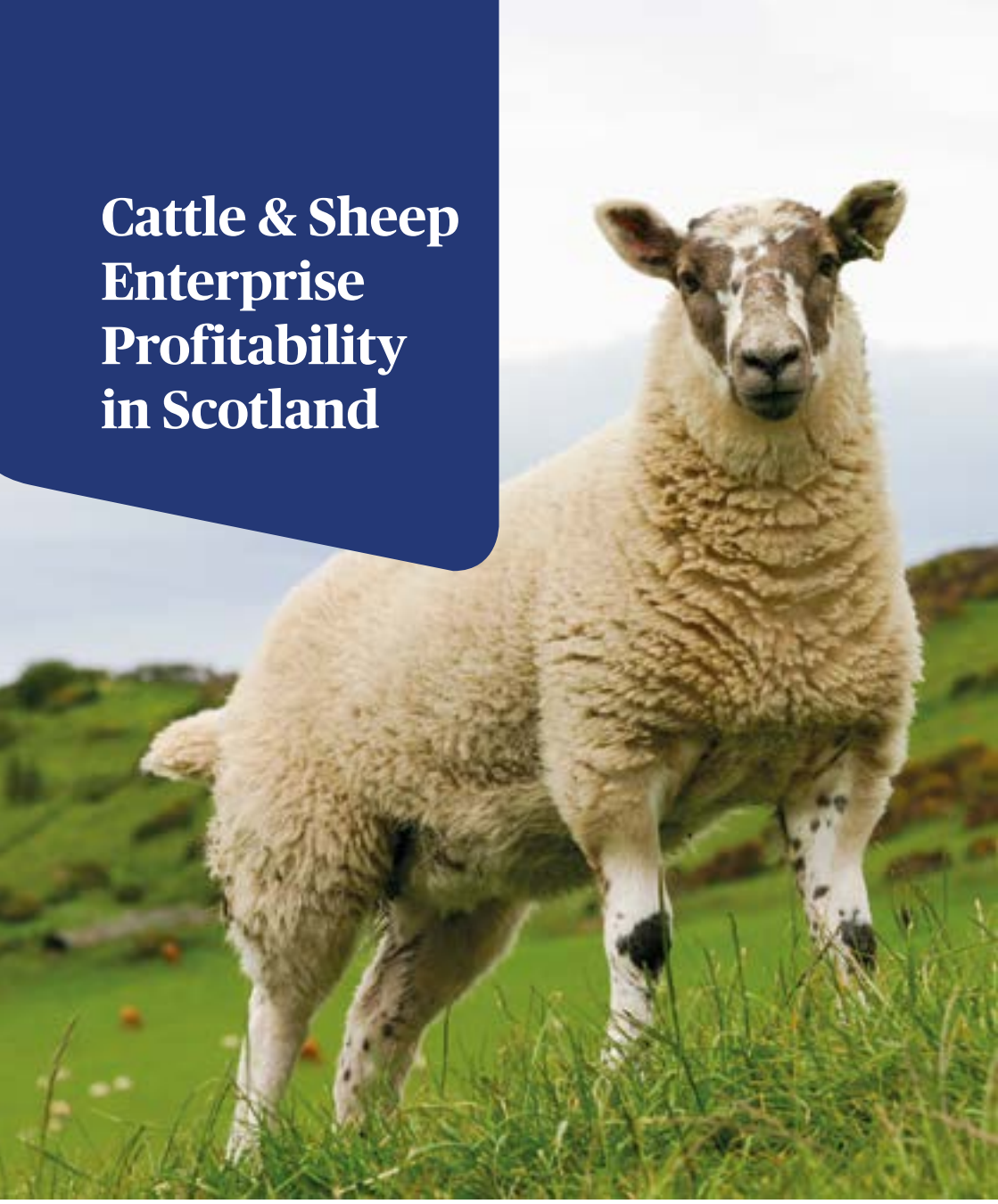
Cattle & Sheep Enterprise Profitability in Scotland



2020 Edition

QMS

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Executive Summary

THIS REPORT on enterprise profitability covers the 2019 calf and lamb crop year. The weather over this period was more benign than in 2018 being generally warmer and offering good grass growing conditions for most of the year. There were though some spells of cold wet weather with snow in places during the peak calving and lambing period. While input costs averaged higher than in 2018, they trended downwards during the year and were below 2018 levels from August onwards, with fertiliser and cereals considerably cheaper by the year-end. At store cattle sales, the autumn season failed to match spring price levels for a second year. However, the declines relative to autumn 2018 of around 6% in September and 2% in October were less than those seen at prime cattle sales, where prices spent the autumn 9-12% behind 2018, pointing to a particular squeeze on finishing margins. On the sheep side, a better lambing saw more store lambs traded at autumn sales, and despite this and the uncertainty around EU exit, selling prices held up. At prime lamb sales, prices were in line with their five-year average for most of the summer and autumn, before rising strongly in the final two months once EU exit had been delayed. Fortunately for store lamb finishers, the prime lamb market reached record levels in the first quarter of 2020; although prices did weaken following the onset of the Covid pandemic in late March and failed to fully recover at Easter.

- Despite costs savings in feed and forage, the decline in market prices led to further deterioration in margins among suckler herds and continues to illustrate the scale of the challenge of achieving a positive margin without CAP support. Thirty-one percent of suckler herds in the survey achieved a positive net margin, this is a decrease from the 36% last year.
- Margins among store finishers also reduced on the year with 30% of the businesses surveyed achieving a positive net margin, down from 38% of businesses last year.
- The proportion of hill ewe flocks making a positive net margin increased from 8% last year to 15% this year. Meanwhile, net profitability among upland flocks stood at 75% of enterprises surveyed achieving a positive net margin for their 2019 lamb crop, up from 55% last year and 56% from the 2017 lamb crop year. Lowground flocks saw the most significant increase in margins with 62% of surveyed flocks achieving this objective compared to 38% achieving a positive net margin for the 2018 lamb crop. Store lamb finishers similarly saw a marked improvement in net margins with 92% of those surveyed achieving a positive net margin compared to 69% of those surveyed in 2018.
- Nevertheless, both cattle and sheep enterprises reporting positive net margins still struggled to deliver a fair return for labour and capital.
- The survey results continue to show significant variation in levels of financial and technical performance within the industry. Most of this variation is associated with the level of physical performance, although volatility in the market place also means timing of sales and purchases can be an influence, characterised by the number of live animals reared to point of sale influencing the weight of animal sold per cow or ewe

in the herd. Also affecting the variation in margins was the level of mortality among breeding stock and the level of replacements need to maintain herd or flock size. Improved margins were associated with low breeding stock mortality and generally lower herd replacement rates. Having cull stock to sell to set against the cost of replacement stock affects the cost of herd maintenance.

- Top-third producers are also characterised by strong cost control, particularly variable costs. With the exception of cattle finishers selling animals over 22 months of age, all cattle and sheep groups show top-third producers to have lower variable costs per animal. Fixed costs though were harder to manage and while top-third suckler herds had lower fixed costs than the average the same cannot be said for breeding sheep enterprises.
- The LFA hill suckler herds surveyed had an average gross margin of £211 per cow, a decline on the year of £11 per cow. A decline in income because of lighter animals been sold at lower prices than last year could not be offset by lower feed and forage costs and the reported average net margin of (-) £221 was £9 lower than last year. The top-third averaged £365 per cow gross margin, an improvement over the average of £154 per cow, and a net margin of (-) 51 per cow. Of the fifteen producers surveyed only one achieved a positive net margin.
- The LFA upland suckler herds were split into two categories, one group selling at weaning and a second group selling yearling stores. Those selling weaned calves saw net margins unchanged on the year at (-) £24 per cow, while those selling yearlings saw net margins fall to (-) £128 from (-) £107 last year. Both groups were affected by lower market returns. Those selling at weaning made an average gross margin of £360 per cow, but were outperformed by their counterparts selling yearlings who achieved an average gross margin of £382 per cow. However, fixed costs were much higher among those selling older cattle and the net margin was £104 per head worse than those selling younger cattle. Thirty-eight percent of businesses selling calves at weaning achieved a positive net margin, down from 43% last year. In contrast, among those selling yearlings, 19% of the businesses achieved a positive net margin, a decline on the 22% of businesses who achieved this target last year.
- Despite improved herd productivity, 2 more calves reared per 100 cows than a year ago, non-LFA suckler herds reported an average gross margin of £342 per cow, a decline of £7 per cow on the year. Net margins also fell for (-) £16 per cow last year to (-) £47 per cow this year. Thirty-five percent of the businesses surveyed achieved a positive net margin.
- Rearer finisher businesses surveyed, recorded an average gross margin of £462 per cow, a decline of £40 on the average from last year, with the top-third averaging £619. The average net margin fell to (-) £69 having on average been (-) £33 a year ago. The proportion of businesses with a positive net margin declined to 45% from 50% last year.
- Cereal-based cattle finishers surveyed, reported an average gross margin of £73 per beast and a net margin of (-) £30, a decline of £70 on the year pushing the net margin negative for the first time in more than ten years. Those in the top-third achieved a £290 improvement in net margin over the average. However, timing of sales played a large part as the top-third saw selling prices 4% lower on the year, while the average was 9% lower. They also reported significantly lower feed costs as they used 250kg less concentrate feed per animal than the average. Fifty-three

percent of businesses in the survey reported a positive net margin down from 66% last year.

- Forage-based finishers have been split into two groups, those selling cattle under 22 months of age and those selling cattle over 22 months of age. Those selling younger cattle achieved an average gross margin of £30 per beast and reported a net margin of (-)£163, almost double the level of loss reported last year. Those selling older cattle achieved a gross margin of £69 per head and net margin of (-) £141, a decline of £82 per head on the year. Fifteen percent of those selling younger cattle achieved a positive net margin, down from 17% last year, similarly 28% of those selling the older cattle achieved a positive net margin which was down from 33% last year.
- LFA hill sheep enterprises in the survey achieved, on average, a gross margin of £21 per ewe, a recovery of £9 per ewe from a year ago. The top-third benefited from higher prolificacy and lamb weights resulting in a net output £17 per ewe higher than the average, and with variable costs slightly lower than the average this transferred into a gross margin £17 per ewe better than the average. The improvement in margins meant that 15% of those businesses in this group achieved a positive net margin compared to 8% last year.
- Seventy-five percent of upland ewe enterprises surveyed reported a positive net margin, up from 55% last year, with an average net margin of £7 per ewe, an improvement of £6 per ewe. Although those in the top-third achieved a net margin of £19 per ewe, this was only £2 per ewe better than a year ago.
- Lowground breeding ewe businesses in the survey saw a decline in ewe productivity which, combined with lower market prices than a year ago during June to September 2019, led to a decline in output of £28 per ewe. Consequently, and not withstanding lower variable costs, gross margins fell £20 per ewe. Higher fixed costs pushed the decline in net margin to £22 per ewe, pushing them negative at (-) £4 per ewe on average.
- Store lamb finishers benefited from very firm prime lamb prices in early 2020 which were a significant contributory factor to this group of businesses reporting net margins per lamb sold more than double last year's levels at £10 per lamb. Although store lambs were bought at very similar prices to 2018, lower mortality rates also contributed to better returns as did a lower cost base. In comparison to last year, when 69% of businesses surveyed achieved a positive margin, in 2019 the figure had risen to 92%.
- For a fifth year, estimates have been made of the greenhouse gas emissions associated with the enterprises surveyed and reported on the basis of net liveweight produced or added during the surveyed year. The calculations were made using the SAC Consulting's resource efficiency calculator, Agrecalc ©. The results show over the five years that there has been some general reduction in average emissions per kg of output but the differences are too small and the range of emissions overlap from year to year to suggest the movement is a definitive trend. The results also show the challenge of reporting against kg of output which can be badly affected by weather conditions and the level of inputs needed to maintain animal welfare during periods of weather challenge. Nevertheless, there remains a clear correlation between the best financial returns, the best technical efficiency and the lowest greenhouse gas emissions per unit of output. In the same way that this report summarises the opportunity that exists for the industry to improve financial margins, it also shows the scope to reduce emissions at the same time.

Introduction

This report summarises the results of a survey of Scottish beef and sheep enterprise profitability during the 2019 calf and lamb crop year. The survey was commissioned by Quality Meat Scotland and carried out by SAC Consulting.

THE SURVEY covers 85 breeding ewe enterprises farming 50,000 ewes and 111 suckler cattle enterprises farming 10,325 suckler cows, 14 enterprises finishing 10,500 store lambs and 53 cattle finishing enterprises selling 4,500 prime cattle. The survey provides a snapshot of the industry during 2019. This report compares, for each sector, the costs, revenues and margins achieved by the top-third of producers, the bottom-third and the sample average.

The concluding sector of the report provides some comparative analysis with the results from 2017 and 2018. However, it must be stressed that the comparisons are not identical samples of businesses.

Within the analysis of the survey, an enterprise's estimated fixed and variable costs can be found, as well as their estimated gross and net margins. The gross margin is left after variable costs have been deducted from an enterprise's revenues. Then, once fixed costs have been subtracted from the gross margin, one is left with the enterprise's net margin, which rewards the farmer for their labour and capital investment. Fixed costs have been allocated to the livestock enterprises on a farm in direct proportion to their share of the total sales revenue of that business. Within mixed livestock farms, fixed costs have been allocated between cattle and sheep enterprises in relation to their proportion of Grazing Livestock Units. The reporting of bottom third, average and top-third is based on ranking enterprises by gross margin per head of livestock.

The analysis has been extended to include estimates of the time committed to the enterprises by family labour for which no charge has been recorded in the estimate of net margins. The level of income required to provide a 5% return on an enterprise's working capital has also been estimated in addition to the opportunity cost of the land used.

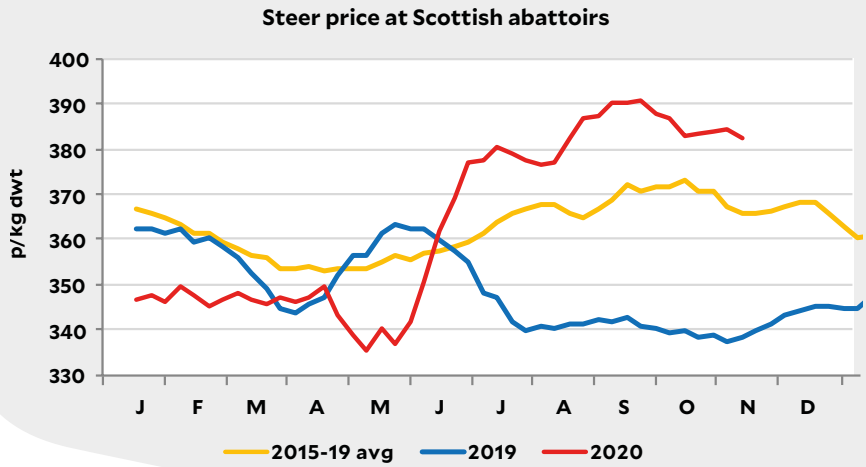
All area-based support payments have been excluded from this year's analysis of the returns derived from livestock enterprises since there is no obligation for livestock production to take place in order to receive area payments. However, the Scottish beef calf premium has been included since it is coupled to the level of production.

Estimates of carbon efficiency have been made using SAC Consulting's Agrecalc © methodology.

