



THE SCOTTISH RED MEAT INDUSTRY PROFILE



2017 EDITION



Introduction

This report draws together a wide range of the latest information on the Scottish red meat sector and encompasses the whole production chain – from producer to final consumer.

The data has been collated from many sources and, unless otherwise stated, covers the 2016 calendar year. The report's objective is to provide users with a single source of key information on the shape and scale of Scotland's red meat industry. This is the twelfth edition of this publication, and it highlights the continued importance of the red meat sector to Scotland's economy.

2016 was a more stable year for producers, with less rainfall and warmer temperatures than in 2015. However, the reduction in rain may have been a factor behind slower animal growth rates during the summer. In terms of animal numbers, there was a small dip in beef cows while the dairy herd expansion ended. Although total calf registrations fell back, there was a small increase in beef calf numbers. In the sheep sector, the breeding ewe flock is estimated to have consolidated, but a good 2016 lambing resulted in the largest lamb crop for five years. This increase, combined with delayed arrival on to the market, resulted in greater carry-over of hoggs into 2017. By contrast, breeding sow numbers grew further, and an expansion of abattoir capacity in Scotland meant that fewer weaner pigs were sold across the border.

For beef producers, a lower average farmgate price and carcase weights may have placed some downwards pressure on sales revenues in 2016. However, input costs remained relatively stable, limiting some of the pressure on margins. Once again, the timing of sales will have been key for beef producers, with prices trailing 2015 levels until mid-August and then holding slightly higher for the remainder of the year. For lamb producers, productivity exceeded 2015 levels while farmgate prices traded significantly higher than in 2015 from May onwards. In the pig sector, producer prices averaged lower than in 2015

but consistent increases from a March low-point will have given producers some confidence, while forward-buying of inputs may have limited any rise in feed costs.

The volume of red meat available for consumption in the UK during 2016 is estimated to have risen by 2.5% from the previous year to reach a nine-year high. Rising beef and pigmeat supplies were driven by growth in domestic production and imports, respectively, which more than offset an expansion of overseas sales. However, sheepmeat availability declined as domestic production fell and competitive pressures from other proteins limited demand for imports. Retail consumption of prime beef cuts was stimulated by lower retail prices, but this may have come at the expense of lamb sales. Pork continued to decline in popularity, with poultry offering fierce competition, but there was some switching towards processed pigmeat products.

After contracting in 2015, 2016 saw a recovery in the UK red meat trade. A weaker sterling supported exports, which rose by 7.5% and recovered most of the previous year's decline. In addition to volumes, currency movements provided a significant boost to export revenues and margins. Strong pigmeat demand in the Far East also underpinned overall exports. Meanwhile, overall imports were higher by 5%, as a sharp rise in pigmeat more than offset lower beef and sheepmeat import requirements.

In summary, 2016 was a more positive year for Scotland's livestock producers, as the weather was less extreme, input costs were relatively steady and farmgate prices moved ahead of 2015 levels in the second half of the year. In the processing sector, Scotland's companies felt a squeeze on margins as fierce competition in the retail sector placed downwards pressure on wholesale prices at the same time as raw materials were beginning to become more expensive. However, on the other hand, the export trade became more profitable as the year progressed. On the consumer side, changing lifestyle habits resulted in greater use of the foodservice sector and stronger demand for processed meat products. However, falling retail prices did result in some growth in demand for beef towards the end of the year.



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Executive Summary

Output from the rearing of cattle, sheep and pigs for meat production recovered in 2016, having fallen in 2015. Including coupled subsidy payments, combined output from the three species rose by 2% to £1.15bn. Since overall agricultural output contracted slightly, livestock production increased its share of the total by a percentage point to reach 40%.

The Scottish beef breeding herd contracted for the fifth time in six years in 2016, falling by 0.8% to total 420,900 head in December. However, beef-sired calf registrations increased by 1%, with possible contributors including productivity and greater use of beef bulls in the dairy sector. The breeding sheep flock is estimated to have contracted by around 3% to 2.91m head in December 2016, but the sow herd grew for a fourth year, reaching a six-year high of 37,800 head.

Scottish abattoirs handled slightly more prime cattle and considerably more mature cattle in 2016. With average carcase weights slipping back, annual beef production rose at a slower pace, but still reached a five-year high of 172,200t. In the sheep sector, a sharp fall in slaughterings coupled with lower carcase weights led to a decline in production of nearly 13% to 24,000t. Pig slaughterings were volatile during 2016 due to abattoir investment and maintenance. In the year as a whole, pigmeat production fell slightly to 24,500t, with a rise in carcase weights partially offsetting a small reduction in abattoir throughput.

Total sales revenues from the primary red meat processing sector are estimated to have fallen by 4% to £818.5m in 2016. This was driven by lower beef wholesale prices and a fall in sheepmeat production.

England and Wales remained the largest market for Scottish processors in 2016, with more than two-thirds of all revenues being generated there.

Export sales are estimated to have fallen by 3.5% to £73.9m.

Exports generated an estimated 9% of total turnover, little different from the previous year but still a smaller share of sales than for the UK red meat industry as a whole.

Farmgate cattle prices fell for a third successive year in 2016. Scottish abattoirs paid an average of 351p/kg dwt for steers, down 3% on 2015. For prime sheep, a stronger market pushed up prices by 6% year-on-year at Scottish auctions to an average of 178p/kg lwt. Although prime pig producer prices rose sharply between March and the year-end, the annual average of 129p/kg was 1.5% lower than in 2015.

A strong global harvest and intense retailer competition resulted in food prices falling for the third successive year in 2016. Another fall in farmgate cattle prices gave retailers some room to reduce retail prices. However, lamb retail prices fell slightly despite a rise in farmgate values. Lower farmgate pig prices and weak retail demand resulted in a faster rate of price cuts for pork, while bacon also became cheaper.

Although commodity prices rose in the second half of 2016, the annual average of UK agricultural input costs declined by more than 2% in 2016 and fell to its lowest level since 2010. The cost of fertilisers fell sharply, while energy and feed averaged slightly cheaper than in 2015.

The total volume of red meat available for consumption in the UK during 2016 increased by 2.5% to an eight-year high of 2.88m tonnes. The increase was mainly driven by higher domestic production volumes plus a sharp rise in pigmeat imports.

In 2016, the UK traded more red meat than in the previous year. Imports rose by 5% to 970,800t with exports expanding by 7.5% to 406,200t. On the import side, higher pigmeat volumes more than offset reduced beef and sheepmeat deliveries. For exports, a weaker sterling boosted trade in beef and pigmeat, but sheepmeat sales took until the final quarter to lift, in part due to a slow arrival of domestic supply on the market.



Farming Contribution

Provisional estimates indicate that Scottish agricultural output fell for a third consecutive year in 2016, down 0.5% to £2.87bn in 2016.

In contrast to total agricultural output, it is estimated that combined output from cattle, sheep and pig farming recovered most of its 2015 output decline, rising by 2% to £1.15bn. This meant that livestock farming's share of the total increased by one percentage point from a year earlier to reach 40% in 2016.

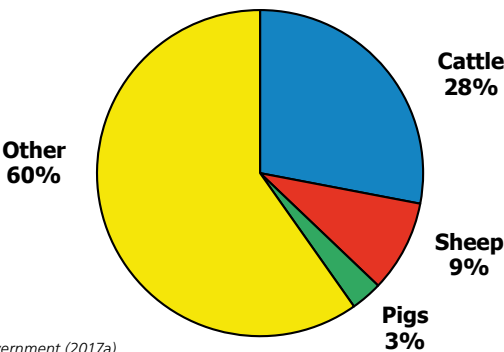
Although output from beef production underwent a third year of contraction in 2016, it remained the largest sector of Scottish farming. Output declined by 2% and slipped to a five-year low of £804m. Consequently, its share of agricultural output edged back from 28.5% to 28%. Output from finished cattle and calves decreased by 1% to £642m as lower prices were partially offset by increased production and higher coupled support payments, in part down to currency movements. Meanwhile, the cross-border trade in store cattle and calves rose by 9.5% to reach £53.8m. By contrast, capital formation (the asset value of replacement breeding cattle) declined by 11% to £108.1m and was responsible for most of the cattle output decline.

The main driver of the overall increase in livestock output in 2016 was from the sheep sector. Output climbed by more than 16% to reach £261.5m – its highest since 1997. This pushed its share of agricultural output above 9% – its highest since 2010. Most of the rise in output was driven by finished sheep and lambs, increasing 13% to £195m, as a higher lamb crop and a firm market combined. Cross-border sales of store sheep rose slightly, but wool sales flat-lined. Higher prices for replacement sheep underpinned capital formation, which is estimated to have risen by over one-third.

In the pig sector, output recovered some of the ground it lost in 2015, rising 4% to £89.5m. Further herd expansion and productivity gains boosted slaughter availability, more than offsetting a small decline

in the average annual producer price. However, capital formation is estimated to have fallen back. The pig sector took a marginally higher share of Scottish agricultural output in 2016, but remained at close to 3%.

Livestock contribution to agricultural output in Scotland – 2016



Source: Scottish Government (2017a)

Contribution to Scottish Agricultural Output						
	2014		2015		2016	
	£m	%	£m	%	£m	%
Cattle	827.3	27.3	821.4	28.5	803.8	28.0
Sheep	237.6	7.8	224.9	7.8	261.5	9.1
Pigs	93.5	3.1	86.2	3.0	89.5	3.1

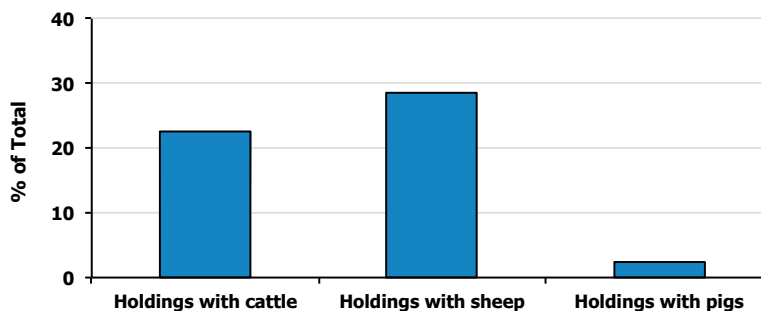
Source: Scottish Government (2017a)



Livestock continues to be of greater significance to Scottish agriculture than it is either in the UK as a whole or, on average, in the EU.