The considerable range of land types and production systems found in Scotland inevitably means that any survey of businesses cannot cover all options. However, results are presented for a comprehensive range of enterprise types, namely:

- LFA hill herds selling calves at weaning
- LFA upland herds selling calves at weaning
- LFA upland herds selling forward stores
- Non-LFA herds
- Rearer-finisher herds
- Cereal-based finishing enterprises finishing cattle under 20 months of age
- Forage-based enterprises finishing cattle at under 22 months of age
- Forage-based enterprises finishing cattle at over 22 months of age
- Non-LFA breeding flocks
- LFA upland ewe flocks
- LFA hill flocks using Blackface or Cheviot stock; and
- Store lamb finishers.

Both the range of performance and the key contributing factors to these differences in performance between businesses are demonstrated by the results of the survey. The results also provide individual businesses with a benchmark to gauge their own performance against, thereby allowing them to investigate the strengths and weaknesses of their enterprise compared with those of similar businesses.



Cost price changes during 2019

AFTER TWO years of increases the annual average steer price at Scottish abattoirs fell 7.6% in 2019, leaving it at an eight-year low of 348.7p/kg. This was 3.9% below its average level from 2015-19 and 13.5% lower than the 2013 peak. Scottish abattoirs paid an average of £1,343 for a steer carcase in 2019, with slightly higher carcase weights limiting the year-on-year decline to 7%.

With the general level of consumer prices in the UK rising by another 1.8% in 2019, the fall in prime steer prices extended to 9.1% in real terms, placing inflation-adjusted prices back at around where they had opened the decade.

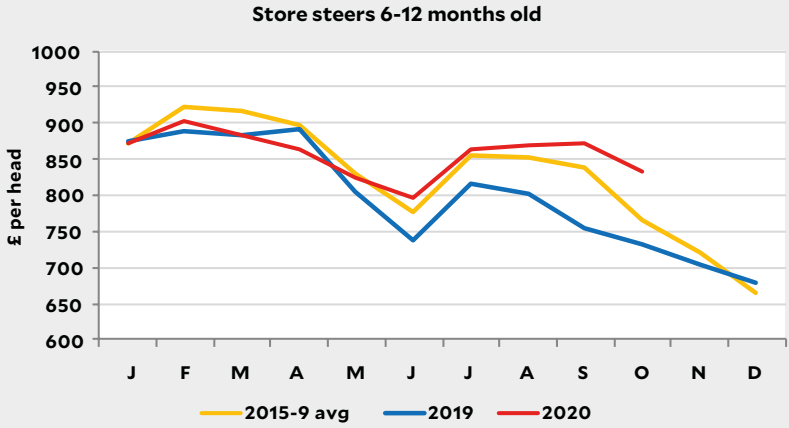
Until falling sharply in June, farmgate prices had generally followed a traditional seasonal pattern. However, the timing of a potential no-deal EU exit at the end of March may have led to the sharper downswing in March and recovery in April, with slaughter being brought forward to build stocks ahead of potential market disruption.

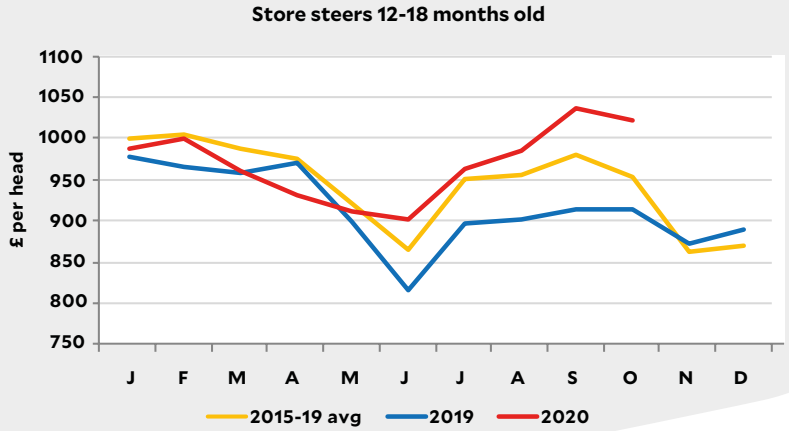
The market was relatively stable for much of the second half of the year but prices did lift slightly around the time of peak festive season procurement. September saw some of the lowest prices of the year when often the market would peak around this time.

In 2019, store cattle prices peaked in the main spring selling period, with autumn sales once again attracting lower prices. At autumn sales, values peaked earlier than in recent years for younger steers but peaked later for steers in the 12-18-month category.

For significant portions of the year, store values were lower than in 2018. However, prices fell by less than those for finished cattle, suggesting a more significant squeeze on margins for the average cattle finisher.

Six-12-month steers were 2.1% cheaper than in 2018 at £835, while 12-18-month steers averaged 3% cheaper at £926. These were 62.2% and 68.9% of the average finished steer carcase price at Scottish abattoirs, both around 3 percentage points higher than in 2018, thereby





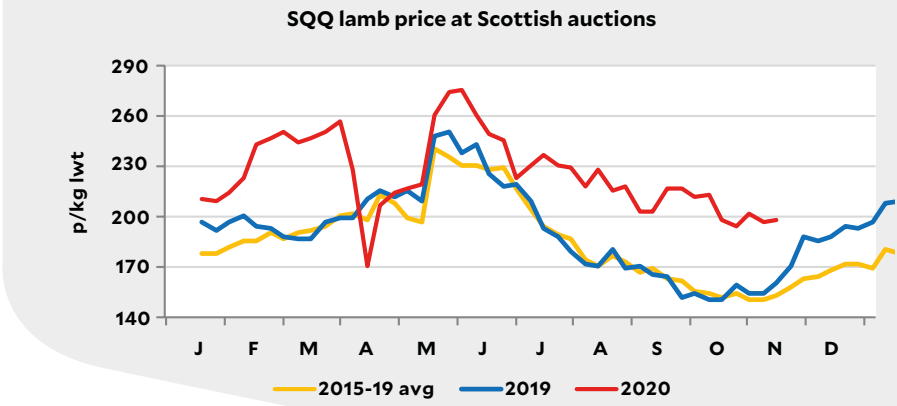
highlighting the additional squeeze on cattle finishers in 2019. However, these percentages were only slightly above the five-year average.

In 2019, prime sheep prices averaged 186.8p/kg at Scottish auctions. This was a reduction of 5.5% from 2018, which had its annual average boosted by the exceptional prices seen during the spring. Prices still exceeded their 2015-19 average by 3.2%.

Prime lamb prices at Scottish auctions followed a traditional seasonal pattern in 2019 and held close to their 2015-19 average for much of the year, with the main exception being a stronger end to the year.

Producers selling hoggs around Easter saw prices average around 210p/kg.

New season lamb prices peaked at around 240p/kg in the first half of May and held up at around 215p/kg for much of June before falling sharply. Peak procurement for Eid al-Adha



came in early August and it saw prices bounce by around 5% for a week before falling 5% a week later. Prices slumped to their annual low point of around 155p/kg in September. In 2018, the low point had been in October.

After the UK's withdrawal from the EU was extended from October 31st 2019 to the end of January 2020, thereby removing the immediate risk of UK exports facing EU tariffs and new customs administration, prices climbed significantly in the first half of November, reaching 190p/kg, and prices surpassed the £2/kg mark in the week before Christmas.

Store lamb marketings recovered strongly in the autumn of 2019 following the tight supply situation of 2018, where census results pointed to a poor lambing among the large extensive upland flocks hit hardest by the cold wet spring. 12% more store lambs were traded, and the average price rose by 1.2% to £49.86. 58% of lamb sales took place between mid-August and late September.

For Blackface lambs, the number sold surged by 44% and the average price was 8.5% higher at £39.99. Suffolk lambs were priced at an almost unchanged £57.64, with 3% more sold.

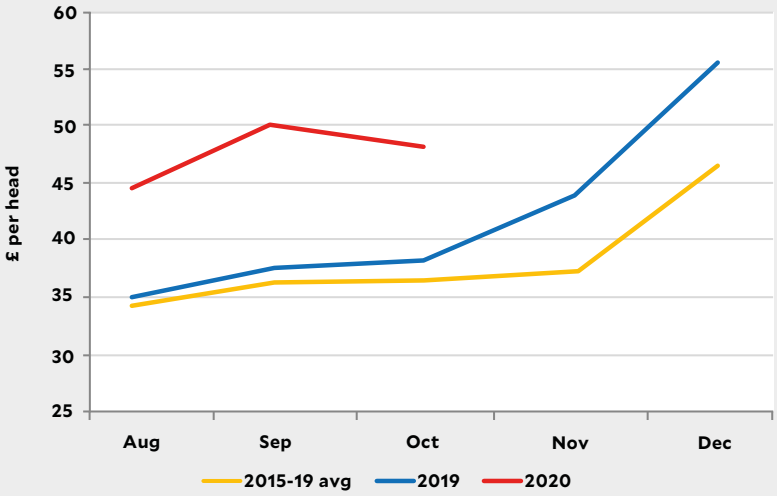
Prices for finished lambs averaged 24.7% higher in the first quarter of 2020 than they had in the final quarter of 2019, compared to an average uplift of 14.4% in the previous five marketing years, suggesting a good season for store lamb finishers. However, following the market disruption of late March, finishers selling around Easter did not get the same uplift.

In 2019, UK agricultural input prices, as reported by Defra, increased for a third consecutive year and were slightly higher than the previous highs in 2012 and 2013.

However, input costs trended slowly downwards as the year progressed, with the annual comparison reflecting the lift through 2018, which meant a lower base to compare against in the early part of the year. Indeed, having opened the year up 6.6%, input prices fell behind year earlier levels in August and ended the year averaging 3.1% lower than twelve months previously.

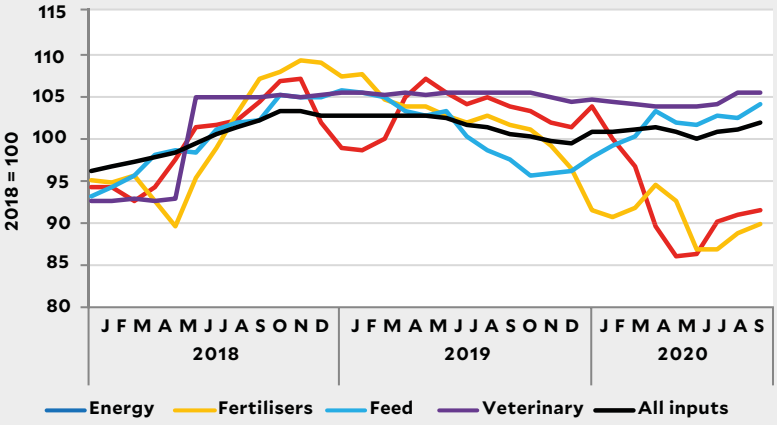
Having risen in late 2018, energy costs rose further in the early part of 2019, generally peaking in April and May before trending downwards to the end of the year. This pattern closely matched movements in the global

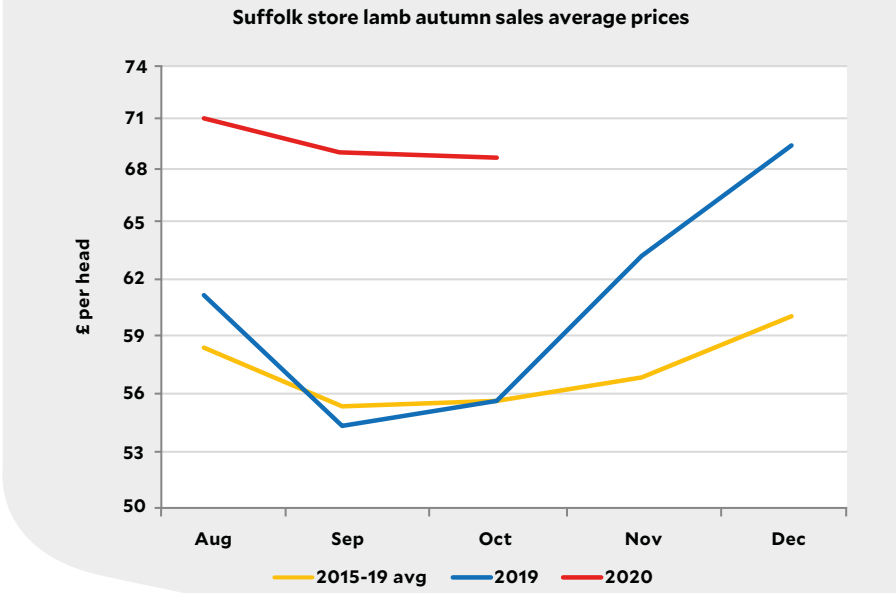
Blackface store lamb autumn sales average prices



Selected agricultural input costs

Source: Defra





oil market. In the year as a whole, electricity was 7.3% dearer than in 2018 while heating fuel costs rose by 3.8% and motor fuel by 1.7%; however, only electricity ended the year more expensive than 12 months before.

Fertiliser prices at a global level mirrored the oil market for most of 2019, though they did drop off more significantly in the autumn. While averaging higher than they had in 2018, this meant that prices ended the year down 10-15% on late 2018.

Feed prices also trended downwards in 2019 but still averaged slightly higher than in the previous year. Cereals ended the year around 20% cheaper than a year earlier, reflecting a strong global harvest, which was large enough to bring their annual average below 2018 levels, but a slower downwards trend in compound feed meant that annual averages remained 3-4% higher for cattle and sheep compounds.

2020 prospects

SINCE THE survey data was collected in the spring of 2020, the market environment has changed considerably. The beef market has gone from a very challenging place, with farmgate prices running 2-5% below the five-year average in the first quarter to running 3-5% above the five-year average between June and October. Between July and October, prices were also 11-15% higher than last year, and in the second half of October, were at their second highest recorded for the time of year.

However, there has been a notable reduction in carcase weights, with the rate of decline accelerating from around 1% in the spring to 2% in the summer, before easing back towards 1% in the autumn, limiting some of the increase per head. Meanwhile, slaughter numbers have been similar to 2019 but the

marketing pattern has differed, with early sales during the summer leaving a shortfall in the autumn. While there have been disruptions in processing from time-to-time due to outbreaks of COVID-19, the processing sector has adapted well to the necessary changes in operations.

While a fall in calf registrations in the spring of 2018 and agricultural census results have pointed to a likely tightening availability of cattle this year, numbers have been maintained due to increased heifer kill, which has offset a reduction in males. Greater use of genetics in the dairy herd may also have factored.

Having out-performed the finished cattle trade in 2019, with store cattle values falling to a lesser extent, this divergence continued in the early spring selling period of 2020, with store prices recovering to exceed year earlier levels up until mid-March. However, prices then softened during the peak selling period, running 2-4% lower than 2019. The initial market uncertainty caused by the arrival of the pandemic may have factored. Once the peak selling period had passed, prices held up better over the summer months than had been the case in 2019, with a lift in the finished market likely to have instilled some confidence amongst buyers. Moving into the autumn selling period, prices pushed beyond their spring peak, something which hadn't happened in 2018 or 2019. Over summer and autumn, store cattle generally traded 5-20% dearer than in 2019, averaging 12% higher.

On the sheep side, prime auction prices began 2020 well above the five-year average and then rose sharply in early February to record levels for the time of year. For around seven weeks, prices averaged around 235-245p/kg, placing them around 25% above the five-year average and above the new season peak of many recent years. However, the market rebalancing and disruption of late March, as export sales ground to a halt and the food service sector closed, saw prices plummet by around 30%. However, the market began to recover in April and was running around 10% above the five-year average by Easter. In general, store lamb finishers are likely to have done well.

Moving into the new season and early sellers fared well, with prices exceeding 260p/kg at the peak in mid-May. Prices then fell back much more slowly than normal and, as a result, spent most of the July to October period 15-25% above the five-year average. Eid al-Adha continued to move forward in the marketing year, with peak procurement taking place in late July this year, pushing up prices by 4% in the final week of July, before a reversal in the following week. At the low point between late September and late October, lambs traded around 195-200p/kg, compared to a five-year average low of 155-60p/kg. Exceptional prices over the summer also came despite an apparent early marketing pattern.

In Scotland, the lambing percentage indicated by the June census results reached a new record high, rising by around four percentage points to 130.7%, so this suggests that producers also benefited from increased productivity as well as farmgate prices, although carcase weights have been lighter, limiting the increase in prices per head.

At store lamb sales, the potential for market disruption at the time of sale in 2021 due to new barriers on exports to the EU does not appear to have had a significant impact on confidence, with prices up 20-30% on 2019 levels. Buyers have also bought significantly more lambs, with cumulative marketings around 9% higher than 2019 between August and October, accounting for just over half of the increase in the June lamb crop. Regional analysis of the census results highlighted significant increases in lamb numbers in Tayside (including Perthshire) and Highland regions, helping to

explain the strong increase in store volumes.

Given the potential disruption to export sales in 2021 and the higher prices paid in autumn 2020, store lamb finishers may struggle to match the margins of 2019/20 marketing year.

Input costs have, on average, stabilised at around the levels they had been at it the second half of 2019. Energy costs fell sharply in the first third of the year, as the global economy went into recession due to the pandemic, lowering demand for oil. Although energy costs did see some recovery in the summer, they remained well below year earlier levels in the autumn, with the oil price averaging a third lower than in 2019 in the July to September period. Fertiliser prices had already been on a downturn as 2020 began, and this continued in the first half, before steadying over the summer. By contrast, feed costs rose slightly after the pandemic, in part down to currency movements, before falling back again and steadying into the summer. However, the cost of feed has risen strongly through the autumn as fears over grain production in some of the major growing regions weighs on the market. Meanwhile, soyameal prices have been pushed up by the combination of weaker production prospects and firm demand from China, where pig production has been recovering.

As is always the case, profitability is linked to the timing of sales and input purchases. For cattle finishers, after a difficult start to the year the strong recovery in prices from May onwards is likely to have seen revenues lift significantly relative to 2019; particularly for those with a marketing pattern balanced towards the second half. However, as noted above, feed costs have risen strongly in the second half of 2020, so margins are unlikely to have recovered as much as indicated by the strength of the finished price; though some of this lift in the cost of raw materials may yet to have been fully reflected in compound feed prices. On a brighter note, weather conditions have been less extreme than in some recent years, so less feed is likely to have been bought-in. While store calf producers fared less badly than finishers in 2019, they have seen a similar boost to returns since May 2020, and revenues from autumn calf sales are likely to have been particularly firm. A relatively good winter and spring are likely to have reduced mortality rates too.

For sheep producers, the 2020 marketing year has been very strong through the summer and into autumn, with prices at record high levels for much of the period. In addition, a good spring helped boost lambing rates to a record high, resulting in increased numbers of finished and store lambs for sale at these strong price levels. Meanwhile, grazing conditions have generally been good, supporting growth rates and limiting supplementary feeding requirements. However, given the day-to-day volatility in prime lamb auction prices, the choice of selling day can be crucial.

Structural changes in 2019

AMONG THE suckler herds surveyed, 34% increased cow numbers by more than 5% while a further 15% reduced cow numbers by more than 5%. Overall the number of cows farmed by those in the survey increased by 2% in contrast to a national decline of 1.6% reported in the Scottish agricultural census of December 2019.

With regard to breeding sheep enterprises, the total number of ewes farmed by those in the survey decreased by 3.4%, in contrast to an unchanged national flock reported in the December 2019 Scottish agricultural census. Fourteen percent of flocks increased in size by more than 5% while 32% of surveyed businesses reduced flocks by more than 5%.

Greenhouse Gas Emissions

THE SCOTTISH Government has detailed its position on climate change through the Climate Change (Emissions Reduction Target) (Scotland) Act 2019 which sets a target of achieving "net zero emissions" for the country by 2045 and an interim target of 75% reduction by 2030. All sectors of industry and the wider community are expected to strive to reduce their emissions. However, agriculture and livestock production is recognised as a key contributor to GHG emissions in Scotland. The estimate of Scotland's greenhouse gas emissions[1] for 2018 show agriculture in total contributed 18% of all emissions and that it had reduced emission by 16% since 1990. However, agriculture is the biggest contributor to methane and nitrous oxide emission.

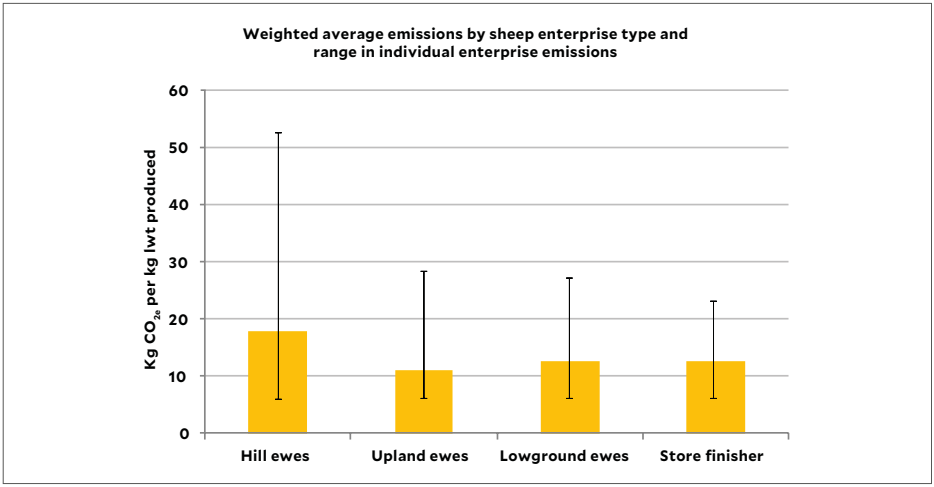
To help scope the scale of variation in emissions from Scottish livestock enterprises and identify drivers to improve emissions efficiency, the scope of the enterprise profitability survey has been extended to include estimations of GHG emissions associated with the output, or production, of these enterprises. SAC Consulting's Agricultural Resource Efficiency Calculator Agrecalc © has been used to estimate the type, source and extent of the GHG emissions produced from the cattle and sheep production systems surveyed.

The three main GHGS produced from a farm are Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O) and their sources include:

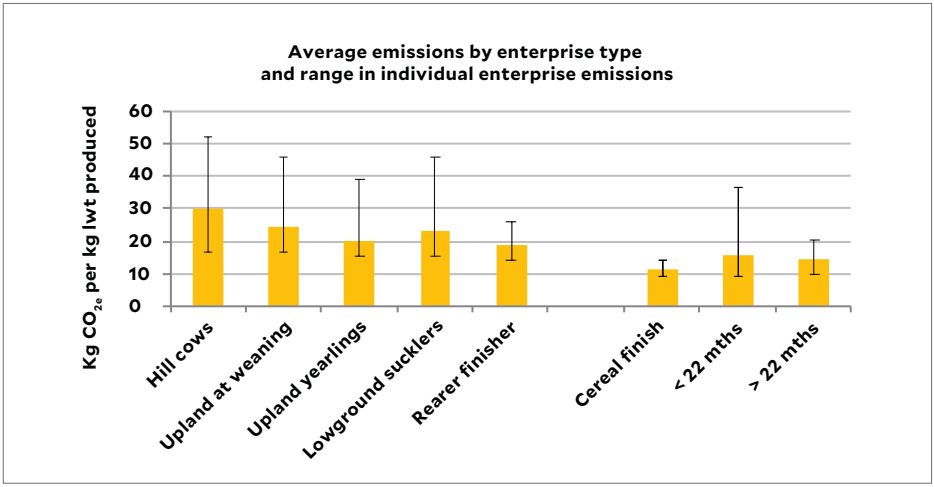
- Carbon Dioxide (CO_2), Burning fossil fuels such as coal, oil and diesel, disposal of waste and is embedded in inputs like feed, bedding, fertiliser and lime.
- Methane (CH_4) is produced as a natural by-product during ruminant digestion and from the management of organic manures.
- Nitrous Oxide (N_2O) released during the application of inorganic and organic fertilisers, from urine deposition by grazing animals and from crop residues.

The calculations do not take account of carbon sequestered in the production of grass or by the trees and hedges on these holdings.

The emissions are expressed as carbon dioxide equivalents (CO_{2e}) based on their relative global warming potential over a 100-year period with nitrous oxide being the most significant at 298 times the impact of CO_2 and methane 25 times the impact of



1 *Scottish Greenhouse Gas Emission 2018; Scottish statistical publication January 2020*



CO_2. The emissions have been reported as an intensity i.e. emissions per unit of output. The results highlight the wide diversity of emissions within and between enterprise types and the correlation between emissions and financial performance. They also illustrate the opportunities that exist to control GHG while maintaining or improving financial sustainability.

Comparison of greenhouse gas emissions

Comparing and contrasting carbon emissions allows some general observations to be made, namely that lower emissions tend to be associated with higher margins. This should not be a surprise as the drivers for improved margin are also the drivers for improved emissions namely the productivity of the system and the technical efficiency of that system.

Equally carbon emissions and enterprise profitability are also influenced by the physical environment in which the enterprise takes place. The levels of rainfall, sunshine hours and temperature can not only influence animal productivity and performance but can result in considerable seasonal change in input use, for example fertilisers and animal feeds, and the need for fuel and electricity for extended field work and/or housing periods and feed preparation and delivery.

The results this year show the impact of climate on herd and flock performance with emissions intensity generally reducing in comparison to last year although there were exceptions. For some emissions intensity increased as a consequence of lower average productivity, for example lowground ewes and forage finishing over 22 months of age.

The following tables summarise the results for the 2015 to 2019 calf and lamb crop years. They show the considerable variation within enterprise types, between enterprise types and between years that would be expected from a biological production system. However, they also show the reduction in emissions intensity that are achieved by those business who also achieve the highest margins. Across all the enterprises surveyed the average reduction in emissions intensity between the top third of economic returns and the average was nearly 15%. This reflects the capacity for economic sustainability and environmental sustainability goes hand in hand and a long way toward the targets set for agriculture by the Scottish Government.

Breeding ewe flocks ranked by gross margin per ewe

	Bottom third		Average		Top third	
	Kg output per ewe	CO_2e / kg output	Kg output per ewe	CO_2e / kg output	Kg output per ewe	CO_2e / kg output
			Hill flocks			
2015	24.4	23.3	33.3	17.4	40.5	15.2
2016	25.6	20.1	31.9	16.6	36.9	15.7
2017	27.9	22.2	33.5	17.3	44.6	14.0
2018	22.4	31.5	28.6	19.9	33.6	15.1
2019	24.0	21.9	27.9	17.4	32.4	16.3
			Upland flocks			
2015	57.3	13.7	60.4	12.7	65.1	11.5
2016	54.9	13.7	59.6	12.9	64.7	12.8
2017	45.7	14.4	57.6	12.9	62.7	12.8
2018	49.0	12.7	53.9	13.0	55.6	13.7
2019	62.2	11.8	62.1	11.1	60.3	10.6
			Non LFA lowground flocks			
2015			67.9	12.9		
2016			71.0	9.9		
2017			69.6	11.4		
2018			65.1	10.9		
2019			53.2	12.6		

Cattle finishing ranked by gross margin per animal sold

	Bottom third		Average		Top third	
	Kg added per animal sold	CO_2e / kg output	Kg added per animal sold	CO_2e / kg output	Kg added per animal sold	CO_2e / kg output
			Cereal-based finishing			
2015	290	12.6	313	11.4	333	10.8
2016	283	14.3	315	12.7	345	10.1
2017	292	20.3	334	15.8	367	10.4
2018	278	13.5	304	12.5	319	11.6
2019	316	11.2	328	11.1	373	10.2
			Forage-based finishing under 22 months			
2015	276	14.1	295	12.9	309	12.3
2016	290	15.5	304	13.6	365	11.1
2017	285	14.3	272	14.3	304	14.0
2018	233	15.4	231	15.2	190	16.2
2019	195	17.7	241	15.7	333	13.2
			Forage-based finishing over 22 months			
2015	255	14.6	289	13.0	309	11.4
2016	230	14.3	264	13.8	316	11.9
2017	252	13.9	270	13.2	363	10.1
2018	248	14.4	301	12.3	338	10.9
2019	202	17.6	243	14.6	317	10.7

Suckler herds ranked by gross margin per cow

	Bottom third		Average		Top third	
	Kg output per cow	Co_2e / kg output	Kg output per cow	Co_2e / kg output	Kg output per cow	Co_2e / kg output
Hill suckler herds						
2015	222	35.4	270	29.2	324	26.8
2016	263	29.7	278	25.6	293	23.0
2017	198	40.3	258	26.4	330	21.0
2018	199	39.6	237	29.9	266	24.2
2019	223	42.9	215	30.2	259	23.5
Upland herds selling at weaning						
2015	258	24.2	266	26.1	282	25.6
2016	258	24.6	279	23.6	312	21.5
2017	249	29.7	269	27.1	313	28.3
2018	249	35.0	277	25.1	296	22.9
2019	272	23.7	286	24.3	317	22.6
Upland herds selling yearlings						
2015	334	21.8	347	21.7	374	20.7
2016	310	21.1	343	19.4	362	19.6
2017	344	20.9	345	20.2	345	18.9
2018	330	23.4	336	20.4	355	19.5
2019	315	23.3	344	20.2	395	17.8
Lowground suckler herds						
2015	266	26.8	286	23.8	305	19.1
2016	268	30.8	288	30.1	326	33.6
2017	243	28.7	278	27.6	286	26.3
2018	258	21.0	277	23.4	291	26.0
2019	258	32.5	288	23.4	303	20.1
Rearer finisher herds						
2015	475	17.3	489	17.8	515	17.6
2016	402	19.3	473	18.1	570	16.7
2017	358	22.0	439	20.6	537	16.3
2018	477	20.3	536	18.4	619	16.5
2019	496	19.8	491	18.9	517	16.3

Cattle Enterprises

Results from LFA hill suckler herds

THE 15 herds in this category are those enterprises where open unimproved hill land makes up more than three-quarters of the farm area, resulting in low stocking densities, and where more than half the calves are sold at weaning. Herd size ranged from 21 to 121 cows with an average size of 42 head.