Sheep production maintained its position as the most common farming activity in Scotland, with 28.8% of Scottish holdings involved in sheep production during 2016. Meanwhile, 22.5% of holdings were involved in cattle production and 2.2% produced pigs. The total number of agricultural holdings in Scotland fell by 0.8% to 51,896 in 2016. Cattle and pig farming saw declines of 1.6% and 6.2%, respectively, but the number of holdings with sheep rose by 0.4%.

Proportion of Scottish holdings with livestock enterprises



Source: Scottish Government (2017c)

Contribution to Agricultural Output (%)

	Scotland (2016)	UK (2015)	EU (2015)
Cattle	28.0	14.7	8.6
Sheep	9.1	6.3	1.5
Pigs	3.1	4.8	9.0

Sources: Scottish Government (2017a); Defra (2017c); Eurostat (2017)



Cattle Production

Scotland's beef breeding herd contracted for the fifth time in six years in 2016, falling by 0.8% to total 420,900 head in December. There were 3,600 fewer beef cows as a result. Numbers were 9% below the 2006–10 average and fell 2.5% short of the 2011–15 average.

A challenging period for dairy producers culminated in the first fall in dairy cow numbers since 2011, with numbers down 1.5% at 174,700 head. Nevertheless, this was still the second highest level of the previous nine years.

In June 2016, the regional spread of cattle across Scotland remained heavily concentrated in the South West and North East. In Scotland, livestock production is heavily influenced by land type. As a result, in the North West, Tayside, the Borders and Argyll & Bute the cattle population is skewed towards the beef herd. By contrast, in the South West, there is a heavier focus on finishing store cattle and dairy production. In the North East, producing beef calves and finishing beef cattle take place in relatively equal measure.

Herd Size

In June 2016, the average size of a Scottish beef suckler herd rose to 48 cows. This was once again well above the UK average, which stood at 27 in 2014.

Average herd sizes remain slightly lower across Scotland than before the decoupling of subsidy payments in 2005.

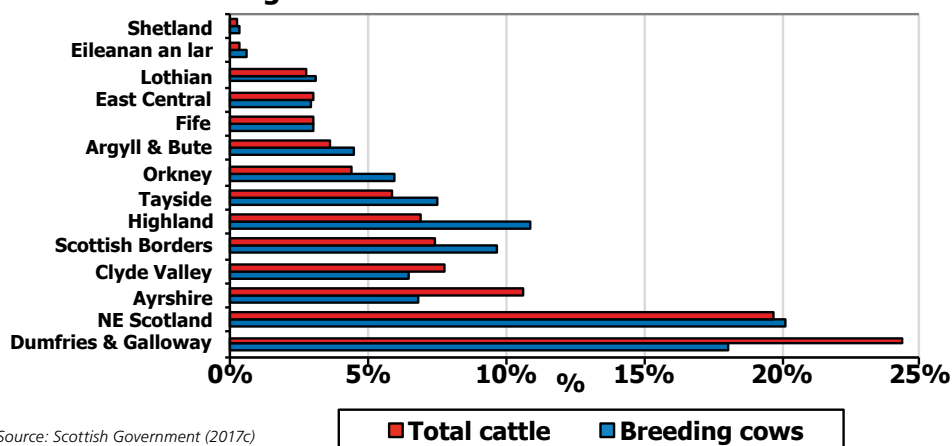
With crofting prominent in the Highlands and Islands, average herd size is much smaller in the North West than elsewhere. Though Orkney herds averaged above the national level, the average holding in Shetland kept only eleven beef cows, while there were just seven beef cows on the average Western Isles holding.

The largest average herd size was in the Scottish borders with 75.5 head. Lothian and Dumfries & Galloway followed closely with 67 and 66.5 head, respectively.

Scottish Cattle Population

	2014	2015	2016
	'000 head		
Beef breeding herd	422.9	424.5	420.9
Dairy breeding herd	174.4	177.3	174.7
Total cattle herd	1,730.9	1,736.1	1,712.2
Breeding herd comprises female cattle over two years of age with offspring			
Source: Scottish Government (2017b)			

Regional distribution of cattle



Breeding cows = female beef cattle over two years of age with offspring

Scotland has a number of large cattle enterprises. As a consequence, 14% of holdings accounted for half of the beef herd in 2016, while 19% of holdings with cattle under 12 months of age kept 69% of the Scottish total. However, the beef sector remained less concentrated than sheep or pig farming.

Compared to 2015, the only regions to show a decline in the average beef herd size were Argyll & Bute and Dumfries & Galloway, while Ayrshire and the North East showed no change.

Beef Cows Per Holding – Regional Average

	North West	North East	South East	South West	Scotland
2005	31.5	57	66.5	55.5	51
2015	29	55.5	63	50.5	47
2016	29	55.5	64.5	51	48
Source: Scottish Government (2016, 2017c)					

Calf Registrations

The total number of calves registered in Scotland dipped back in 2016 following two years of growth. Registrations fell by 0.5% to 568,350 head as a small increase in beef-sired calves was more than offset by a sharp fall in dairy registrations.

Beef-sired registrations increased for the third consecutive year in 2016. However, the rate of growth eased back to 1% from closer to 2% in 2014 and 2015. At 466,100 head, beef-sired registrations reached a five-year high. Since dairy registrations fell by 6.5% to a six-year low of 102,300 head in 2016, beef-sired calves accounted for an increased 82% share of total registrations. This was the highest since 2011.

On a regional basis, total registrations fell in the North East (-0.4%), North West (-2.3%) and South West (-0.4%), but rose by 0.8% in the South East. Beef registrations fell by 0.2% in the North East and by 2.1% in the North West, but showed expansions in the South East (1.2%) and South West (2.7%). The South West accounted for 44% of beef registrations and 51% of total registrations in 2016.

Scottish calf registrations provide a leading indicator of potential beef production in the following couple of years. The increase in beef calf registrations of 2014 underpinned a rise in availability of prime cattle for slaughter in 2016.

Further growth in registrations during 2015 therefore points to another small increase in prime cattle availability in 2017, though supplies of dairy young bulls may be constrained during the summer months. Given that beef-sired registrations rose at a faster pace in H1 2015 than in H2, the potential for increased supplies in 2017 may be front-loaded. Overall availability may then stabilise in 2018.

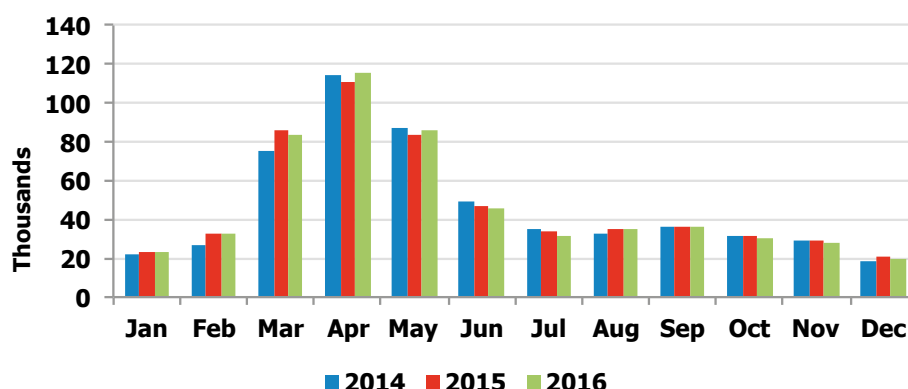
In 2016, 21.9% of the calves born in Scotland were sired by either a Limousin or Limousin Cross bull. Although this meant that Limousin retained its position as the most popular sire in Scotland, its share of the total fell by 0.3 percentage points. Back in 2010, it had held a 26% share of the total.

Number of Scottish-born Calves Registered with BCMS

	2014	2015	2016
Calf registrations	558,800	570,500	568,300
Of which beef-sired	453,500 (81%)	461,200 (81%)	466,100 (82%)

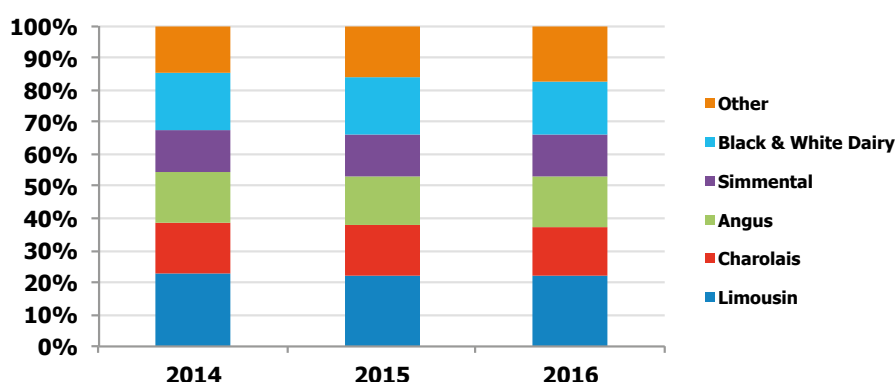
Source: BCMS

Scottish calf registrations



Source: BCMS

Scottish calvings – top sires



Source: BCMS

Limousin sired calf numbers declined by 1.7% to 124,650 head.

With dairy registrations falling sharply in 2016, 7% fewer black and white dairy calves (Friesians and Holsteins) were registered. At 93,100 head, they accounted for 16.4% of the total, down from 17.6% in 2015.

With producers able to secure a premium from the marketplace for finished Aberdeen Angus cattle, the breed's popularity has been rising for a number of years. 2016 was no exception, with registrations rising by 2% to 91,700 head. Consequently, their share of the Scottish total rose by 0.4 percentage points to 16.1%.

The popularity of Charolais continued to decrease, with registrations down by 1.8%, while marginally fewer

Simmental-sired calves were registered. As a result, the Charolais share of the national total edged down to 15.2%, while the Simmental share edged fractionally higher to 13.1%.

The popularity of other sires, in general, rose strongly. Of the native breeds, the number of Shorthorn-sired calves rose by 14.5% while there was a 8.5% increase in Herefords. However, fewer Luining and Highland calves were registered. In terms of other popular breeds, registrations of Saler and British Blue grew by 8% and 14.5% respectively in 2016.

Sheep Production

Since 2015, the December Survey of Agriculture figures, published by the Scottish Government, have been sourced from the more comprehensive Sheep and Goat Inventory. Since the categories of sheep reported are different from the old December survey of main holdings, caution is required when comparing against previous years.

Adding the number of ewes that had been kept for breeding in the autumn of 2016 to the number of lambs that had been put to the ram indicates that the Scottish breeding sheep flock contracted by 3% to 2.91m head in 2016. This was 5% below the 2006–2010 average and 1.5% below the 2011–15 average.

Subtracting the female breeding herd from the total number of sheep estimated to have been on Scottish holdings in December 2016 points to a 9.5% year-on-year increase in 'other sheep'. Numbers surged to a nine-year high of 2.13m head due to the combination of an increased June lamb crop plus the delayed arrival of these lambs on to the slaughter market during the autumn.

Just three regions accounted for 45% of the breeding flock in June 2016. The Scottish Borders had the largest flock, with 16% of the total, while Dumfries & Galloway had 15.5% of the total and Highland took a 13.5% share.

Regional variation in ewe performance due to factors such as weather and ground conditions led to a different distribution of lambs across Scotland. The Scottish Borders was home to 18% of Scotland's lambs in 2016, while Dumfries & Galloway had 16% of the total and nearly 12% lived in Highland region.

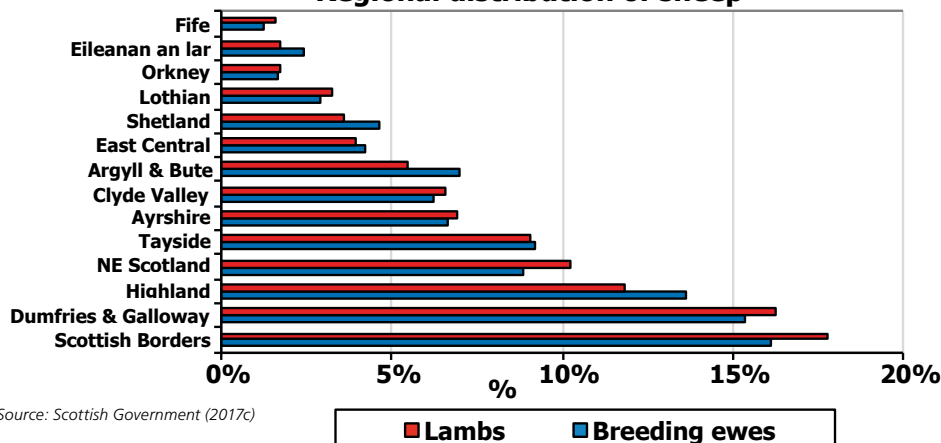
Ewe performance improved across much of Scotland in the 2015–16 breeding season. At just under 127%, the national lambing percentage rose by two percentage points on the previous year, remaining ahead of its 10-year average of 125%.

Scottish Sheep Population

	2014	2015	2016
	Million head		
Breeding sheep flock	3.039	3.011	2.914
Other sheep	1.802	1.949	2.129

Source: Scottish Government (2017b)

Regional distribution of sheep



Source: Scottish Government (2017c)

Regional Lambing Performance (lambs as % of ewes)

	North West	North East	South East	South West	Scotland
2015	105	146	134.5	124	125
2016	107	146.5	136.5	126.5	127

Source: Scottish Government (2016, 2017c)

Lambing performance declined in only one region of Scotland – Tayside. Performance was unchanged in Fife, and it rose by less than 1% in the North East and in Orkney.

At the other end of the scale, gains of around 3% in performance were realised in the Borders, Lothian, and Argyll & Bute. The Western Isles led the way, rising by more than five percentage points, more than offsetting a significant decline in 2015. The largest lamb crop in Scotland was in the Borders, where each ewe produced an average of 1.4 lambs compared with 1.37 in 2015.

Fife remained the top Scottish region for ewe performance, stabilising at 157%. The North East remained second best at 146.5%, while Lothian was third on 142.5%. Although ewe performance in the North West was, in general, well below average, Orkney continued to exceed the national average with its lambing ratio of 135%.

Flock Size

	North West	North East	South East	South West	Scotland
2005	112	171.5	454	340	224
2015	97.5	166.5	405	294	204.5
2016	98	171	406	297	206.5

Source: Scottish Government (2016, 2017c)

Flock Size

The average Scottish breeding ewe flock had two more ewes than a year earlier in June 2016, rising to 206.5 head. This meant that the average Scottish flock remained smaller in size than the UK average, which stood at 229 in 2014.

Since decoupling of subsidy payments in 2005, average flock sizes have fallen significantly outside the North East.

Scottish sheep production has a significant number of large units. Indeed, just 21% of holdings accounted for nearly three-quarters of breeding ewes in 2016.

South East Scotland has the largest farms, with each having an average of 406 breeding ewes in June 2016 – almost double the Scottish average. Looking more closely at the data for the South East region shows that its higher average is largely due to the Borders. Indeed, the average Borders sheep holding kept 521 ewes during 2016. At 365 ewes, Tayside had the second largest flocks in Scotland. East Central (South West) took third place with 348.

The North West has the smallest farms, averaging 98 ewes apiece in 2016. This average was held down by the Western Isles which had an average of just 33 ewes per holding in 2016.

Between 2015 and 2016, the average breeding flock contracted in the Scottish Borders, Argyll & Bute, Ayrshire and the Western Isles. Of the regions that saw increases in average flock size, the most significant were Lothian (9), Fife (9) and East Central (14.5).



Pig Production

The 2016 December Agricultural Survey indicated the continuing recovery in size of the Scottish sow herd. Numbers expanded for the fourth consecutive year, rising 1.5% to 37,800 head. This was the highest December total since 2010 and numbers have rebounded by more than a third from their 2012 low. Sow numbers were slightly above their 2006–2010 average and 19% higher than the 2011–15 average.

The rise in the breeding herd may have been in response to the recovery in the slaughter market and an expansion of capacity in the pig processing sector in Scotland.

However, the December survey did report a sharp reversal in gilt retentions, falling by 29% to 4,900 head and more than offsetting the previous year's considerable increase.

The number of prime pigs on Scottish farms increased for a third year, rising by more than 13% to a five-year high of 323,300 head. In addition to productivity growth, this sharp increase may reflect a slowdown in the cross-border trade in weaner pigs, with more being finished on Scottish farms than in the previous year. As a consequence, there were 8.6 prime pigs for every sow in December 2016–up from 7.7 in 2015 and marginally above 2014's 8.5. Nevertheless, this remained well below the 2006–12 average of just over 10, when slaughter capacity in Scotland had been significantly higher.

North East Scotland is home to the vast majority of the country's sows. The region's share of the national herd rose to 61.5% in June 2016 from 60% a year earlier as sow numbers increased by 3%. There was an even more significant increase in the South West, where numbers rose by more than 10%, taking its regional share from 7% in June 2015 to 7.5% in June 2016. Meanwhile, the South East saw its share of the national herd fall by 1.5 percentage points to 26% as sow numbers contracted by 4.5%. Sow numbers declined by 15% in the North West, lowering its share of the national herd to 5%.

Scottish Pig Population

	2014	2015	2016
	Head		
Pig breeding herd	33,200	37,300	37,800
Total pig herd	322,100	331,000	367,800

Source: Scottish Government (2017b)

Breeding Herd Size

	North West	North East	South East	South West	Scotland
2015	12	201.5	81.5	15	63.5
2016	11.5	221.5	79.5	17.5	68.5

Source: Scottish Government (2016, 2017c)

Herd Size

The average Scottish sow herd increased by five sows in the year to June 2015, following increases of six and four sows in the previous two years. This recent growth has pulled the average herd size in Scotland up to the UK average.

In the North East, the average holding kept 221.5 sows in June 2016–a second successive 10% increase and three times the national average. This difference in scale was also true for fattening pigs, with the average North East holding keeping 732.5 in June 2016 compared to a national average of 286.5. The average for the North East rose significantly from 652 fattening pigs in June 2015. Both statistics reflect the concentration of commercial pig production in this area of Scotland.

Pig production remains highly concentrated within a small number of businesses. In 2016, just 13% of holdings with breeding female pigs accounted for 94% of the sow herd, while 98% of fattening pigs lived on only 16.5% of holdings.

Concentration was up slightly from 2015, as there were fewer holdings with less than 100 sows.

During 2016 there were 43 holdings in Scotland with 250 or more sows, averaging 614 each. This was up from 571 in 2015. Meanwhile, the number of holdings with between 100 and 249 sows stabilised at 16, averaging 169 sows compared with 165 a year earlier. In the North East, the average holding with more than 249 sows had 646, up from 609 in 2015. In the South East, the largest holdings averaged 637 sows, up from 573 in 2015.

The 115 Scottish holdings with 100 or more fattening pigs kept an average of 1,720 each in June 2016, up significantly on the 1,595 average across 117 holdings in June 2015. Thirty-seven of these large holdings were in the South East, which includes Tayside, and they each had an average of 1,474–down from 1,567 12 months before. In the North East, average numbers on large holdings rose from 1,665 across 65 holdings in June 2015 to 1,961 spread across 63 holdings in June 2016. In the North West and South West, numbers on large holdings averaged around 1,300 head.



Primary Processing Contribution

Supply of Product to the Processing Sector

Cattle

A total of 400,100 prime cattle were slaughtered at Scottish abattoirs during 2016. This was a small recovery of 0.7% from 2015, but numbers were still 13% below 2011 levels and down 22% on 2006.

The slaughter of mature cattle rose sharply in 2016, up 15.5% to 71,000 head. This was the highest level of this century.

During 2016, the total number of cattle killed at Scottish abattoirs and entering the food chain increased by 2.5% to a three-year high of 471,300 head.

In 2016, the average prime cattle carcase weight fell slightly below 2015's record high, averaging 369kg. The average cow carcase weight fell for a second year, down 2% at 341kg.