- Hill suckler herds achieved an average gross margin of £212 per cow. The top-third achieved an average gross margin of £365, 72% better than the average while the bottom-third reported a gross margin of £17. Herd size among the top-third was lower than the average but higher than the bottom-third.
- Fixed costs averaged £433 per cow, but with a considerable variation from £291 to £635 per cow. This resulted in an average net margin of (-) £222 per cow while the top-third achieved a net margin of (-) £51. One enterprise in the survey achieved a positive net margin.
- The top-third reared five more calves per 100 cows than the average and sold them at higher weights. The value of the calf output among the top-third was 160% higher than the average, purely a reflection of higher productivity as selling price per kg was slightly lower than the average. The bottom-third achieved the same level of output as the average with similar physical performance but slightly heavier store cattle sold.
- Top-third producers had lower cow replacement rates than the average although cow mortality rates were similar, and this led to lower herd maintenance costs. They also achieved much lower feed cost than the average and, indeed, a major contributor to the lower margins among the bottom-third was their high feed costs.
- Top-third producers had slightly better control over fixed costs spending £16 less per cow (3.5%) than the average on these items. Greater dependence on family labour contributed to lower labour costs among the top-third but higher property and machinery costs along with depreciation offset some of this.

LFA hill suckler herds – Financial performance measures

	Bottom third	Average	Top third
Number in sample	5	15	5
Average herd size (head)	32	42	39
		£ per cow	
Calf output after valuation changes	438.03	437.48	507.92
Subsidies	101.26	103.99	110.60
Gross Output	**539.29**	**541.47**	**618.52**
Less replacements	61.39	62.25	52.01
Net Output	**477.90**	**479.22**	**566.51**
Variable Costs			
Purchased concentrates	176.23	88.14	43.68
Home-grown concentrates	0	0	0
Roughages purchased	169.59	69.67	44.79
Forage	12.33	29.73	21.30
Total Feed and Forage	*358.15*	*187.54*	*109.77*
Veterinary	67.38	46.48	59.09
Bedding	0	2.60	6.41
Other costs	35.07	31.03	25.79
Total Variable Costs	**460.60**	**267.65**	**201.06**
Gross Margin	**17.30**	**211.57**	**365.45**
Fixed Costs			
Labour	147.13	65.25	18.85
Contractors	41.06	20.59	14.14
Power and machinery	70.37	94.78	107.80
Property maintenance and rent	84.21	102.08	116.88
Depreciation	76.32	91.66	108.03
Finance	15.02	16.19	17.27
Administration	76.47	42.25	33.66
Total Fixed Costs	**510.58**	**432.80**	**416.63**
Net Margin	**(-) 493.28**	**(-) 221.23**	**(-) 51.18**
Annual herd maintenance cost Pence per kg calf produced	28	29	20
Variable cost Pence per kg calf produced	2.06	1.24	0.78
Fixed cost Pence per kg calf produced	2.29	2.01	1.61
Unpaid family labour hours	**7hr 50min**	**14hr 40min**	**26hrs 25min**

Totals may not add due to rounding

LFA hill suckler herds – Technical performance measures

	Bottom third	Average	Top third
Cows per bull	25	26	28
Calves born dead or alive per 100 cows	89	90	94
Calves born dead per 100 cows	1.5	2	1
Calves died before weaning per 100 cows	1.5	2	2
Calves reared per 100 cows	86	86	91
Daily liveweight gain (kg)	0.8	0.9	1.0
Weight – kg per calf sold	259	252	285
Weight produced kg per cow	223	215	259
Cow replacement rate per 100 cows	13.5	13.2	11.4
Cow mortality %	3.3	2	2
Purchased concentrates kg per cow	595	303	165
Home-grown concentrates kg per cow	0	0	0
Stocking rate cows/ha	0.05	0.10	0.11
CO_2e kg/net lwt kg produced	42.9	30.2	23.5

Results from LFA upland suckler herds

THE UPLAND suckler herd sample has been split into two sub-groups in order to give a better reflection of the production systems in use in Scotland. One group includes farms of a more extensive nature that sell the majority of calves at weaning, while the other group has farms that sell calves as forward stores at around one year old. Although the main calving period was noted, the sample size of autumn calving herds was insufficient to allow separate analysis of the different cost structures between spring and autumn calving.

Extensive upland herds selling calves at weaning

THE 31 herds in this category farmed 3,250 cows, an average herdsize of 105 cows within a range from 22 to 355 cows, and reported an average gross margin of £360 per cow and a net margin of (-) £25 per cow. The top-third of enterprises returned a gross margin of £460 per cow, £100 (28%) better than the average and £226 per cow better than the bottom-third. Top-third producers reported a net margin of £102, £126 per head better than the average. Thirty-nine percent of businesses reported a positive net margin down from 43% last year.

- Top-third producers produced 31kg more calf weight per cow than the average and 45kg more than the bottom-third. They reared four more of calves per 100 cows to the average, they sold them 19 kg heavier although sale prices were 3p/kg lwt lower than the average.
- Higher physical production resulted in income 9% higher than the average. Lower cow mortality and a slightly lower herd replacement rate to the average meant that the top-third had slightly lower herd maintenance charges resulting in a net output £67 (10%) higher than the average.
- Variable costs were 12% lower among the top-third than the average largely through lower feed costs and sundry expenses.
- Fixed costs per cow among the top-third were £28 (7%) lower. Although labour and contracting costs were higher than the average they were offset by lower machinery and property costs. The higher physical output per cow however meant that the fixed costs per kg of output were 21p/kg lower than the average.

Upland herds selling calves at around one-year-old

TWENTY-SIX HERDS farming an average of 115 cows each were categorised as herds selling calves at an older age of about twelve months. This older age at sale resulted in the average weight of calves sold being 407kg, some 28% higher than those sold at weaning. As a consequence, not surprisingly, variable costs per cow were higher among this group than those of their counterparts selling calves at weaning, by 46%. However, when considered against the weight of animal sold rather than per cow, the variable costs among this group were 21% higher per kg of calf reared.

Higher production per cow among those selling yearlings, not surprisingly, resulted in a gross output 21% higher than those selling weaned calves and the extra variable costs associated with keeping the calves longer were recouped from the marketplace. The average gross margin among this group was consequently some 6% better than for those selling weaned calves.

Fixed costs, however, were 33% higher among this group compared to those selling younger cattle. All fixed costs were higher per cow with the exception of contractor charges which were the same. As a result, the £21 per cow improvement in gross margin was eroded to a point where the net margin among those selling yearling stores was £103 per cow worse than those selling weaned calves. Nineteen percent of this group achieved a positive net margin down from 22% last year.

- Top-third businesses selling yearlings returned a gross margin of £505 per cow, £123 (32%) better than the average and almost double that of the bottom-third producers. They achieved this better financial return through improved herd productivity rearing 7 more calves per 100 cows than the average and 12 more than the bottom-third. They sold these calves at a slightly higher weight than the average leaving the production per cow 15% higher than the average.
- Top-third producers had similar cow mortality rates but lower replacement rates. They also delivered higher output while keeping variable costs per cow 10% below the average.
- Top-third producers had a slightly lower fixed cost burden than the average, 1% lower, where lower labour and contractor charges were offset by higher property, machinery and depreciation costs. Top-third producers did though have a much greater dependence on family labour.
- Upland herds selling yearling cattle achieved a net margin of (-) £128 per cow which improved to £2 per cow among the top-third.

Extensive upland suckler herds selling weaned calves – Financial performance measures

	Bottom third	Average	Top third
Number in sample	10	31	10
Average herd size (head)	93	105	130
		£ per cow	
Calf output after valuation changes	575.55	617.48	670.77
Subsidies	89.04	96.38	107.30
Gross Output	**664.59**	**713.86**	**778.07**
Less net replacement cost	94.11	82.16	79.01
Net Output	**570.48**	**631.70**	**699.06**
Variable Costs			
Purchased concentrates	70.77	43.53	33.87
Home-grown concentrates	22.31	13.34	9.22
Roughages purchased	38.94	35.49	32.69
Forage	66.20	78.28	69.72
Total Feed and Forage	*198.22*	*170.64*	*145.50*
Veterinary	53.71	43.16	45.43
Bedding	36.71	28.19	31.35
Other costs	48.25	29.49	16.44
Total Variable Costs	**336.89**	**271.48**	**238.72**
Gross Margin	**233.59**	**360.22**	**460.34**
Fixed costs			
Labour	47.06	48.78	52.25
Contractors	70.94	49.94	52.01
Power and machinery	93.51	88.06	79.79
Property maintenance and rent	40.72	72.40	60.42
Depreciation	87.87	80.28	76.74
Finance	23.72	20.81	20.42
Administration	26.99	24.67	16.05
Total Fixed Costs	**390.81**	**384.94**	**357.68**
Net Margin	**(-) 157.22**	**(-) 24.72**	**102.66**
Annual herd maintenance cost Pence per kg calf sold	35	29	25
Variable cost Pence per kg calf produced	124	95	75
Fixed cost Pence per kg calf produced	144	134	113
Unpaid family labour hours	**9hr**	**9hrs 25min**	**9hrs**

Totals may not add due to rounding

Upland suckler herds selling yearling calves – Financial performance measures

	Bottom third	Average	Top third
Number in sample	9	26	9
Average herd size (head)	119	115	97
		£ per cow	
Calf output after valuation changes	715.47	774.53	863.85
Subsidies	83.29	86.71	94.16
Gross Output	**798.76**	**861.24**	**958.01**
Less net replacement cost	80.16	83.66	97.87
Net Output	**718.60**	**777.58**	**860.14**
Variable Costs			
Purchased concentrates	44.57	53.77	73.83
Home-grown concentrates	79.14	76.70	58.94
Roughages purchased	90.03	57.34	28.48
Forage	56.04	71.30	78.53
Total Feed and Forage	*269.78*	*259.11*	*239.78*
Veterinary	52.90	48.98	41.16
Bedding	75.95	49.61	35.90
Other costs	44.02	38.35	38.47
Total Variable Costs	**442.65**	**396.05**	**355.31**
Gross Margin	**275.95**	**381.53**	**504.83**
Fixed Costs			
Labour	192.59	116.45	32.28
Contractors	26.18	36.66	53.63
Power and machinery	114.00	109.55	109.56
Property maintenance and rent	70.88	91.41	122.71
Depreciation	77.67	97.26	119.37
Finance	20.85	32.97	33.30
Administration	18.56	25.29	31.87
Total fixed costs	**520.73**	**509.59**	**502.72**
Net Margin	**(-) 244.78**	**(-) 128.06**	**2.11**
Annual herd maintenance cost Pence per kg calf sold	25	24	25
Variable cost Pence per kg calf produced	140	115	90
Fixed cost Pence per kg calf produced	165	148	127
Unpaid family labour hours	**5hrs 25min**	**9hrs 10min**	**15hr 45min**

Totals may not add due to rounding

Extensive upland suckler herds selling weaned calves – Technical performance measures

	Bottom third	Average	Top third
Cows per bull	22	24	22
Calves born dead or alive per 100 cows	93	95	98
Calves born dead per 100 cows	4	3	3
Calves died per 100 cows	2	2	1
Calves reared per 100 cows	87	90	94
Daily liveweight gain (kg)	1.08	1.12	1.21
Weight – kg per calf sold	311	318	337
Weight produced kg per cow	272	286	317
Cow replacement rate per 100 cows	15.4	14.8	14.4
Cow mortality %	3	2.25	1.9
Purchased concentrates kg per cow	300	212	188
Home-grown concentrates kg per cow	165	95	73
Stocking rate cows/ha	0.76	0.90	0.94
CO_2e kg/net lwt kg produced	23.7	24.3	22.6

Upland suckler herds selling yearling calves – Technical performance measures

	Bottom third	Average	Top third
Cows per bull	20	23	27
Calves born dead or alive per 100 cows	92	93	98
Calves born dead per 100 cows	7	5	4
Calves died per 100 cows	5	3	2
Calves reared per 100 cows	80	85	92
Daily liveweight gain (kg)	0.9	1.0	1.1
Weight – kg per calf sold	395	407	427
Weight produced kg per cow	315	344	395
Cow replacement rate per 100 cows	12.8	15.0	14.3
Cow mortality %	2.0	1.8	1.8
Purchased concentrates kg per cow	196	260	373
Home-grown concentrates kg per cow	500	498	360
Stocking rate cows/ha	1.1	0.9	0.8
CO_2e kg/net lwt kg produced	23.3	20.2	17.8

Results from non-LFA lowground suckler herds

SEVENTEEN NON-LFA suckler enterprises farming 1,342 cows were surveyed. They achieved an average gross margin of £342 per cow and an average net margin of (-) £48 in a range from (-) £416 to +£216. Six businesses, 41%, reported a positive net margin per cow a decline from the 47% of those surveyed who achieved a positive net margin last year.

- Top-third producers achieved an average gross margin of £432 per cow, £90 (26%) better than the overall average. Fixed costs per cow among the top-third were £50 per cow lower than the average and thus the improvement in financial performance widened to £141 at net margin level.
- Physical performance of the herds in the top-third were very similar to the average in respect of calves born dead or alive but top-third performers achieved lower mortality rates resulting in one more calf reared per 100 cows which were sold at heavier weights. This resulted in 15kg more physical output per cow than the average and were sold at a higher price per kg. While top-third performers also had a higher cow replacement rate higher values resulted in lower herd maintenance charges among the top-third.
- In contrast those businesses in the bottom-third were constrained by lower herd performance, 5 fewer calves reared per 100 cows than the average, lower sale weights, highest herd mortality and cow replacement rate and the highest feed and forage costs. This group also carried higher fixed cost per cow than the average largely due to higher labour and contractor costs although they also carried higher finance charges.

Non LFA lowground suckler herds – Financial performance measures

	Bottom third	Average	Top third
Number in sample	6	17	6
Average herd size (head)	47	79	96
		£ per cow	
Calf output after valuation changes	600.37	645.97	698.57
Subsidies	82.87	89.37	89.91
Gross Output	**683.24**	**735.34**	**788.48**
Less net replacement cost	87.90	73.55	64.41
Net Output	**595.34**	**661.79**	**724.07**
Variable Costs			
Purchased concentrates	41.54	29.53	16.47
Home-grown concentrates	26.06	24.41	30.42
Roughages purchased	76.96	67.16	53.77
Forage	77.20	65.32	70.28
Total Feed and Forage	*221.76*	*186.42*	*170.94*
Veterinary	51.38	48.80	48.97
Bedding	74.65	56.40	49.81
Other costs	45.42	28.48	22.43
Total Variable Costs	**393.21**	**320.10**	**292.15**
Gross Margin	**202.13**	**341.69**	**431.92**
Fixed Costs			
Labour	120.97	67.57	61.89
Contractors	56.79	36.79	28.37
Power and machinery	69.97	83.71	71.20
Property maintenance and rent	58.59	62.38	66.76
Depreciation	75.32	78.60	67.53
Finance	34.48	28.02	16.89
Administration	28.31	32.33	26.10
Total Fixed Costs	**444.43**	**389.40**	**338.74**
Net Margin	**(-) 242.30**	**(-) 47.71**	**93.18**
Annual herd maintenance cost Pence per kg calf sold	34	26	21
Variable cost Pence per kg calf produced	152	111	96
Fixed cost Pence per kg calf produced	172	135	111
Unpaid family labour hours	**10hrs 10min**	**10hrs 10min**	**4hrs 5min**

Totals may not add due to rounding

Non LFA lowground suckler herds – Technical performance measures

	Bottom third	Average	Top third
Cows per bull	22	24	26
Calves born dead or alive per 100 cows	88	94	94
Calves born dead per 100 cows	3	3	3
Calves died per 100 cows	1	2	1
Calves reared per 100 cows	84	89	90
Daily liveweight gain (kg)	1.1	1.15	1.2
Weight – kg per calf sold	306	325	337
Weight produced kg per cow	258	288	303
Cow replacement rate per 100 cows	13.8	11.8	12.5
Cow mortality %	2.1	1.8	1.8
Purchased concentrates kg per cow	295	189	110
Home-grown concentrates kg per cow	184	144	198
Stocking rate GLU/ha	1.43	1.43	1.41
CO_2e kg/net lwt kg produced	32.5	23.4	20.1

Results from rearer finisher enterprises

IN THE case of these 22 enterprises farming 2,114 cows, the reported margins relate to the costs and income for a twelve-month period to the end of April 2020.