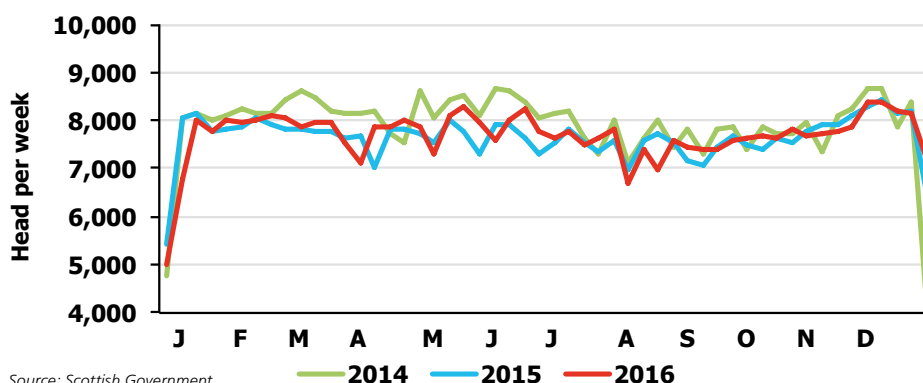
Carcase weights remained at levels where significant numbers of cattle, primarily steers, exceeded the target weight ranges for meeting multiple retailers' product specifications for prime cuts of beef. Increased price penalties for heavy carcasses are likely to have had an impact on carcase weights.

It is estimated that decreased carcase weights almost offset the rise in prime cattle slaughterings, resulting in prime beef production edging 0.2% higher to 147,600t. However, overall beef production rose by an estimated 2% to 172,200t as the sharply increased cow kill outweighed lower weights.

Although the average age at death for under 30-month old cattle is relatively stable through the calendar year, carcase weights have traditionally shown a seasonal profile, falling during the second half of the year.

During the year, the distribution of kill by gender changes. Steers and heifers are dominant throughout, averaging 78% between them in

Seasonal supply of prime cattle to Scottish abattoirs

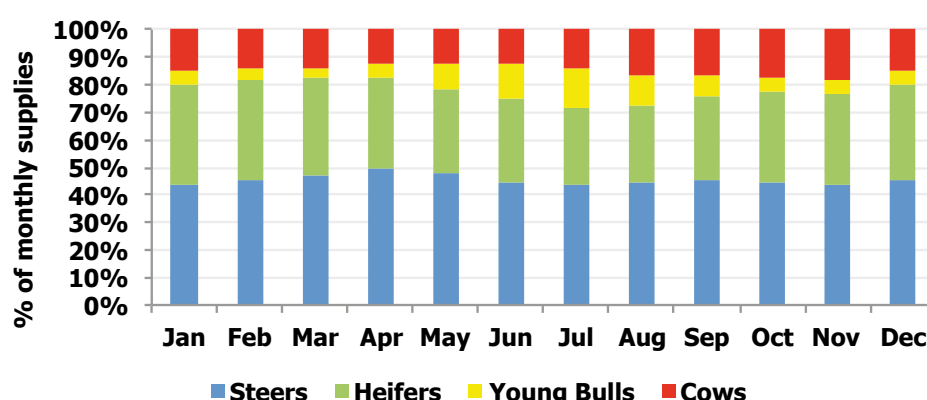


Average Carcase Weights

	Scotland			UK
	2014	2015	2016	2016
	kg per head			
Steers	384	392	387	372
Heifers	336	344	344	328
Young bulls	354	359	361	327
All prime cattle	363	371	369	351
Cull cows	350	348	341	305

Sources: Defra; Scottish Government

Seasonality of cattle supplies by gender in 2016



2016, but this fell to less than three-quarters in July and August when young bull throughputs peaked. Peak cow culling occurs in the autumn, pushing up the share of cows in the total kill. They accounted for 16–19% between August and November 2016, compared with an annual average of 15%.

The slaughter mix changed in 2016. The sharp expansion of the cow kill pushed their share two percentage points higher to almost 15%. While the steer kill remained at 45.5%, heifers fell by a percentage point to 32.5% and young bulls slipped by 0.5 percentage points to around 7.5%.

Age of Cattle at Slaughter

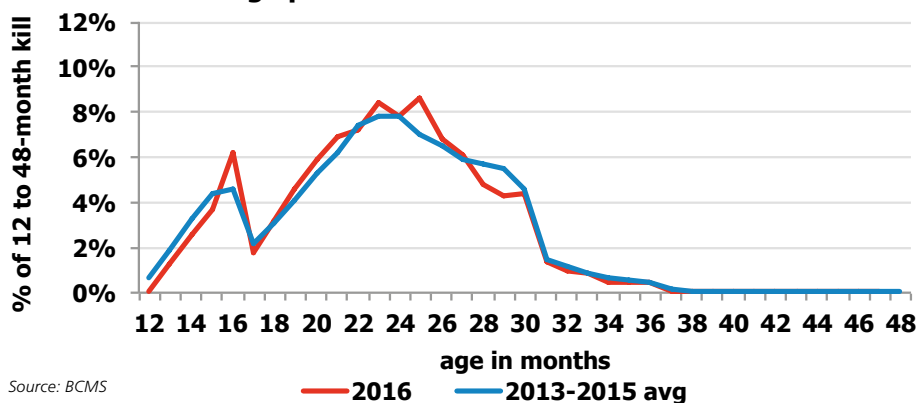
Although the young bull share of the prime cattle kill in Scotland fell in 2016, there was a significant increase in males being slaughtered during their 16th month. While stringent age limits on young bulls meant that fewer were killed during their 17th month, there was also a shift to 16 from the 12–15 range. Within the steer age profile, there was a notable movement towards slaughtering at a younger age in 2016, with price penalties on heavy carcasses a potential factor. Although the change resulted in the most common age at death rising by 1–2 months to the 25th month, the median age at death fell by a month to 23 months.

In contrast to the steer profile, the heifer age at death profile appears to have moved older in 2016, with a smaller proportion being slaughtered in their 12th–20th months. However, the median age at slaughter did, as with the males, shift forward by a month relative to the 2013–15 average. This was down to an increased share of slaughtering taking place at 21–22 months. The 22nd month remained the most common month for a heifer to be slaughtered in.

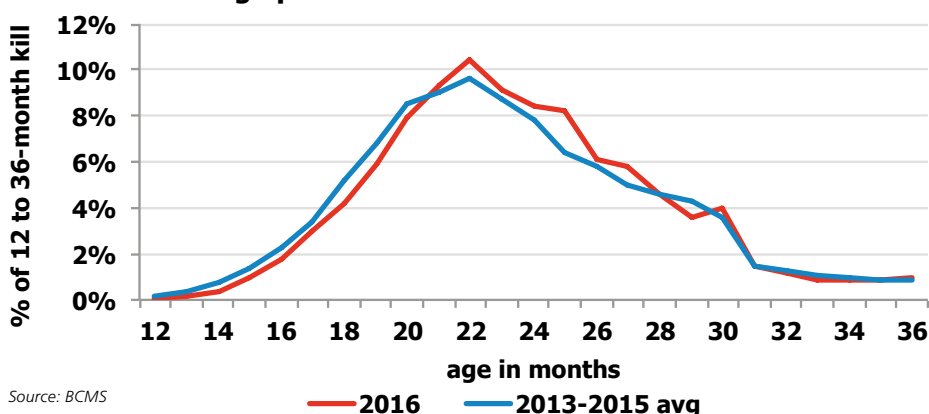
Amongst female cattle over 30 months of age, beef cows tend to live for longer than their dairy counterparts. In the dairy herd, cows appear to be culled mainly between four and seven years of age (48–84 months) while only very few will live past the age of 14 years (168 months). For beef cows, the profile is relatively stable from four years all the way up to 13–14 years where it begins to tail off. The age profile for beef cows approaches zero (<0.05% of the >30-month kill) at around 212 months, three–four years later than for dairy cows.

The higher levels of female beef cattle being killed between 31 and 36 months of age will mostly reflect the slaughter of older heifers. It will also include heifers that have been served for the first time, but failed to conceive.

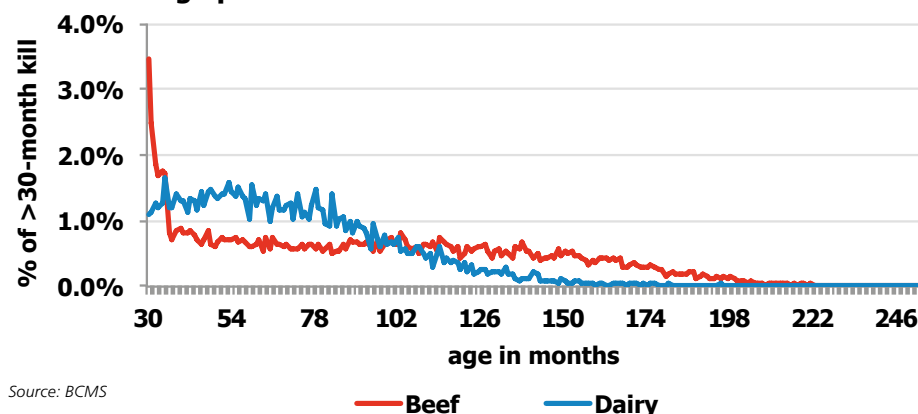
Age profile of male cattle at death



Age profile of female cattle at death



Age profile of over 30-month females at death



The average age at death for a dairy cow in 2016 was just under six years; for beef it was around eight and a half years. This would suggest that the average dairy cow will have had three calves, while the average beef cow will have had six calves. However, it should be noted that on the beef side, the flat age profile would suggest that ten or eleven calves would be almost as common as six calves.

Sheep

A total of 1.17m prime sheep were processed by Scottish abattoirs during 2016. This was a decrease of 11.5% from the previous year, and slaughterings fell to their lowest level since 2008. The magnitude of the decline indicates that demand-side factors were at play and that more prime sheep left Scotland to be slaughtered in England and Wales.

During the first third of the year, slaughterings contracted by 13.5%. One factor adding to this rate of decline was the increased carry-over of hoggs into 2015 that had to be compared against.

Slaughterings decreased by nearly 9.5% year-on-year during the second half of 2016. Although the June census indicates that there was a significant increase in the number of lambs to work with, and a weakening of sterling made home-produced lamb more competitive both in the home market and on the continent, lamb growth rates disappointed, delaying slaughter. This delay may have led to the more stable weekly kill profile throughout the final quarter than in previous years.

The largest weekly kill of the year occurred in the week ending September 10. This reflected additional demand for sheepmeat due to the Eid al-Adha festival.

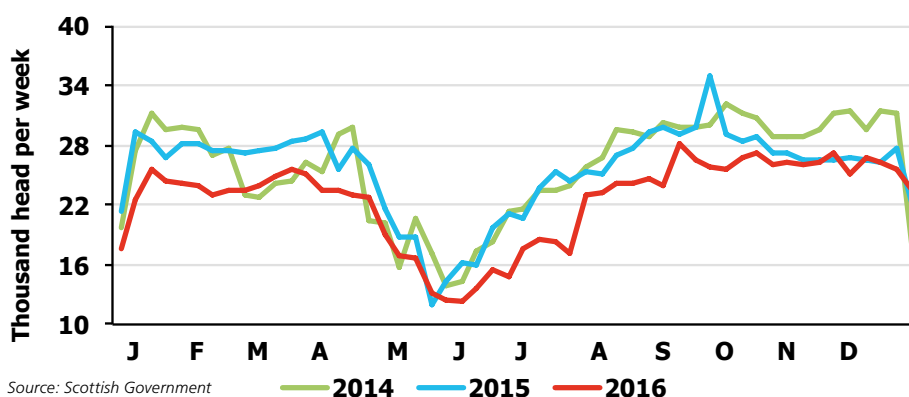
The number of ewes and rams handled by Scottish abattoirs also declined by 11.5% in 2016, slipping to just 14,500 head. The low level of slaughtering in Scotland continues to reflect the fact that the majority of Scottish cull sheep are transported to abattoirs in England and Wales.

In its 2016 Economic Report on Scottish Agriculture, the Scottish Government estimated that 445,500 Scottish ewes were slaughtered in 2015. This suggests that around 429,000 Scottish ewes were slaughtered in England and Wales during 2015.

The average prime sheep carcase weight at Scottish abattoirs decreased by 1.5% to 20.2kg in 2016.

Between January and May, and August and October, carcasses were 1–2% lighter than in 2015. However,

Seasonal supply of prime sheep to Scottish abattoirs



Average Carcase Weights				
	Scotland			UK
	2014	2015	2016	2016
	kg per head			
Lambs	20.1	20.4	20.2	19.2
Cull sheep	31.0	31.9	30.6	25.9

Sources: Defra; Scottish Government

the declines were more significant – 2–3% at the beginning of the 2016/17 season in June and July. As lamb growth began to catch up with 2015 levels the rate of decline slowed to –0.7% in November, before the year ended with carcase weights rising by 1.5% in December.

In contrast to 2015, when carcase weights fell to their lightest in December, the December 2016 average was the highest of the year.

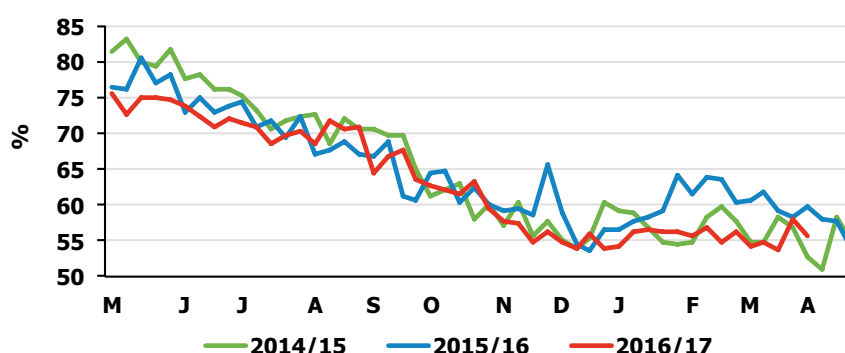
The fall in average carcase weights added to the decline in slaughterings, resulting in prime sheepmeat production falling by more than 12.5% from 2015 levels, slipping to 23,600t. At 24,000t, total sheepmeat production fell by the same proportion.

Carcase quality

62.8% of the prime sheep slaughtered at GB price-reporting abattoirs in the 48 weeks from May 2016 to the end of March 2017 achieved an R3L grade or better. This was below the 64.2% figure for the corresponding period in 2015/16.

During the 48-week period analysed in 2016/17, carcase quality was poorer than 12 months before in 36 of those weeks. It was generally slightly behind 2015 levels for most of the May to December period, except for periods in August, late September and late October. Moving into Q1 2017, there was significant divergence, with the proportion grading at R3L or better averaging five percentage points lower.

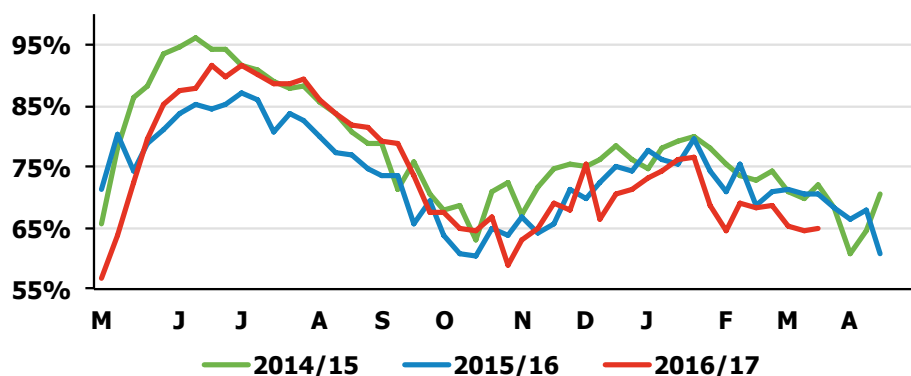
Proportion of GB sheep carcasses achieving R3L grade or better



A further proxy of carcase quality is the proportion of prime sheep sold at auction that qualify as 'Standard Quality Quotation' (SQQ). The SQQ covers prime sheep weighing from 25.5kg up to a maximum liveweight of 45.5kg. The proportion within the SQQ weight range exceeded the levels of the previous season consistently from May to October 2016. However, auction market data showed a reversal in this trend from November onwards, with a higher proportion of heavy lambs and hogs being sold at Scottish auctions.

This fits with the indication of slower lamb growth rates in the summer and autumn, and with the evolution of prime sheep carcase weights at Scottish

Proportion of prime sheep classed SQQ at Scottish auctions



Source: AHDB; IAAS

abattoirs.

Pigs

Scottish abattoirs slaughtered 298,350 clean pigs during 2016. Compared with the previous year, this was a 1% decrease, although abattoir upgrades and maintenance resulted in considerable volatility in weekly throughput. However, Q4 did see a step change higher in slaughterings. Indeed, the average weekly kill rose to 6,400 head in Q4 compared with less than 5,750 in the same period of 2015.

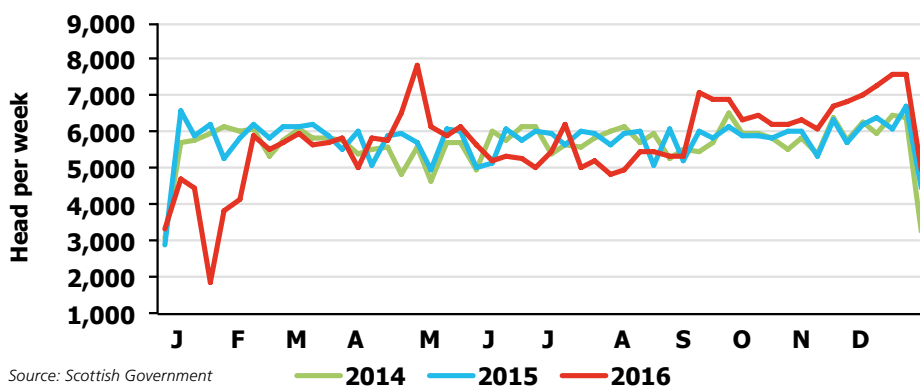
There continued to be little interest in slaughtering sows in Scotland. Fewer than 230 sows and boars were slaughtered at Scottish abattoirs in 2016. This was down from 1,700 in 2015 and marked a nine-year low. The majority of Scottish sows were slaughtered in English abattoirs.

The Scottish Government estimated that 12,000 Scottish sows were slaughtered during 2015. This suggests that 10,300 were slaughtered south of the border in 2015.

Prime pig carcase weights increased for the fourth consecutive year. Possible explanations for the 1% increase to 82.2kg in 2016 include rising productivity and growth rates, as well as attempts to boost carcase weights to generate higher revenues from each carcase. The rise came despite higher feed costs, although forward buying may have limited these increases.

Carcase weights exceeded year earlier levels throughout 2016. They were almost 1.5% above year earlier levels during Q1 2016 and again in the final two months of the year.

Seasonal supply of prime pigs to Scottish abattoirs



Source: Scottish Government

Average Carcase Weights

	2014	2015	2016
	kg per head (UK average)		
Clean pigs	80.9	81.3	82.2

Source: Defra

For the remainder of the year, the increases were mostly below 1%.

A 1% increase in the annual average carcase weight meant that prime pigmeat production at Scottish abattoirs fell fractionally in 2016. After factoring in a sharp decline in the sow kill, total pigmeat production volumes fell by just under 1% to approximately 24,550t.

Scottish Red Meat Abattoir Sector

Twenty-four licensed red meat abattoirs operated in Scotland during 2016 and submitted levy returns to QMS, unchanged from 2015. Of this total, 20 sites processed cattle, 19 processed sheep and 14 processed pigs.

During the year, 1.954m animals were processed by Scottish abattoirs, 7% fewer than in 2015. This produced an estimated 218,850t of red meat, down only 0.5% on 2015 due to beef production taking a greater share of the total.