The businesses surveyed produced an average gross margin per cow of £462, within a range from £242 to £692 per cow, and an average net margin of (-) £69 per cow. Ten (45%) enterprises reported a positive net margin down from 50% that achieved this objective last year.

- The top-third producers ranked by gross margin per cow achieved a net output £109 higher than the average largely through the production of 5% more saleable output per cow through selling heavier cattle at higher sale prices per kg lwt than the average. Net output was also impacted by lower mortality rates which contributed to lower herd maintenance charges among the top-third.
- Variable costs were lower among the top-third with all cost categories contributing to the £47 reduction.
- Fixed costs among the top-third were £7 (1%) per cow lower than the average. They did however face slightly higher labour and contractor charges.
- Those businesses in the bottom-third had the highest variable cost base, but their fixed cost base was the same as the average. Mortality rates were similar to the average although cow replacement rates were higher than the average leading to higher herd maintenance charges £2 per cow lower than the average. This group had the highest calf mortality rates and reared 1 calf less than the average while having the highest feed and forage costs.

Rearer finisher herds – Financial performance measures

	Bottom third	Average	Top third
Number in sample	7	22	7
Average herd size (head)	89	96	96
		£ per cow	
Calf output after valuation changes	935.51	972.45	1060.73
Subsidies	86.01	88.81	92.15
Gross Output	**1021.52**	**1061.26**	**1152.88**
Less net replacement cost	73.17	75.06	57.65
Net Output	**948.35**	**986.20**	**1095.23**
Variable Costs			
Purchased concentrates	109.72	126.45	105.17
Home-grown concentrates	152.00	77.24	57.85
Roughages purchased	68.00	68.00	79.26
Forage	118.99	90.77	74.16
Total Feed and Forage	*448.71*	*362.46*	*316.44*
Veterinary	55.55	50.82	54.73
Bedding	87.26	70.05	64.54
Other costs	50.00	41.13	40.94
Total Variable Costs	**641.52**	**524.46**	**476.65**
Gross Margin	**306.83**	**461.74**	**618.58**
Fixed Costs			
Labour	86.46	83.71	111.39
Contractors	24.70	40.60	42.50
Power and machinery	120.15	124.98	125.16
Property maintenance and rent	117.32	110.35	75.80
Depreciation	102.58	89.52	92.28
Finance	25.06	34.18	29.12
Administration	54.72	47.09	47.29
Total Fixed Costs	**530.99**	**530.43**	**523.54**
Net Margin	**(-) 224.16**	**(-) 68.69**	**95.04**
Annual herd maintenance cost Pence per kg calf sold	15	15	11
Variable cost Pence per kg calf sold	129	107	92
Fixed cost Pence per kg calf sold	107	108	101
Unpaid family labour hours	**6hr 5min**	**11hr 40min**	**9hr**

Totals may not add due to rounding

Rearer finisher herds – Technical performance measures

	Bottom third	Average	Top third
Cows per bull	20	26	29
Calves born dead or alive per 100 cows	94	94	96
Calves born dead per 100 cows	3	4	3
Calves died per 100 cows	4	2	2
Calves reared per 100 cows	87	88	91
Daily liveweight gain (kg)	1.1	1	1
Weight – kg per calf sold finished	651	620	628
Weight reared kg per cow per year	496	491	517
Cow replacement rate per 100 cows	13.3	12.8	13.0
Cow mortality %	2.2	2.3	2.2
Purchased concentrates kg per cow	537	737	717
Home-grown concentrates kg per cow	917	493	387
Stocking rate cows/ha	0.7	0.9	1.1
Selling price p/kg dwt finished	322	334	338
CO_2e kg/net lwt kg produced	19.8	18.9	16.3

Cattle finishing Results from cereal-based cattle finishing enterprises

FIFTEEN CEREAL-BASED cattle finishing enterprises were surveyed. They sold 836 cattle and achieved an average gross margin of £73 per animal. The average net margin among those surveyed was (-) £40 per head and ranged from (-) £331 to £387 per head. Eight businesses (53%) reported a positive net margin down from 75% last year.

- Enterprises in the top-third of those surveyed had a net output £183 per animal better than the average and £265 better than the bottom-third. They achieved the best growth rates but started with the lightest weight cattle, fed them for the shortest period and sold them 6kg heavier than the average. They were though only finishing young bulls but achieved the best sale prices of those surveyed. They used the least amount of home-grown and purchased concentrates. Output was also helped by having the lowest mortality during the finishing period.
- Those in the top-third achieved higher output while keeping variable costs £95 per head lower than the average largely through lower feed and forage costs. They also carried the lowest fixed costs, leading to a net margin £299 per head better than the average.
- Those in the bottom-third had the longest finishing period and greater dependence on heifer finishing and carried the highest concentrate use and highest mortality rates. They sold the heaviest weight young bulls but received the lowest prices; they also purchased the heaviest cattle and therefore margin between buying and selling prices was the lowest. The longer finishing period contributed to highest use of concentrate feeds and highest feed cost contributing to higher variable costs that squeezed gross margins to £155 lower than the average. These herds also carried a slightly higher fixed cost base.

Cereal-based cattle finishing enterprises – Financial performance measures

	Bottom third	Average	Top third
Number in sample	5	15	5
Average herd size (head)	82	56	45
		£ per head	
Stock Sales	**1258.34**	**1250.48**	**1292.95**
Less stock purchases	846.56	756.06	615.39
Net Output	**411.78**	**494.42**	**677.56**
Variable Costs			
Purchased concentrates	171.11	174.57	181.05
Home-grown concentrates	191.33	119.26	30.57
Other feeds	28.50	26.44	29.26
Forage	1.96	4.64	8.35
Total Feed and Forage	*392.90*	*324.91*	*249.23*
Veterinary	16.06	16.79	13.86
Bedding	46.48	44.43	38.38
Other costs	38.51	35.12	24.74
Total Variable Costs	**493.95**	**421.25**	**326.21**
Gross Margin	**(-) 82.17**	**73.17**	**351.35**
Fixed Costs			
Labour	20.01	21.39	17.51
Contractors	12.00	10.28	8.77
Power and machinery	35.79	28.90	20.85
Property maintenance and rent	22.01	16.80	6.79
Depreciation	14.90	15.81	15.78
Finance	2.87	3.03	5.37
Administration	7.22	7.13	7.20
Total Fixed Costs	**114.80**	**103.34**	**82.27**
Net Margin	**(-) 196.97**	**(-) 30.17**	**269.08**
Stores purchased Pence per kg lwt sold	127	117	94
Variable cost Pence per kg lwt sold	74	65	50
Fixed cost Pence per kg lwt sold	17	16	13
Unpaid family labour hours	**1hr 25min**	**1hr 40min**	**2hr 30min**

Totals may not add due to rounding

Cereal-based cattle finishing enterprises – Technical performance measures

	Bottom third	Average	Top third
Feeding period (days)	238	233	216
Start weight (kg lwt)	352	318	279
Finish weight (kg lwt)	668	646	652
Daily liveweight gain (kg)	1.3	1.4	1.7
Mortality (%)	2.8	2.0	0.5
Purchased concentrates kg/head	759	893	1189
Home-grown concentrates kg/head	1182	765	218
Purchase price (p per kg lwt)	**233**	**227**	**218**
Sale price sold dwt (p /kg dwt)	**324**	**329**	**340**
Sales			
Steers % of sales	0	0	0
Liveweight at sale	0	0	0
Steer selling price p/kg dwt	0	0	0
Heifers % of sales	20	14	0
Liveweight at sale	557	553	0
Heifer selling price p/kg dwt	334	332	0
Young bulls % of sales	80	86	100
Liveweight at sale	696	672	652
Young bull selling price p/kg dwt	322	328	340
CO_2e kg/net lwt kg produced	11.2	11.0	10.2

Results from forage-based cattle finishing enterprises

THE FORAGE-BASED finishers surveyed have been split into two groups based on the age at which the majority of the cattle have been sold. The average age at which Scottish prime cattle are slaughtered remains around 22 months of age. This has been taken as the age for splitting the business surveyed. Thus, the two groups are those selling finished cattle under 22 months of age and those selling finished cattle at over 22 months of age.

The first group, selling younger cattle, comprises 20 businesses finishing an average of 122 cattle and the second group, selling older cattle, comprises 18 businesses but with an average size of 67 cattle.

- Those selling younger cattle reported a gross margin of £30 per animal sold falling to a net margin of (-) £163 per animal sold; three (15%) of the businesses in this group achieved a positive net margin slightly down on the 17% achieving a positive net margin last year. Their counterparts selling older cattle reported a gross margin of £69 per head and a net margin of (-)£141, five business in this group achieved a positive net margin, one fewer than last year.
- Those selling younger cattle finished them around 13 weeks quicker than those selling older cattle while those older cattle were 3kg lighter at sale.
- Those in the top-third of performers showed an improvement in net margin of £141 per animal among those selling younger cattle. Nevertheless, top-third producers of younger cattle still reported a negative net margin. In contrast those in the top-third group of enterprises selling older cattle achieved a net margin £140 better than the average, but like those selling younger cattle still reported a negative net margin.
- Among those selling younger cattle those in the top-third sold the heaviest cattle and had greatest dependence on steers. They started with the lightest weight store cattle and had the longest finishing period but did achieve the best growth rates with the lowest use of concentrate feeds but greatest use of forage resource. Despite having the longest finishing period, variable costs among the top-third were little different from the average but fixed costs were higher.
- Among those selling older cattle those in the top-third were characterised by low mortality over the finishing period. Although they had the longest finishing period, they did not sell the heaviest cattle although they did achieve the highest selling prices per kg lwt. They did carry the lowest variable costs, although they had greatest dependence and cost on purchased feeds they did have the lowest forage costs. Fixed costs were highest among the top-third possibly associated with the longer period on farm, but they also had highest dependence on family labour.

Forage-based cattle finishing under 22 months – Financial performance measures

	Bottom third	Average	Top third
Number in sample	7	20	7
Average herd size (head)	211	122	77
		£ per head	
Stock Sales	**1128.66**	**1158.55**	**1216.68**
Less stock purchases	867.21	826.30	727.83
Net Output	**261.45**	**332.25**	**488.85**
Variable Costs			
Purchased concentrates	151.24	123.72	106.14
Home-grown concentrates	32.41	50.77	44.50
Other feeds	28.75	26.27	16.78
Forage	15.22	25.93	46.89
Total Feed and Forage	*227.62*	*226.69*	*214.31*
Veterinary	14.02	12.45	12.72
Bedding	23.95	33.84	50.64
Other costs	27.30	29.46	30.92
Total Variable Costs	**292.89**	**302.44**	**308.59**
Gross Margin	**(-) 31.44**	**29.81**	**180.26**
Fixed costs			
Labour	38.96	37.51	39.67
Contractors	19.49	16.49	14.43
Power and machinery	31.20	37.50	42.11
Property maintenance and rent	17.43	23.93	38.63
Depreciation	45.87	45.05	44.05
Finance	15.57	18.18	8.85
Administration	11.97	14.47	15.27
Total Fixed Costs	**180.49**	**193.13**	**203.01**
Net Margin	**(-) 211.98**	**(-) 163.32**	**(-) 22.75**
Stores purchased Pence per kg lwt sold	142	131	109
Variable cost Pence per kg lwt sold	48	48	46
Fixed cost Pence per kg lwt sold	30	31	30
Unpaid family labour hours	**1hr 40min**	**3hr**	**5hr 10min**

Totals may not add due to rounding

Forage-based cattle finishing under 22 months – Technical performance measures

	Bottom third	Average	Top third
Feeding period (days)	253	283	334
Start weight (kg lwt)	416	389	333
Finish weight (kg lwt)	611	630	666
Daily liveweight gain (kg)	0.8	0.9	1.0
Mortality (%)	0.7	0.5	0.5
Purchased concentrates kg/head	879	728	647
Home-grown concentrates kg/head	210	336	295
Purchase price (p per kg lwt)	**207**	**211**	**218**
Sale price sold dwt (p /kg dwt)	**319**	**325**	**339**
Sales			
Steers % of sales	47	41	53
Liveweight at sale	572	603	677
Steer selling price p/kg dwt	324	330	341
Heifers % of sales	51	57	45
Liveweight at sale	642	645	652
Heifer selling price p/kg dwt	314	322	338
Young bulls % of sales	2	2	2
Liveweight at sale	693	685	656
Young bull selling price p/kg dwt	318	320	328
CO_2e kg/net lwt kg produced	17.7	15.7	13.2

Forage-based cattle finishing over 22 months – Financial performance measures

	Bottom third	Average	Top third
Number in sample	6	18	6
Average herd size (head)	103	67	45
		£ per head	
Stock Sales	**1216.97**	**1201.76**	**1239.76**
Less stock purchases	910.90	819.46	703.44
Net Output	**306.07**	**382.30**	**536.32**
Variable Costs			
Purchased concentrates	65.76	88.90	130.57
Home-grown concentrates	88.92	56.36	14.94
Other feeds	26.86	24.16	19.89
Forage	43.80	42.44	29.97
Total Feed and Forage	*225.34*	*211.86*	*195.37*
Veterinary	15.75	16.44	21.51
Bedding	35.62	40.95	36.64
Other costs	50.38	43.59	36.18
Total Variable Costs	**327.09**	**312.84**	**289.70**
Gross Margin	**(-) 21.02**	**69.46**	**246.62**
Fixed Costs			
Labour	47.00	38.71	15.93
Contractors	12.62	16.74	17.49
Power and machinery	33.05	45.72	64.74
Property maintenance and rent	25.27	40.27	39.32
Depreciation	32.52	37.36	39.54
Finance	10.01	15.68	33.77
Administration	9.42	16.28	37.67
Total Fixed Costs	**169.89**	**210.76**	**248.46**
Net Margin	**(-) 190.91**	**(-) 141.30**	**(-) 1.84**
Stores purchased Pence per kg lwt sold	138	131	112
Variable cost Pence per kg lwt sold	50	50	46
Fixed cost Pence per kg lwt sold	26	34	40
Unpaid family labour hours	**2hr 40min**	**5hr 20min**	**12hr 15min**

Totals may not add due to rounding

Forage-based cattle finishing over 22 months – Technical performance measures

	Bottom third	Average	Top third
Feeding period (days)	308	375	429
Start weight (kg lwt)	458	384	309
Finish weight (kg lwt)	660	627	626
Daily liveweight gain (kg)	0.66	0.65	0.74
Mortality (%)	1.4	2.2	1.4
Purchased concentrates kg/head	238	435	808
Home-grown concentrates kg/head	623	399	100
Purchase price (p per kg lwt)	**196**	**207**	**219**
Sale price sold dwt (p /kg dwt)	**318**	**330**	**341**
Sales			
Steers % of sales	53	37	39
Liveweight at sale	666	652	634
Steer selling price p/kg dwt	341	341	343
Heifers % of sales	47	63	61
Liveweight at sale	653	613	621
Heifer selling price p/kg dwt	291	323	340
Young bulls % of sales	0	0	0
Liveweight at sale	0	0	0
Young bull selling price p/kg dwt	0	0	0
CO_2e kg/net lwt kg produced	17.7	14.6	10.7

Sheep Enterprises

Results from LFA hill ewe flocks

THIS GROUP of enterprises comprises purebred Blackface and Cheviot flocks farmed on some of the most disadvantaged land in Scotland. The sample covered 39 such flocks farming over 24,750 ewes. These flocks are characterised by low lambing percentages, averaging 89% lambs reared within a range of 59% to 129%. The average gross margin achieved across this group was £20.82 per ewe, while the average net margin was (-) £22 per ewe within a range of (-) £14 to £71 per ewe. Six producers (15%) within this group made a small positive net margin.