Scottish Abattoir Output

	Number of animals		Volume of meat (t)		Estimated value (£m)	
	2015	2016	2015	2016	2015	2016
Cattle	458,870	471,285	168,920	172,060	665	643
Sheep	1,337,590	1,184,320	27,520	24,020	136	123.5
Pigs	303,480	298,570	24,760	24,540	23.5	25
Skins & hides	n/a	n/a	n/a	n/a	30	27

Sources: QMS Processor Survey; Scottish Government

It is estimated that the total turnover of the primary processing sector during 2016 was £818.5m. Compared with the previous year, this was a decline of £36m, or 4%. However, employment is estimated to have grown slightly in 2016 to reach approximately 2,900. Over 40% of employees are non-UK EU nationals.

Although cattle throughput increased, wholesale prices are estimated to have fallen by around 5% in 2016, in part down to an increase in the proportion of cows in the slaughter

mix, resulting in an estimated fall in cattle processing turnover of 3% to £643m.

Wholesale sheepmeat prices are estimated to have recovered in 2016. However, a significant fall in throughput and lower carcass weights are estimated to have led to a 9% fall in processor output in 2016, slipping to £123.5m.

On average, wholesale pork prices are estimated to have been similar to 2015. Although production fell, a greater

proportion of the kill is estimated to have taken place outwith contract kill abattoirs, boosting turnover. Nevertheless, the share of slaughter at contract kill abattoirs – where the revenue is derived from a slaughter fee paid by the owner of the animal rather than from selling the carcass meat – remained high. Sales of skins and hides were worth an estimated £27m to Scottish red meat processors in 2016. This was a significant annual decrease of around 10%, driven by lower values for both skins and hides.

Scottish Abattoir Sector Scale

	Cattle	Sheep	Pigs
Abattoirs killing stock	20	19	14
Proportion of kill in 5 largest abattoirs (%)	70.8	89.5	93.8
Proportion of kill in 10 smallest abattoirs (%)	4.7	2.3	8.2

Source: QMS levy returns

The cattle processing sector is more evenly spread, in terms of capacity, than the sheep or pig sectors. There are a number of medium-sized plants working with cattle, whereas sheep and pig processors tend to be either very small or very large.

During 2016, the five largest cattle

processing abattoirs saw their share of throughput fall back by 0.7 percentage points, whereas it continued to rise in sheep and pig processing. The five largest sheep plants added 0.7 percentage points to their share, while it advanced by 0.5 percentage points in the pig sector.

Having fallen in 2015, the share of the kill in the 10 smallest abattoirs rose by 0.6 percentage points in cattle processing and by 0.1 percentage points in sheep. However, in the pig sector it rose because one very small plant stopped handling pigs.

Distribution of Scottish Red Meat Sales in 2016 (based on a sample of processors)

	Scotland		Rest of UK		Exports	
	Value (£m)	% by value	Value (£m)	% by value	Value (£m)	% by value
Beef	154	25	420	68.5	36.5	6
Sheepmeat	10.5	9	75	65	30.5	26
Pigmeat	21.5	>89	2.5	<11	<1	<1
Total red meat	186	25	497.5	66	67	9
Fifth-quarter	7	17	27	67	6.5	16
Skins/hides	13.5	49.5	11	41	2.5	9.5

Totals may not sum to 100% due to rounding.

Source: QMS Processor Survey

Distribution of Red Meat Sales by Market Outlet in 2016 (based on a sample of processors)

	Beef	Sheepmeat	Pigmeat	Fifth-quarter
	% by value			
Multiple retailers	56.5	60	38	3
Independent retailers	2.5	2	28	26
Retail wholesalers	10	32	10	4
Food manufacturers	24	3	8	29
Food service & catering suppliers	6.5	3	16	38

Totals may not sum to 100% due to rounding.

Source: QMS Processor Survey

England and Wales remained the most common first point of sale for Scottish processors in 2016, and it is estimated that more than two-thirds of all revenues were generated there.

The Scottish processing sector continued to send less of its produce overseas than the UK as a whole. Higher beef producer prices in Scotland than in the rest of the UK make it harder for Scottish processors to compete in price-sensitive export markets. This means that Scottish beef exports tend to be of higher value product. Sheepmeat exports also tend to be of higher value cuts, and sales fell back in 2016 despite a weaker sterling. Pigmeat exports are estimated to have remained at a negligible level.

Fifth-quarter product continued to play an important part for cattle and sheep processors, helping them to achieve better carcass balance. These products are much more likely to be sold to independent retailers, food manufacturers and the foodservice sector than into the multiple retailers. They also make up a significant proportion of exports. Fifth-quarter exports consisted mainly of beef in 2016.

Multiple retailers continued their domination of the sales profile of Scottish red meat processors. Food manufacturers were also significant customers for those processing beef, while exports of sheepmeat tended to be sold to wholesalers on the Continent.

The low share of pigmeat sales to multiple retailers may reflect responses to the survey.

Overseas Sales of Red Meat in 2016

During 2016, Scotland is estimated to have sold £67.2m of red meat and a further £6.7m worth of offal to customers outside the UK. Beef sales are estimated at £36.5m and lamb sales at £30.7m. Total exports sales revenues of £73.9m were down by 3.5% on 2015.

France maintained its position as the principal destination for overseas sales of Scottish red meat, accounting for 45% of sales revenues. However, this fell from 49% in 2015. In value terms, it is estimated that France bought around 24% of the beef exported by Scottish processors, 25% of the offal and 74% of the lamb. Looking at the average price per tonne exported, France was a below average market for beef, but well above average for lamb and offal.

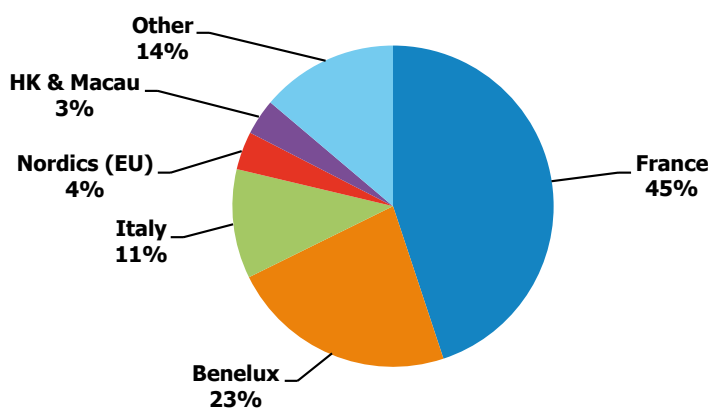
Belgium, the Netherlands and Luxembourg (Benelux) are also important markets for the Scottish industry, accounting for nearly a quarter of 2016 sales. It was the leading beef market, accounting for 30% of sales revenues, and the second largest lamb market, with 19% of sales.

Italy was the third-largest beef market, on nearly 20%, but despite also being the third-largest destination for lamb, bought only a small proportion.

Non-EU markets are estimated to have accounted for just over 5% of total export revenues in 2016, up from 4% in the previous year. The vast majority of these shipments were of fifth-quarter product to Hong Kong and Macau. However, some beef was also delivered into these markets, while small volumes of beef and lamb were sold to buyers in Switzerland and Norway.

A key function of exports is to help Scottish processors balance the carcass by selling certain products overseas which they may not be able to sell easily in the home market. For beef, France and Holland offered outlets for lower value product, while Belgium and Luxembourg, Hong Kong and Macau, and Switzerland and Norway were high value destinations. For lamb, France and the Nordics were premium markets while Benelux, Poland and the Baltics, and Germany and Austria were buyers of lower value cuts.

Scottish red meat exports in 2016



Source: Survey of Processors

Prices

General Economic Factors

Consumer Prices Index (CPI)

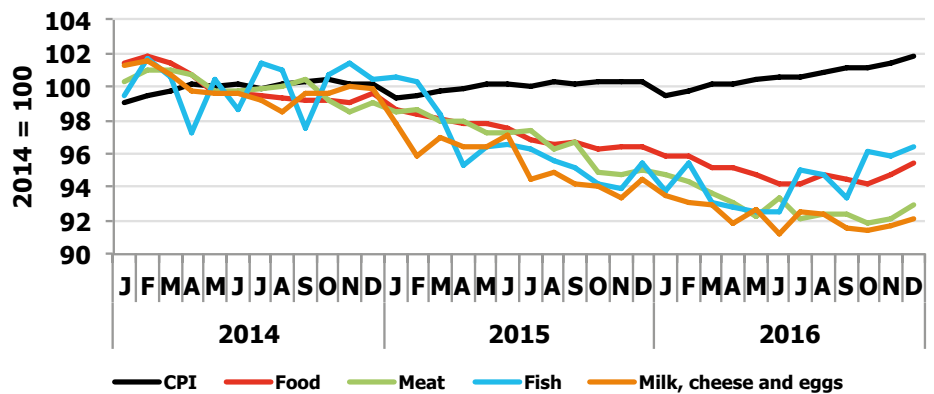
After a year of zero inflation in 2015, 2016 saw a return of inflationary pressures to the UK economy. It was a year of two halves, with inflation rates remaining low at 0.3–0.5% during the first half of the year, before the pressures built in the second half of the year and inflation accelerated to 1.6% in December. A growing economy and firm consumer confidence meant that firms felt able to pass rising input costs on to their output prices. Rising input costs were driven by a recovery in global commodity prices and the significant weakening of the sterling exchange rate.

Having risen at a faster pace than headline CPI in six out of the seven years to 2013, 2016 was the third successive year of food price deflation. Although farmgate and import prices for many agricultural products began to recover after declining in 2015, heavy competition amongst UK retailers maintained the downwards pressure on retail prices.

Food prices showed a relatively stable trend in 2016, easing marginally in the summer months before picking up again to finish the year where they had begun it. Since retail prices had trended lower through 2015, a more stable 2016 meant that the year-on-year rate of food price deflation began 2016 at around -3%, fell to -2% in the autumn and then ended the year at -1% in December.

Eight of the nine categories in the CPI food basket showed deflation in 2016, with fruit being the exception. Of the eight to show deflation, five reported a slower rate than in 2015. Meat prices fell at a faster pace.

Consumer Prices Index



Source: ONS (2017)

Annual CPI Inflation (%)			
	2014	2015	2016
CPI	1.5	0.0	0.7
Food	-0.2	-2.8	-2.4
Meat	0.6	-3.1	-4.1
Fish	2.6	-3.5	-2.3
Milk, cheese & eggs	0.5	-4.4	-3.4
Bread & cereals	-0.6	-2.8	-1.6
Fruit	0.3	-0.2	1.1
Vegetables	-4.7	-4.0	-4.1

Source: ONS (2017)

Meat prices fell by an average of 4.1% in 2016, falling by 4–5% until September, before rising to -3% in the autumn and ending 2016 at -2.3%. Within the meat category, the fastest rates of deflation, of around -6%, were for 'poultry' and 'dried, salted or smoked meat'. 'Pork' prices also fell by more than the average, down 5.3%. However, 'beef and veal' fell by a below average -2.7% and 'lamb and goat' by -1.7%. Meanwhile, 'edible offal' and 'other meat preparations' showed modest deflation of around -0.5%.

Exchange Rate Movements

2016 saw a significant rebalancing of the value of sterling. Following the UK's vote to leave the EU in late June, sterling fell sharply against a range of currencies, reflecting a perception that the UK would be less open to trade and investment in the future. It also raised the likelihood of UK interest rates remaining lower for longer.

After strengthening relative to the euro in 2014 and 2015, sterling fell by 11.5% in 2016. On average, the euro bought 82p during 2016, compared with 72.5p in 2015 and 80.5p in 2014.

During the first half of 2016, a euro bought around 76–79p. Fluctuations were mainly driven by changes in opinion polling over the outcome of the EU referendum. Over this period, sterling was generally around 5–10% weaker than a year earlier. Following the EU referendum, the euro traded at 84–89p. This meant that sterling spent the second half of the year trading 15–20% weaker than 12 months before.

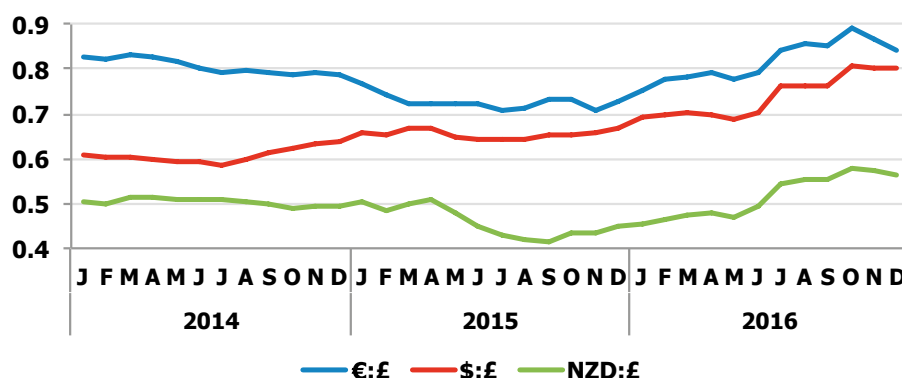
The weaker sterling against the euro supported UK exporters after a couple of challenging years. A weaker sterling benefited exporters as an unchanged euro price converted into a higher sterling revenue. This would have enabled them to lower their euro prices to gain market share without having to accept a lower sterling price in return.

As a consequence, export margins are likely to have widened.

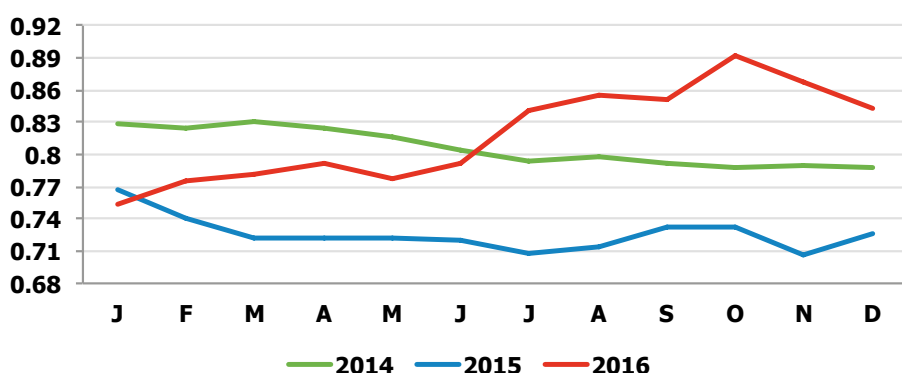
The other benefit of a weaker sterling comes from the import side. A weaker sterling means that it is more expensive to import meat from the continent, underpinning demand for home-produced product in price-sensitive markets – most likely in the manufacturing trade.

If export margins are higher while prices rise in the manufacturing trade, then the likely result is increased revenues on each carcase. This may then pass through into higher livestock prices.

Exchange rates 2014–16



Exchange rate (£:£)



During 2015, sterling had firmed to a six-year high against the New Zealand dollar (NZD). However, this reversed in 2016, placing upwards pressure on the price of lamb imported from New Zealand.

On average, sterling was 13% weaker against the NZD in 2016 than in the previous year. The NZD averaged 51p in 2016 compared with less than 46p in 2015. Prior to the EU referendum, the NZD was worth around 46–47p, before rising sharply to 55–58p in the second half of the year. Three interest rate cuts in New Zealand had little impact on the exchange rate.

The exchange rate between sterling and the US dollar (USD) affects the prices of globally traded commodities such as energy and protein feed, which tend to be denominated in US dollars. A 13% weakening in sterling against the USD in 2016 reinforced the recovery in global commodity prices, raising input costs.

Price Movements

Producer Prices

Cattle

Annual average farmgate prime cattle prices fell back for a third consecutive year in 2016. At 351p/kg dwt, the average steer price fell 3% short of its 2015 level. In addition, it slipped to a five-year low and was 13% below the 2013 peak.

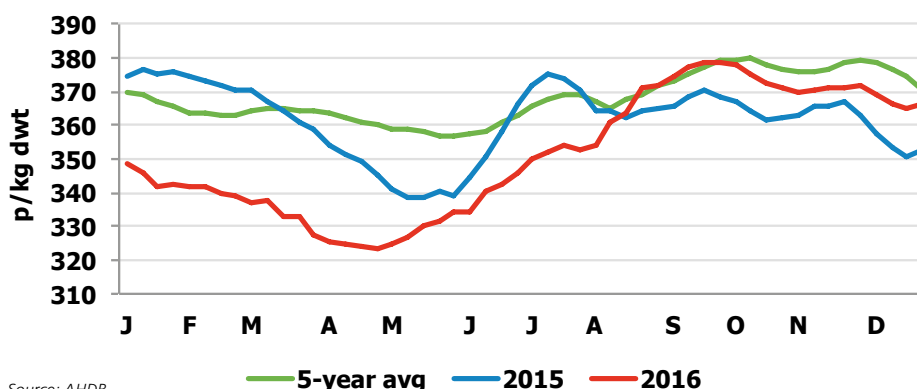
During the first third of 2016, there was significant downwards pressure on the cattle market. In part, this was a legacy of a weaker than expected festive period, which resulted in additional stocks of beef being carried forward into 2016. In addition, the higher calf registrations of spring 2014 raised supplies. However, the market turned as summer approached, rising steadily from May. After reaching a peak in late September/early October, prices then eased towards the year-end, but more slowly than in the previous year. During the second half of 2016, the market was underpinned by rising beef sales at multiple retailers, assisted by competitive retail prices.

One factor placing downwards pressure on average prices in 2016 will have been pricing penalties for heavy carcasses. Although weights fell relative to 2015, a significant proportion of prime cattle continued to exceed the level required to meet the product specifications of the multiple retailers. Carcase weight data suggests that these penalties will have been more common during the first half of the year.

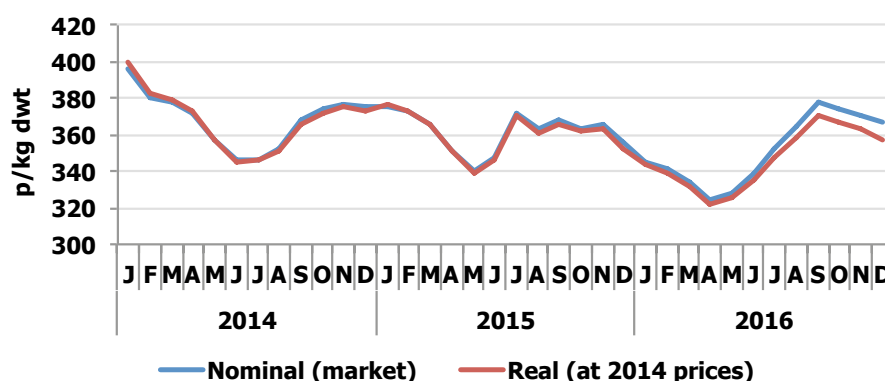
Deadweight prime cattle prices averaged around 6.5% higher in Scotland than they did in England & Wales in 2016. This was up marginally from a premium of just under 6% in 2015.

At 230p/kg dwt, the average cull cow price fell 4.5% below its 2015 level. Scottish abattoirs paid an average of 15% more for cull cows than their counterparts in England & Wales, unchanged from 2015.

Scottish deadweight steer price



Scottish deadweight steer price



Scottish abattoirs paid an average of £1,359 for a steer carcase in 2016. This was down by around 4% from the previous two years. For a cow, the average carcase price fell by 6.5% to £783.

Producer prices fell back in real terms for a third year in 2016¹. In Scotland, real terms prices fell by 4%, while they decreased by 4.5% at the GB level.



¹ Real prices: Where inflation is greater than zero, the price that the producer receives is lower in real terms than the market (nominal) price. This is because the sales proceeds have less purchasing power in the wider economy due to the rise in the general level of prices. For example, a sales price of 350p/kg in period 2 would be equivalent to a price of 343p/kg in period 1 if the rate of inflation was 2%; with inflation at 4%, a price of 350p/kg in period 2 would be equivalent to just 336.5p/kg in period 1. The inflation rate used is the RPIJ – a measure of retail price inflation published by the ONS.