- Producers in the top-third benefit from better technical performance. The improvement in gross margin per ewe of £18 over the average is largely due to:
  - A higher number of lambs reared – 16 more lambs per ewe than average
  - Benefited from lower mortality of both lambs and ewes
  - Lambs were sold at a slightly heavier weight resulting in 16% more lamb produced per ewe
  - With little difference in retentions for flock maintenance, the higher lambing percentage left those in the top-third with a greater number of lambs for sale, a higher proportion of which (10% compared to 6%) were sold as prime lamb and at a higher price per head than the average, store and breeding lamb values were higher than the average. Overall top third achieved £16 per ewe more income which combined with lower flock maintenance charges to deliver a £17 improvement in net output over the average.
- Top-third producers had slightly lower variable cost, saving on purchased feed and forage compared with the average although they did carry higher miscellaneous direct expenses. They did, however, have higher fixed costs per ewe particularly due to higher paid labour, machinery and property costs.
- Bottom-third producers achieved – a gross margin £18 lower than the average a consequence of much higher purchased feed costs but also because of the much lower output per ewe because of lower productivity; 76 lambs reared per 100 ewes compared to the average of 89. On average, lambs were sold at similar weights to the average but lower volumes for sale reduced production per ewe to 24 kg per ewe 4kg lower than the average. Although fixed costs were lower than the average, the net margin among the bottom-third of (-) £35 per ewe was £13 per ewe worse than the average. However, it must be recognised that 70% of flocks in the bottom-third were in the North West Highlands and Islands region where climate and topography have a severe impact on ewe performance and the ability of producers to sell prime lambs.

LFA hill ewe flocks – Financial performance measures

	Bottom third	Average	Top third
Number in sample	13	39	13
Flock size	621	634	796
		£ per ewe	
Lamb sales	**35.62**	**50.02**	**66.32**
Wool	1.28	1.23	1.27
Gross Output	**36.90**	**51.25**	**67.59**
Less replacement costs	10.42	10.50	10.36
Net Output	**26.48**	**40.75**	**57.23**
Variable Costs			
Purchased concentrates	7.42	5.00	4.17
Home-grown concentrates	0	0.06	0.05
Other feeds	2.47	2.17	1.85
Forage	0.95	0.87	1.34
Total Feed and Forage	*10.84*	*8.10*	*7.41*
Veterinary	6.91	6.01	5.55
Bedding	0.12	0.09	0.06
Other costs	5.78	5.73	6.15
Total Variable Costs	**23.65**	**19.93**	**19.17**
Gross Margin	**2.83**	**20.82**	**38.06**
Fixed Costs			
Labour	8.09	15.12	20.10
Contractors	2.01	1.97	2.01
Power and machinery	7.70	8.50	8.81
Property maintenance and rent	7.33	8.12	8.67
Depreciation	8.21	6.86	5.86
Finance	0.84	0.55	0.42
Administration	3.89	2.12	0.80
Total Fixed Costs	**38.07**	**43.24**	**46.67**
Net Margin	**(-) 35.24**	**(-) 22.42**	**(-) 8.61**
Flock replacements – Pence per kg lamb produced	43	38	32
Variable cost – Pence per kg lamb produced	98	71	59
Fixed cost – Pence per kg lamb produced	159	155	144
Unpaid family labour hours	**1hr 20min**	**1hr 10min**	**1hr 45min**

Totals may not add due to rounding

LFA hill ewe flocks – Technical performance

	Bottom third	Average	Top third
Ewes per ram	26	30	31
Ewe mortality %	7.7	6.2	4.6
Ewe replacement rate %	28	27.5	27.4
Lambs born dead or alive per 100 ewes	90	107	121
Lamb mortality (inc. born dead) per 100 ewes	14	18	16
Lambs reared per 100 ewes	76	89	105
Average weight of lambs kg	31.7	31.4	30.9
Weight of lamb produced per ewe kg	24.0	27.9	32.4
Purchased concentrates kg/ewe	27	18	15
Home-grown concentrates kg/ewe	0	0.5	0.3
Lambs sold finished per 100 ewes	0	6	10
Value per lamb £/head	0	58.22	64.08
Lambs sold/transferred store per 100 ewes	41	46	52
Value per lamb £/head	43.65	46.60	48.12
Lambs sold/transferred for breeding per 100 ewes	35	37	43
Value per lamb £/head	51.09	67.75	81.19
CO_2e kg/net lwt kg produced	21.9	17.4	16.3

Totals may not add due to rounding

Results from LFA upland ewe flocks

LFA UPLAND breeding flocks are identified as LFA farms running crossbred flocks. Thirty-three such flocks were recorded in this survey which collectively farmed some 15,900 ewes. These enterprises achieved an average gross margin of £55 per ewe and an average net margin of £7 per ewe. Twenty-five of the businesses surveyed (75%) returned a positive net margin within a range (-) £30 to £49 per ewe.

- Producers in the top-third produced a gross margin of £73 per ewe, 32% better than the average and almost double the bottom-third.
- The improvement in gross margin between the average and the top-third was due to both higher net output (+£5 per ewe) and reduced variable costs (£12 per ewe less). Higher output was achieved despite a lower lamb weaning rate than the average or bottom third. Higher output was due to a larger proportion of lambs sold finished, 78% compared to the 58% average across the whole sample. The average sale price was also slightly lower but offset by the higher volume sold finished.

Lower variable costs were primarily the result of lower use of purchase feeds and lower forage costs, but the group also paid lower veterinary charges

- Flock performance among the bottom-third was also little different from the average, selling 65% of their lambs finished at similar prices to the average. The main contributors to lower gross margin were a higher flock maintenance through a higher ewe mortality rate and a higher ewe replacement rate. Additionally, more expenditure was incurred on feed costs.
- Fixed costs among the top-third were the highest among the surveyed enterprises particularly expenditure on machinery and property maintenance
- Those in the bottom-third carried higher fixed costs than the average mainly as a consequence of higher labour charges although they did have less reliance on unpaid family labour. The group also carried the highest finance charges.

LFA upland ewe flocks – Financial performance measures

	Bottom third	Average	Top third
Number in sample	11	33	11
Flock size	483	481	319
		£ per ewe	
Lamb sales	**106.22**	**108.00**	**111.40**
Wool	2.02	2.06	1.61
Gross Output	**108.24**	**110.06**	**113.01**
Less replacement costs	17.37	14.26	11.84
Net Output	**90.87**	**95.80**	**101.17**
Variable Costs			
Purchased concentrates	15.26	10.22	4.00
Home-grown concentrates	0.49	0.67	0.62
Other feeds	4.27	2.49	1.52
Forage	7.28	7.92	5.81
Total Feed and Forage	*27.30*	*21.30*	*11.95*
Veterinary	10.56	9.61	7.96
Bedding	2.78	1.42	0.77
Other costs	10.25	7.99	7.60
Total Variable Costs	**50.89**	**40.32**	**28.28**
Gross Margin	**39.98**	**55.48**	**72.89**
Fixed Costs			
Labour	11.39	6.60	5.58
Contractors	3.92	5.65	6.40
Power and machinery	9.52	9.62	10.06
Property maintenance and rent	8.36	9.55	14.40
Depreciation	8.75	9.84	11.79
Finance	3.78	3.07	1.54
Administration	4.85	3.94	3.33
Total Fixed Costs	**50.57**	**48.27**	**53.10**
Net Margin	**(-) 10.59**	**7.21**	**19.79**
Flock replacements – Pence per kg lamb produced	28	23	20
Variable cost – Pence per kg lamb produced	82	65	47
Fixed cost – Pence per kg lamb produced	81	78	88
Unpaid family labour hours	**55min**	**1hr 20min**	**2hr 18min**

Totals may not add due to rounding

LFA upland ewe flocks – Technical performance

	Bottom third	Average	Top third
Ewes per ram	30	30	29
Ewe mortality %	9.5	6.5	5.0
Ewe replacement rate %	32.5	29.7	29.0
Lambs born dead or alive per 100 ewes	168	167	163
Lamb mortality (inc. born dead) per 100 ewes	21	18	18
Lambs reared per 100 ewes	147	149	145
Average weight of lambs kg	42.43	41.63	41.65
Weight of lamb produced per ewe kg	62.2	62.1	60.3
Purchased concentrates kg/ewe	55	36	12
Home-grown concentrates kg/ewe	3	5	5
Lambs sold finished per 100 ewes	95	87	113
Value per lamb £/head	76.62	76.71	75.72
Lambs sold/transferred store per 100 ewes	37	23	5
Value per lamb £/head	56.33	58.68	67.33
Lambs sold/transferred for breeding per 100 ewes	15	39	27
Value per lamb £/head	88.73	71.37	83.97
CO_2e kg/net lwt kg produced	11.8	11.1	10.6

Results from lowground breeding flocks

THE THIRTEEN businesses in the survey farmed some 9,000 ewes. Although eight of the flocks in this group achieved a positive net margin, the average was (-) £4 per ewe within a range from (-) £52 to £40 per ewe.

The number of enterprises surveyed did not allow comparisons to be made between high and low financial margins. Nevertheless, by ranking enterprises on the basis of gross margin per lamb some trends do emerge including:

- Better financial returns tend to be associated with high physical performance, lower barren ewe rates and lower lamb mortality leading to those with higher gross margins tending to have the highest lamb weaning rates. They also sold the highest proportion of their lambs finished and benefited from the best prices per lamb sold.
- Better financial returns tend to be associated with lower feed and forage costs offset by slightly higher veterinary costs. Although concentrate feed use tended to be higher than the average among the better gross margins feed cost was highest among those with the lowest margins.
- Fixed costs per ewe were similar across all those surveyed all those with higher gross margins tend to have higher property costs but lower machinery costs.

Lowground ewe flocks – Financial performance measures

	Average
Number in sample	13
Flock size	698
	£ per ewe
Lamb sales	**111.76**
Wool	1.87
Gross Output	**113.63**
Less replacement costs	16.13
Net Output	**97.50**
Variable Costs	
Purchased concentrates	14.14
Home-grown concentrates	2.49
Other feeds	3.65
Forage	7.64
Total Feed and Forage	*27.92*
Veterinary	9.22
Bedding	1.68
Other costs	7.79
Total Variable Costs	**46.61**
Gross Margin	**50.89**
Fixed Costs	
Labour	8.00
Contractors	7.47
Power and machinery	18.20
Property maintenance and rent	10.92
Depreciation	5.99
Finance	1.29
Administration	3.36
Total Fixed Costs	**55.23**
Net Margin	**(-) 4.34**

Flock replacements – Pence per kg lamb produced	30
Variable cost – Pence per kg lamb produced	88
Fixed cost – Pence per kg lamb produced	104
Unpaid family labour hours	**45min**

Totals may not add due to rounding

Lowground ewe flocks – Technical performance

	Average
Ewes per ram	27
Ewe mortality %	8.7
Ewes replacement rate %	33.0
Lambs born dead or alive per 100 ewes	151
Lamb mortality (inc. born dead) per 100 ewes	18
Lambs reared per 100 ewes	133
Average weight of lambs kg	40.1
Weight of lamb produced per ewe kg	53.2
Purchased concentrates kg/ewe	59
Home-grown concentrates kg/ewe	17
Lambs sold finished per 100 ewes	95
Value per lamb £/head	90.46
Lambs sold/transferred store per 100 ewes	22
Value per lamb £/head	54.55
Lambs sold/transferred for breeding per 100 ewes	16
Value per lamb £/head	87.93
CO_2e kg/net lwt kg produced	12.6

Results from store lamb finishing enterprises

FOURTEEN STORE lamb finishing businesses, selling some 10,500 lambs achieved an average gross margin of £12 per lamb. Net margin's averaged £10 per lamb in a range from (-) £1 to £27 per lamb. Only one enterprise reported a negative net margin.

The number of enterprises surveyed did not allow comparisons to be made between high and low financial margins. Nevertheless by ranking enterprises on the basis of gross margin per lamb some themes begin to emerge.

- Top performers tended to benefit from the highest prices per kg lwt. They sold lambs at around 40kg lwt while those selling light weight or heavy lambs, under 36kg lwt or over 45kg lwt tended to have lower margins.
- Top performers tended to have good control on variable costs with less requirement for purchased feed or veterinary expense but greater expenditure on grass and forage crops.
- Top performers tended to also have lower fixed costs accounted for, largely due to lower property costs as they spent slightly more on labour, contractors and finance.

Store lamb finishing – Financial performance measures

	Average
Number in sample	14
Flock size	754
	£ per lamb
Lamb Sales	**74.78**
Less purchases	50.20
Net Output	**24.58**
Variable Costs	
Purchased concentrates	1.87
Home-grown concentrates	0.08
Other feeds	0.23
Forage	1.93
Total Feed and Forage	*4.11*
Veterinary	1.14
Bedding	0.02
Other costs	**4.39**
Total Variable Costs	**9.66**
Gross Margin	**14.92**
Fixed Costs	
Labour	1.75
Contractors	0.24
Power and machinery	0.94
Property maintenance and rent	0.82
Depreciation	0.89
Finance	0.18
Administration	0.31
Total Fixed Costs	**5.13**
Net Margin	**9.79**
Lambs purchased – Pence per kg lwt lamb sold	126
Variable cost – Pence per kg lwt lamb sold	24
Fixed cost – Pence per kg lwt lamb sold	13
Unpaid family labour hours	**5min**

Totals may not add due to rounding

Store lamb finishing – Technical performance

	Average
Weight of lamb purchased kg	30.2
Liveweight of lamb sold	39.9
Carcase weight of lamb sold	18.75
Sale price p/kg dwt	412
Daily liveweight gain	0.10
Finishing period – days	118
Mortality %	2.2
Purchased concentrates kg/lamb	8
Home-grown concentrates kg/lamb	0.5
CO_2e kg/net lwt kg produced	12.5

The Effect of Quality on Prices

The quality of the stock presented to the market and its value to processors through product size, improved meat yield, or less carcase trimming, will be reflected in market prices.

Beef

IN RECENT years the price of R4L steers has been rising relative to -U3 grading steers, likely in reflection of penalties for heavier carcases. However, 2019 saw the gap close a little, with R4L grades averaging just over a penny higher. For heifers, where -U grade carcase weights are low enough to avoid carcase weight penalties, -U3 heifers continued to hold a premium of around 4p over R4L grades.

An improvement in carcase quality from O+4H to R4L was worth just under 15p/kg dwt to producers for steers and just under 13p/kg dwt for heifers during 2019, with little change for either from 2018. The steer differential has held relatively stable in recent years but the differential for heifers had been narrowing more significantly.

Moving into 2020, the steer price differentials have slipped back slightly relative to the same period of 2019, while for heifers the -U3 premium over R4L has widened by a penny but the R4L premium over O+4H grades has been unchanged.

To be labelled as Scotch Beef, beef from eligible animals must also meet product specifications. Carcases must be classified as either 2, 3, 4L, 4H or 5L for fat cover and E, U, R or O+ for conformation.

In 2019, 95.3% of steer carcases and 97.9% of heifer carcases were graded in this range, up slightly from 2018, which in turn had shown slight improvements from 2017. In general, an increased share of steer and heifer carcases were classed as 4H and O+ in 2019.

R4L continued to be the most common grade for steers and heifers, accounting for 27.4% of the former and 30.4% of the latter in 2019. For steers, this was a fraction smaller, while, for heifers, it was a reduction of a percentage point. The second most common grade for steers was R3, followed closely by -U4L, and for heifers, R4H was second, on 15.9%, with R3 and -U4L taking shares of 10.1% and 12.1% respectively. For young bulls -U3 was most common at 20.9%, followed by R3 on 16.3%.

	Average -U3 premium over R4L (p/kg)			Average R4L premium over O+4H (p/kg)		
	2017	2018	2019	2017	2018	2019
Steer	-0.4	-2.1	-1.3	15.1	14.4	14.8
Heifer	5.8	3.9	4.0	14.8	13.1	12.8

Steer carcases by grade at Scottish abattoirs in 2019			
	3	4L	4H
-U	9.8%	13.1%	2.5%
R	14.9%	27.4%	7.4%
O+	4.8%	7.4%	1.3%

Others: 11.4%
Source: AHDB; QMS calculations

Lamb

AS IS the case for beef, there is also a financial reward from the market place where a lamb carcase meets an improved conformation and fat level. Both the U2 to R3L and R3L to O3H premia narrowed in 2019 after expanding a year earlier. The reduction in the latter premium left it at an eight-year low and meant the smallest gap between the two premia for the same period of time, pointing to a relative improvement in demand for O3H grades.

During the first 45 weeks of 2020, there was an increase in the U2 premium over R3 by 0.9p to 11.9p/kg. Meanwhile, the R3L premium over O3H narrowed 2.3p and, at 10.5p/kg, became smaller than the U2 to R3 premium, suggesting a further relative strengthening of demand for O3H grades.

These figures are average variations across Great Britain at price reporting abattoirs for Standard Quality Quotation lambs, but individual processors will have different requirements, and hence different pricing structures, which may have led to deviation from these levels. Therefore, a good relationship between producer and buyer which involves regular dialogue and feedback is very important.

In addition to its seasonal supply profile, lamb has a seasonal variation in quality. As the new season began in 2019, only around 70% of SQQ lambs at GB price reporting abattoirs achieved at least an R3L grade, which was well behind the five-year average of around 75%. However, the gap narrowed to around one percentage point in July and quality was closely in line with the five-year average for around two months from mid-August. However, the gap re-opened to average around two percentage points in the final 11 weeks of the year.

For hoggs, carcase quality had fallen sharply in 2019, so although 2020 saw a significant recovery, particularly in March and April, quality remained below historical averages, with around 54% grading at R3L or better.

In the first half of the 2020 season, carcase quality exceeded year earlier levels in three-quarters of the weeks, but the average improvement has been less than a percentage point, with soft points between mid-June and mid-July and again in October.

One thing noticeable in the data each year is a fall in carcase quality in the week of peak demand before Eid al-Adha. In 2020 this was the final processing week of July and the proportion of O grade carcases rose to 13% of the total compared to 9% in the previous week and 10% in the following week. Fat cover also changed, with 27% of carcases grading 2, compared to 22% in the preceding week and following week.

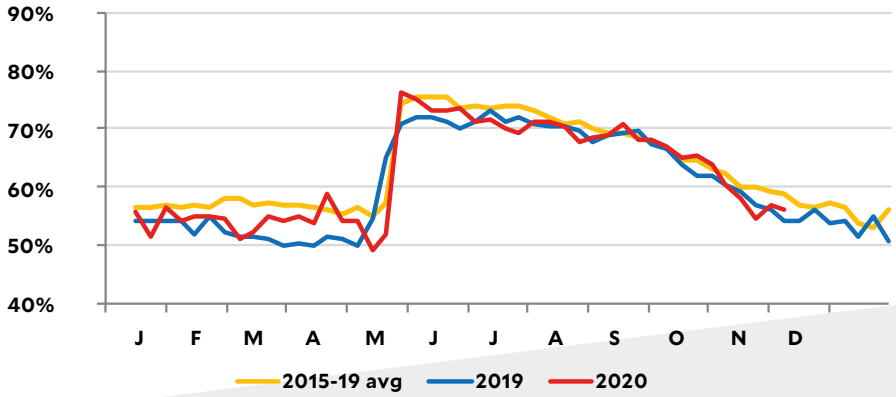
In recent years, the proportion of lambs sold at Scottish auctions weighing within the SQQ range of 25.5-45.5kg lwt has trended downwards. However, 2020 has seen a return towards the historical average. Grass growth was generally weaker through the summer than in 2019,

	Average U2 premium over R3L (p/kg)			Average R3L premium over O3H (p/kg)		
	2017	2018	2019	2017	2018	2019
Lambs	10.4	11.5	11.1	15.0	17.1	12.7

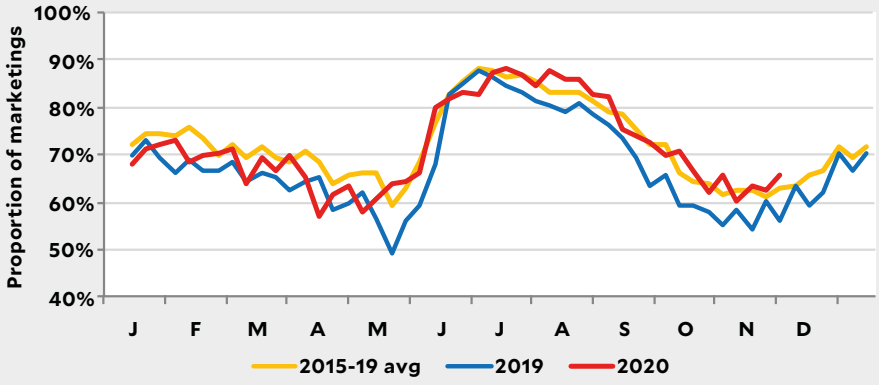
while the strength of farmgate prices appears to have led to an earlier marketing schedule, reducing weights, resulting in more lambs being sold at below 45.5kg.

During the hogg selling period of early 2020, the proportion within the SQQ weight range averaged four percentage points below the five-year average. However, this reversed in the early weeks of the new season. Since then the proportion has mostly held close to the five-year average, although there was a more consistent shortfall between mid-August and late September, suggesting higher weights around the time of peak weekly marketings.

Proportion of SQQ prime sheep grading R3L or better at price reporting GB abattoirs



Proportion of prime sheep classes SQQ (25.5-45.5kg lwt) at Scottish auctions



Estimation of Non-Cash Cost in Producing Cattle and Sheep

THE ENTERPRISE costings produced in this survey indicate the reward for the unpaid labour of those working with the herds and flocks and the reward for investing capital in an enterprise. A negative net margin indicates that there is no return for the labour and investment committed to an enterprise.

In this chapter, estimates are made of how much should be set against an enterprise if unpaid labour were to be charged for and if a return of 5% was required from the investment in livestock and running costs (but not buildings and land). The reward for investment in land and buildings can be considered to be the rental value of the land used by an enterprise. This analysis draws rental values from the Scottish Government's December 2019 Scottish Agricultural Survey[2]. This rental value gives a measure of the opportunity cost of the land used by beef and sheep enterprises.

The value of unpaid labour is estimated using the proportion of a man-year committed to the enterprise and an average value for an hour of work. Time committed by the average farmer is drawn from the survey data, with one man-year defined as 2,200 hours of annual work[3]. One hour of labour has been valued at £16.14; an increase of 4.8% on the year in line with the increase agreed by the Scottish Agricultural Wages Board for 2019.

Cattle enterprises	Unpaid labour	Return on working capital[4]	Rent of land and buildings
		p/kg liveweight sold	
Hill suckler herds	110	28	69
Upland suckler herds selling calves at weaning	53	24	20
Upland suckler herds selling yearlings	43	22	16
Lowground suckler herds	57	28	29
Rearer finisher herds	38	17	21
Cereal-based store finishing	4	8	1
Forage-based store finishing <22 months old	8	8	3
Forage-based store finishing >22 months old	14	9	5

Sheep enterprises	Unpaid labour	Return on working capital[5]	Rent of land and buildings
		p/kg liveweight sold	
Hill flocks	68	17	18
Upland flocks	35	11	9
Lowground non-LFA flocks	23	14	17
Store lamb finishers	4	2	3

2 "December 2019 Scottish Agricultural Survey" Scottish Statistical Publication March 2020
3 47 hour average week, assuming 5 weeks of leave
4 Return required to give a 5% return on working capital
5 Return required to give a 5% return on working capital

Total cost of producing a kilogramme of beef or sheep meat

ADDING TOGETHER the value of non-cash costs and the running costs of an enterprise provides an indication of the total cost of producing a kilogramme of beef or sheep meat. However, before doing this all enterprises need to be brought to a common standard. Thus, finance charges and rents paid have been excluded from the fixed costs of the enterprises surveyed in making the following estimate. They have been replaced by the imputed value for return on working capital and rental value for the land used for the livestock enterprise to bring all businesses, whether owner-occupied or tenant, to a common standard of cost of production and ability to deliver a return on working capital and unpaid family labour.

The table below summarises the cost of production for a kilogramme liveweight of beef or sheepmeat produced by the average performer among the enterprises covered by the survey. On the basis of these assumptions only store lamb finishers delivered an adequate return on working capital and unpaid family labour. Hill sheep and hill suckler herds were the furthest from meeting this objective.

	Non-cash estimates						Total Cost	Selling price
	Repl cost	Var cost	Fixed cost	Labour	Working capital	Rental value		
	Pence per kg liveweight sold							
Sheep enterprises								
Store lambs	126	24	11	4	2	3	170	190
Hill ewe	38	71	124	68	17	18	336	179
Upland ewe	23	65	58	35	11	9	201	174
Lowland	30	88	81	23	14	17	253	210
Cattle enterprises								
Hill suckler	29	124	146	110	28	69	506	203
Upland selling at weaning	29	95	102	53	24	20	323	215
Upland selling yearlings	24	115	113	43	22	16	333	225
Non LFA suckler	26	111	103	57	28	29	354	224
Rearer finisher	15	107	79	38	17	21	277	194
Forage finisher <22 month	131	48	24	8	8	3	222	186
Forage finisher >22 month	131	50	23	14	9	5	232	191
Cereal finisher	117	65	13	4	8	1	208	191

Labour based on £15.40 per hour and 2,200 hours per man year (£33,880 employment cost per year)
Rental values based on values published in Scottish Government's December 2018 Scottish Agricultural Survey
Working Capital charged at 5%
Fixed cost adjusted for rent and finance paid.

Comparisons with 2018 and 2019

The following tables summarise and compare the results from the 2019 calf and lamb crop with those of 2017 and 2018. Analysis is based on a comparison of the average from each of the three years surveyed and does not compare an identical sample.

Cattle enterprises

Suckler herds

- Lowground suckler herds saw a deterioration in margins despite higher herd productivity which combined with higher sale weights and slightly better prices to deliver a significant increase in net output. However, increases were reported in both variable and fixed costs that more than offset higher market returns leading to lower net margins although they remained higher than in 2017.
- Hill sucker herds selling weaned calves saw a deterioration in financial performance. The legacy of 2018 weather conditions may have contributed to slightly lower herd productivity and weaker market returns led to reduced net output. Despite increased veterinary expenditure, variable costs reduced on lower feed bills sufficient to lead to an improvement in gross margin, but higher fixed costs resulted in net margins remaining negative and falling to lowest levels in three years.
- Both groups of upland herds recorded a reduction in margins to their lowest level in three years and both groups reported average net margins to be negative. Both groups saw reduction in market returns despite selling slightly heavier cattle as market prices were slightly lower. Both groups trimmed variable costs slightly with those selling weaned calves achieving this through reduced bedding costs. This group also reported lower fixed costs while those selling older cattle saw fixed costs rise.

Cattle finishing

- Rearer finisher margins fell for a second year, largely as a consequence of poor market returns. Similar physical herd performance and weight of cattle at sale, but lower market prices, saw output fall around £130 per cow. Some of the decline in market return was recovered by lower variable costs, particularly feed and forage. There was also minor reductions in fixed costs. Nevertheless, lower costs could not recover all the loss in market revenue and net margins feel around £35 per head.
- Store cattle finishers all saw significant declines in margins, and all reported negative net margins, cereal finishers for the first time in several years. The decline in margins in all cases is dominated by the significant decline in market prices and slightly higher store cattle purchase prices.
- Cereal finishers and longer keep grass finishers were able to offset some of the decline in market returns by lower variable costs, particularly feed and forage cost. Shorter keep forage finishers did however see some increase in purchased feed costs, and hence total variable costs, as they took their cattle to higher weights than in 2018 over a slightly longer finishing period. Forage-based finishers saw small reductions in fixed costs, but fixed costs increased among the cereal finishers partly as a consequence of taking longer than in 2018 to finish cattle at higher weights.

Sheep enterprises

LFA Sheep

- Hill sheep flocks reported unchanged productivity measured as lamb weaning percentages. Store lamb values increased on the year, but the few prime lambs sold returned less than in 2018. Flock maintenance charges fell, and overall net output rose around 10%. Variable costs were much reduced, largely due to lower feed costs, but fixed costs rose. Consequently, improvements in gross margins were eroded, nevertheless net margins improved by £4 per ewe but remained negative across the businesses surveyed.
- Upland flocks also saw some improvement in productivity with lamb weaning rates at their highest level for three years. Prime lambs were sold at similar carcase weights to previous years, but market returns per lamb fell. Some of this lost revenue was offset though by firmer store lamb prices. Nevertheless, net output increased and with slightly lower variable costs as a result of lower expenditure on feed, gross margin per ewe rose around £6 per ewe. With fixed costs little changed, this passed through to a similar level of increase in net margins.

Lowground sheep

- Earlier lambing lowground flocks saw considerable reduction in lamb reared percentages; rearing 20 fewer lambs per 100 ewes than in 2018. The proportion of lambs sold finished also fell and although carcase weights were little different revenue per prime lamb fell sharply. Reduced revenue led to a significant fall in output and despite some reduction in variable costs, gross margins fell sharply. Fixed costs rose slightly, and the overall consequence was that for the first time in three years the average net margin among this group of enterprises was negative.

Lamb finishing

- Store lamb producers saw net margins recover from the low levels of 2018 but not match those seen in 2017. However, gross output slipped slightly on lower market returns. Improved margins then were due to lower costs associated with a much shorter finishing period. Similar starting weights and finishing weights but a shorter finishing period indicate much higher growth rates, helped by slightly better autumn weather conditions than in 2018.

Suckler herds

	Hill suckler herds			Lowland suckler herds		
	2017	2018	2019	2017	2018	2019
Number in sample	15	16	15	16	15	17
Avg. herd size (head)	59	40	42	75	75	79
			£ Per Cow			
Calf output including beef calf premium	**723.08**	**650.50**	**541.47**	**727.49**	**698.06**	**735.34**
Less replacements	69.35	64.20	62.25	72.71	82.19	73.55
Net Output	**653.73**	**586.30**	**479.22**	**654.78**	**615.87**	**661.79**
Variable Costs						
Total concentrates	92.93	104.41	88.14	63.12	39.20	53.94
Other feeds	63.27	95.77	69.67	32.50	35.71	67.16
Forage	53.07	60.56	29.73	94.30	72.28	65.32
Total Feed and Forage	*209.27*	*260.74*	*187.54*	*189.92*	*155.09*	*186.42*
Veterinary	36.97	39.46	46.48	53.88	41.97	48.80
Bedding	22.07	20.24	2.60	44.18	52.24	56.40
Other costs	44.50	44.42	31.03	28.43	16.84	28.48
Total Variable Costs	**312.81**	**364.86**	**267.65**	**316.41**	**266.13**	**320.10**
Gross Margin	**340.92**	**221.44**	**211.57**	**338.37**	**349.73**	**341.69**
Fixed Costs	**480.31**	**423.86**	**432.80**	**451.57**	**366.12**	**389.40**
Net Margin	**(-) 139.39**	**(-) 202.42**	**(-) 221.23**	**(-) 113.20**	**(-) 16.39**	**(-) 47.71**

	Hill herds			Lowland herds		
	2017	2018	2019	2017	2018	2019
Physical performance						
Calves born dead or alive per 100	95	95	90	96	91	94
Calves reared per 100	91	90	86	92	87	89
Daily liveweight gain (kg)	0.90	0.89	0.90	1.13	1.11	1.15
Return per calf (£ per head)	704	609	512	705	701	728
Calf price (£ per kg lwt.)	2.43	2.30	2.03	2.29	2.21	2.24
Weight per calf (kg)	290	265	252	308	317	325

	Upland suckler herds Selling weaned calves			Upland suckler herds Selling yearling calves		
	2017	2018	2019	2017	2018	2019
Number in sample	31	30	31	27	27	26
Avg. herd size (head)	104	105	105	110	130	115
			£ Per Cow			
Calf output including beef calf premium	**743.32**	**732.07**	**713.86**	**919.89**	**863.90**	**861.24**
Less replacements	79.47	77.33	82.16	78.26	80.96	83.66
Net Output	**663.85**	**654.74**	**631.70**	**841.63**	**782.94**	**777.58**
Variable Costs						
Total concentrates	43.10	47.75	56.87	101.36	113.85	130.47
Other feeds	30.45	37.62	35.49	29.33	51.71	57.34
Forage	76.72	80.50	78.28	93.00	95.42	71.30
Total Feed and Forage	*150.28*	*165.87*	*170.64*	*223.69*	*260.98*	*259.11*
Veterinary	42.78	43.44	43.16	51.04	49.18	48.98
Bedding	34.28	46.95	28.19	47.35	47.41	49.61
Other costs	36.76	27.35	29.49	36.73	40.76	38.35
Total Variable Costs	**264.09**	**283.61**	**271.48**	**358.81**	**398.33**	**396.05**
Gross Margin	**399.76**	**371.13**	**360.22**	**482.82**	**384.61**	**381.53**
Fixed Costs	**373.49**	**395.24**	**384.94**	**447.08**	**491.25**	**509.59**
Net Margin	**26.27**	**(-) 24.11**	**(-) 24.72**	**35.74**	**(-) 106.64**	**(-) 128.08**

	Upland herds Early weaning			Upland herds Late weaning		
	2017	2018	2019	2017	2018	2019
Physical performance						
Calves born dead or alive per 100	96	96	95	94	93	93
Calves reared per 100	91	90	90	89	87	85
Daily liveweight gain (kg)	1.15	1.10	1.12	0.98	1.05	1.00
Return per calf (£ per head)	723	716	684	940	894	916
Calf price (£ per kg lwt.)	2.42	2.31	2.15	2.41	2.31	2.25
Weight per calf (kg)	299	310	318	390	387	407

	Rearer/Finishers		
	2017	2018	2019
Number in sample	22	22	22
Avg. herd size (head)	102	103	96
		£ per cow	
Calf output including beef calf premium	**1146.35**	**1191.06**	**1061.26**
Less replacements	87.89	79.36	75.06
Net Output	**1058.46**	**1111.70**	**986.20**
Variable Costs			
Total concentrates	187.45	247.82	203.69
Other feeds	43.85	68.41	68.00
Forage	99.63	96.31	90.77
Total Feed and Forage	*330.93*	*412.54*	*362.46*
Veterinary	46.91	56.09	50.82
Bedding	79.69	92.14	70.05
Other costs	64.70	48.56	41.13
Total Variable Costs	**522.23**	**609.33**	**524.46**
Gross Margin	**536.23**	**502.37**	**461.74**
Fixed Costs	**526.04**	**535.81**	**530.43**
Net Margin	**10.19**	**(-)33.44**	**(-) 68.69**

	Rearer/Finishers		
	2017	2018	2019
Physical performance			
Calves born dead or alive per 100	94	95	94
Calves reared per 100	88	89	88
Daily liveweight gain (kg)	0.97	0.93	0.97
Return per calf (£ per head)	1298	1280	1201
Sale price (pence per kg dwt.)	360	355	334
Weight per calf (kg)	622	622	620

Businesses finishing cattle under cereal-based systems

	Cereal-based		
	2017	2018	2019
	£ per head		
Number in sample	17	15	15
Stock Sales	**1336.87**	**1316.60**	**1250.48**
Less stock purchases	718.03	728.55	756.06
Net Output	**618.84**	**588.05**	**494.42**
Variable Costs			
Concentrates	252.60	317.25	293.83
Other feeds	19.16	24.89	26.44
Forage	14.22	4.78	4.64
Total Feed and Forage	*285.98*	*346.92*	*324.91*
Veterinary	18.80	20.71	16.79
Bedding	47.87	54.97	44.43
Other costs	38.95	42.11	35.12
Total Variable Costs	**391.60**	**464.71**	**421.25**
Gross Margin	**227.24**	**123.34**	**73.17**
Fixed Costs	**104.40**	**83.44**	**103.34**
Net Margin	**122.84**	**39.90**	**(-) 30.17**
Physical performance			
Feeding period (days)	250	219	233
Start wt (kg lwt)	303	319	318
Average carcase weight (kg dwt)	382	361	375
Daily LWT gain (kg)	1.3	1.4	1.4
Mortality (%)	1.5	1.0	2.0
Sale price (£ per kg dwt)	3.49	3.61	3.29
Purchase price (£ per kg lwt)	2.34	2.24	2.27
Gross margin per day (£ per day of feeding period)	0.91	0.56	0.31

Businesses finishing cattle under forage-based systems

	Forage-based <22 month at slaughter			Forage-based >22 month at slaughter		
	2017	2018	2019	2017	2018	2019
	£ per head					
Number in sample	18	17	20	18	18	18
Stock Sales	**1280.78**	**1207.46**	**1158.55**	**1312.68**	**1306.19**	**1201.79**
Less stock purchases	822.73	805.67	826.30	827.37	755.81	819.46
Net Output	**458.05**	**401.79**	**332.25**	**484.71**	**550.38**	**382.30**
Variable Costs						
Concentrates	200.18	140.40	174.49	141.33	194.70	145.26
Other feeds	15.35	14.54	26.27	16.51	25.73	24.16
Forage	32.18	40.03	25.93	44.23	40.92	42.44
Total Feed and Forage	*247.71*	*194.97*	*226.69*	*202.07*	*261.35*	*211.86*
Veterinary	15.13	12.62	12.45	17.19	17.70	16.44
Bedding	31.84	29.21	33.84	30.71	50.67	40.95
Other costs	43.76	32.83	29.46	40.44	37.86	43.59
Total Variable Costs	**338.44**	**269.63**	**302.44**	**290.41**	**367.58**	**312.84**
Gross Margin	**119.61**	**132.16**	**29.81**	**194.30**	**182.80**	**69.46**
Fixed Costs	**253.05**	**218.55**	**193.13**	**246.74**	**242.34**	**210.76**
Net Margin	**(-) 133.44**	**(-) 86.39**	**(-) 163.32**	**(-) 52.44**	**(-) 59.54**	**(-) 141.30**
Physical performance						
Feeding period (days)	287	275	283	423	410	375
Start Wt (kg lwt)	357	367	389	354	332	384
Average carcase weight (kg dwt)	365	347	365	362	367	363
Daily LWT gain (kg)	0.95	0.80	0.9	0.64	0.73	0.65
Mortality (%)	0.7	1.0	0.5	0.9	1.1	2.2
Sale price (£ per kg dwt)	354	352	325	362	356	330
Purchase price (£ per kg lwt)	229	217	211	231	225	207
Gross margin per day (£ per day of feeding period)	0.42	0.48	0.11	0.44	0.46	0.19

Results from LFA sheep flocks

	LFA Upland Sheep Flocks			LFA Hill Sheep Flocks		
	2017	2018	2019	2017	2018	2019
	£ per ewe					
Number in sample	32	31	33	22	25	39
Lamb Sales	**105.55**	**102.63**	**108.00**	**56.04**	**47.50**	**50.02**
Wool	2.51	2.25	2.06	1.50	1.81	1.23
Gross Output	**108.06**	**104.88**	**110.06**	**57.54**	**49.31**	**51.25**
Less replacement costs	14.26	14.42	14.26	11.22	12.85	10.50
Net Output	**93.80**	**90.46**	**95.80**	**46.32**	**36.46**	**40.75**
Variable Costs						
Concentrates	12.73	13.48	10.89	7.17	8.14	5.06
Forage cost	6.32	5.84	7.92	2.83	1.49	0.87
Roughages	2.76	4.35	2.49	1.80	2.34	2.17
Total Feed and Forage	*21.81*	*23.67*	*21.30*	*11.80*	*11.97*	*8.10*
Bedding	1.75	1.25	1.42	0.20	0.08	0.09
Veterinary	7.77	8.34	9.61	5.71	5.63	6.01
Other costs	7.53	8.10	7.99	4.96	6.45	5.73
Total Variable Costs	**38.86**	**41.36**	**40.32**	**22.67**	**24.12**	**19.93**
Gross Margin	**54.94**	**49.10**	**55.48**	**23.65**	**12.33**	**20.82**
Fixed Costs	**47.26**	**48.75**	**48.27**	**42.72**	**38.48**	**43.24**
Net Margin	**7.68**	**0.35**	**7.21**	**(-) 19.07**	**(-) 26.15**	**(-) 22.42**

	LFA Upland Sheep Flocks			LFA Hill Sheep Flocks		
Physical performance						
Average no. of ewes	500	567	481	587	656	634
Lambs born/100 ewes	161	157	167	118	105	107
Lambs died/100 ewes	17	17	18	16	16	18
Lambs reared/ 100 ewes	144	140	149	102	89	89
Lambs sold/retained:						
Slaughter %	65	57	58	11	4	6
Stores %	21	20	15	52	49	49
Breeding %	13	23	26	37	36	36
Return per lamb sold finished (£)	77.07	77.79	76.71	67.35	64.33	58.22
Carcase weight lambs sold finished (kg)	19.7	19.5	19.6	17.3	16.7	16.9
Return per lamb sold store (£)	56.49	56.30	58.68	44.45	43.37	46.60

Results from Lowground sheep flocks

	2017	2018	2019
		£ per ewe	
Number in sample	15	13	13
Lamb sales	**145.88**	**137.05**	**111.76**
Wool	2.86	2.25	1.87
Gross Output	**148.74**	**139.30**	**113.63**
Less replacement costs	13.76	14.28	16.13
Net Output	**134.98**	**125.02**	**97.50**
Variable Costs			
Concentrates	17.57	20.85	16.63
Forage cost	5.95	8.38	7.64
Roughages	2.10	4.35	3.65
Total Feed and Forage	*25.62*	*33.58*	*27.92*
Bedding	0.81	1.29	1.68
Veterinary	9.54	9.40	9.22
Other costs	9.44	9.78	7.79
Total Variable Costs	**45.41**	**54.05**	**46.61**
Gross Margin	**89.57**	**70.97**	**50.89**
Fixed Costs	**47.94**	**52.58**	**55.23**
Net Margin	**41.63**	**18.39**	**(-) 4.34**
Physical performance			
Average no. of ewes	424	515	698
Lambs born/100 ewes	179	177	151
Lambs died/100 ewes	18	24	18
Lambs reared/100 ewes	161	153	133
Lambs sold/retained:			
Slaughter %	84	83	71
Stores %	6	5	16
Breeding %	10	12	13
Return per lamb sold finished (£)	92.55	92.30	90.46
Carcase weight lambs sold finished (kg)	20.7	20.6	20.4
Return per lamb sold store (£)	63.40	65.41	54.55

Store lamb finishing

	2017	2018	2019
		£ per lamb	
Number in sample	15	13	14
Lamb Sales	**79.97**	**75.94**	**74.78**
Less store lamb purchase costs	48.69	50.73	50.20
Output	**31.29**	**25.21**	**24.58**
Concentrates	3.94	5.03	1.95
Other feed	0.43	0.32	0.23
Forage	1.77	2.28	1.93
Total Feed and Forage	*6.14*	*7.63*	*4.11*
Bedding	0.01	0	0.02
Veterinary	1.61	1.42	1.14
Other costs	4.07	4.23	4.39
Total Variable Costs	**11.83**	**13.28**	**9.66**
Gross Margin	**19.46**	**11.93**	**14.92**
Fixed Costs	**7.37**	**7.23**	**5.13**
Net Margin	**12.09**	**4.70**	**9.79**
Physical performance			
Feeding period (days)	144	165	118
Liveweight at start (kg)	28.7	30.4	30.1
Liveweight at finish (kg)	39.2	38.5	39.9
Mortality (%)	2.3	4.6	2.2
Concentrates (kg)	18	19	8
Average carcase weight (kg dwt)	18.4	18.0	18.7

Glossary

Output
Income to the enterprise after deducting the cost of maintaining the breeding flock or purchasing store livestock and after valuation changes.

Variable costs
Costs which vary directly with the size of production of the enterprise and which can be easily allocated to an enterprise.

Gross margin
The surplus income left over after deducting variable costs from output. It is the contribution of the enterprise towards covering the farmer's fixed costs and overheads, rewarding the owner of the business for their work and capital investment.

Fixed costs
Costs reflecting the overall running of the business, but cannot be easily allocated to an enterprise because in many cases they are shared costs. In this analysis they have been broken down into the following categories:

Labour costs All paid labour including regular wages and casual wages.

Contract All contract labour and contractor services.

Power & machinery Machinery repairs; fuel; electricity; hire charges; tax and insurance.

Property maintenance & rent Farm and property repairs; council taxes and water charges; rent and grazing lets.

Depreciation Machinery and property depreciation charges

Finance Bank and loan interest and charges

Administration Insurance; professional fees; miscellaneous expenses.

Net margin
The surplus income left after deducting all costs from the output. It is the contribution the enterprise makes to cover the cost of unpaid family labour and to reward the owner for their investment in the enterprise.

Working capital
The sum of money tied up in productive livestock and the average capital needed to finance the annual costs of running the business; the latter estimated to be half of the total variable and fixed costs for the year.

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