Sheep

For a second year, prime sheep producer prices followed a less traditional seasonal pattern in 2016. Similar to 2015, prices rose more slowly than usual in the run-up to Easter, and the new season peak was not as pronounced as in the past. However, prices did exceed 2015 levels during May and June, with slow lamb growth leading to a tight supply of new season lambs. One unusual feature of the market was that prices held up over the summer months rather than taking their traditional tumble once supplies begin to pick up in July and August. In addition to a slow arrival of lambs on the market, prices were boosted by the sharp weakening in the sterling exchange rate following the EU referendum, which supported export margins and made imports less competitive. Once the Eid al-Adha festival had passed in mid-September, prices did ease back, slipping to their annual low in October, before edging higher in November as demand firmed in advance of the festive season.

The influence of festivals on the lamb trade was once again in evidence during 2016. With lamb a prominent ingredient of meals at Easter across Europe, prime sheep prices built on firmer demand from both the home and overseas markets. Then in June and July, prices were influenced by the Islamic festival of Ramadan, supporting prices at the beginning of June when Ramadan commenced, and then again in early July in advance of the Eid al-Fitr festival which ends Ramadan. In early September, a further Islamic festival – Eid al-Adha – saw lamb prices increase despite a significant rise in marketings. Ahead of Christmas and New Year, there was some evidence of a rise in demand for lamb, with prices reaching a seasonal peak in late November/early December. The annual peak in exports to southern Europe will also have helped underpin the market in late 2016.

In contrast to 2015, producer prices spent much of 2016 above year-earlier levels. As a consequence, the annual average price for an SQQ lamb (weighing 25.5 to 45.5kg lwt) at Scottish auctions rose by 6% to 178p/

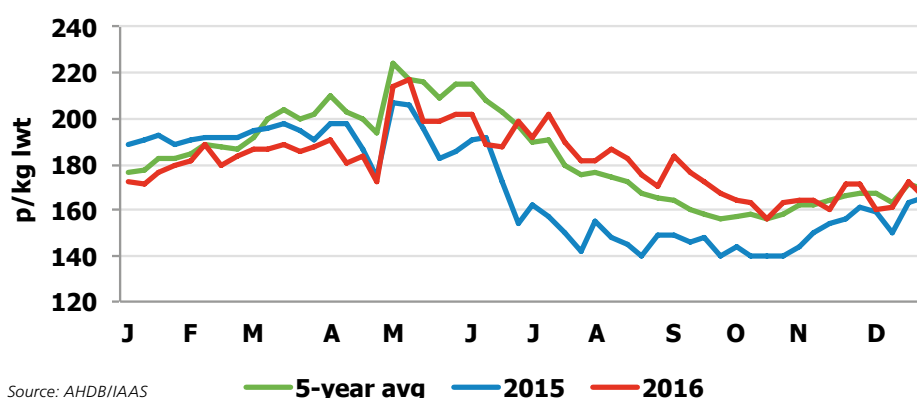
kg lwt. Meanwhile, the annual average price at GB price reporting abattoirs increased by 8% to 406p/kg dwt. A weaker sterling will have been one of the key contributing factors.

Scottish prime sheep auction prices averaged 2% below the England and Wales average.

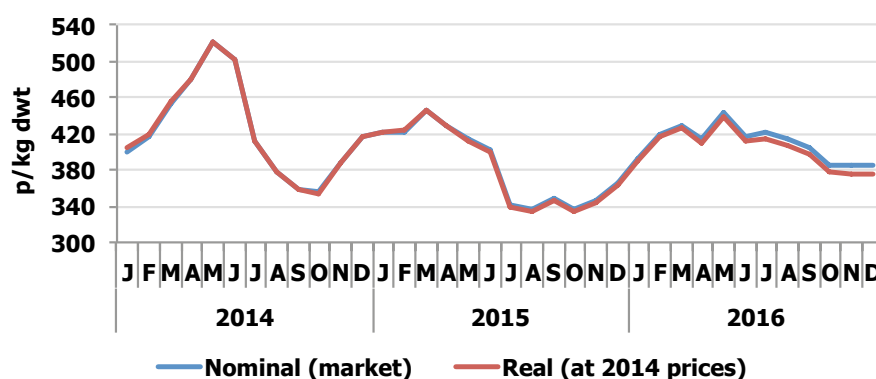
At Scottish auctions, the annual average cull ewe price fell by 6% to £57.22/head in 2016. This was 5% below the average selling price in England and Wales. However, the differential had been 7.5% in 2015.

When adjusted for an annual retail price inflation rate of 1%, real-terms producer prices rose by 7% during 2016, but remained slightly lower than in 2013 or 2014.

Scottish prime lamb auction price



GB deadweight lamb price



Pigs

Prime pig producer prices followed their historic seasonal pattern during the early weeks of 2016, slipping back amidst the weak demand environment of early in the year. As slaughter numbers and carcase weights fell seasonally, the declines began to slow in late February and then the market steadied in March as Easter approached. Prices then rose steadily from late-March until the year-end, reflecting a tightly supplied market relative to demand.

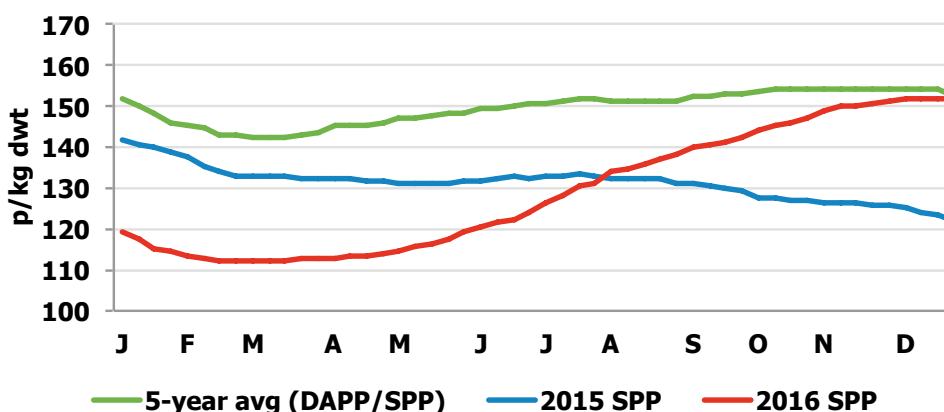
The pig market recovered sharply in the final three-quarters of 2016 for a number of reasons. Although retail sales of pork continued to slide, processed pigmeat products did better. In addition, a weakening of sterling led to a rebalancing of prices in the supply chain, with exports looking more profitable while imports became more expensive. Furthermore, the entire European pig market firmed due to rapidly rising sales to China. On the domestic supply side, after a number of years of consistently increasing production, slaughterings fell back in the second half of 2016 due to the lagged impact of some herd consolidation which had taken place amidst the challenging circumstances of 2015.

During 2016, the average price within the SPP¹ sample was 129p/kg. This was down by nearly 2% on 2015. Higher carcase weights meant that the average price per carcase fell more slowly, down 0.4% at £107.

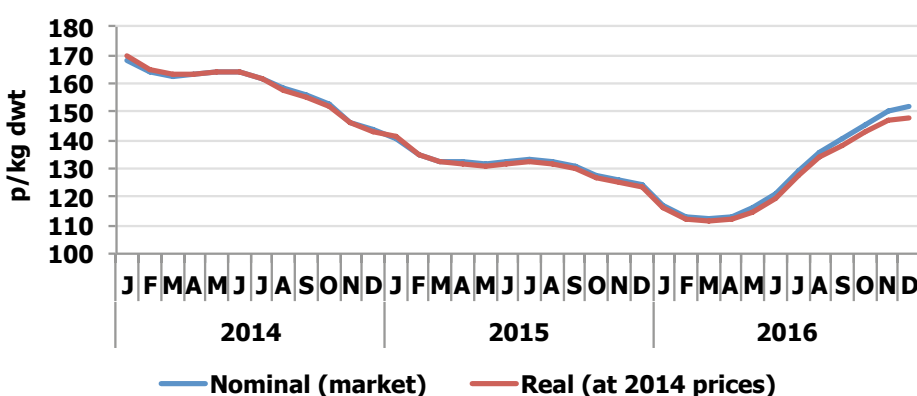
Real-terms producer prices averaged 3% lower than a year earlier in 2016.

1. The 'Standard Pig Price' (SPP) is the price paid by a sample of abattoirs across Great Britain for a 'standard pig'. A standard pig is one that does not receive a premium based on a specific characteristic, such as its breed or being farmed organically. Bonus payments for meeting specific contract targets are also excluded. The only premia included are, therefore, those based on weight and carcase grade.

GB producer price for pigs (SPP)



GB producer price for pigs (DAPP)



Farm Assurance Premium at Scottish Auctions

Although individual sales may differ, there is a general pattern throughout the year whereby the prices paid at Scottish auctions for Scotch Farm Assured cattle and sheep will be higher than for Non-Farm Assured stock. Each year, the premium for

cattle tends to be larger than for sheep, averaging around 15% and 5%, respectively.

In 2016, the average premium for cattle widened to 17%, while it rose marginally for sheep, holding at just over 6%.

Farm Assurance Premium for Prime Cattle at Scottish Auctions

	Scotch Farm Assured avg selling price p/kg lwt	Non-Farm Assured avg selling price p/kg lwt	FA premium (p/kg lwt)	FA premium (%)
2014	201.0	172.3	28.7p	16.6%
2015	200.3	174.1	26.2p	15.0%
2016	195.0	166.4	28.6p	17.2%

Source: AHDB/IAAS

Farm Assurance Premium for Prime Sheep at Scottish Auctions

	Scotch Farm Assured avg selling price p/kg lwt	Non-Farm Assured avg selling price p/kg lwt	FA premium (p/kg lwt)	FA premium (%)
2014	184.9	176.6	8.4	4.7%
2015	168.1	158.3	9.8	6.2%
2016	179.3	168.7	10.6	6.3%

Source: AHDB/IAAS





Producer Input Costs

2016 was the third consecutive year of declining farm input costs, leaving them at their lowest average level since 2010. Prices tended to drift slightly lower in the first half of the year before rising towards the year-end as a weaker sterling compounded the impact of a recovery in global commodity prices.

Energy costs fell by around a fifth during the first five months of the year, but by November, a recovery had moved them ahead of January levels. While electricity and gas prices were relatively stable during the year, it was fuel costs, and hence the oil price, that drove the overall energy cost trend. Despite ending 2016 higher than they had begun it, energy costs averaged 4% lower than in 2015.

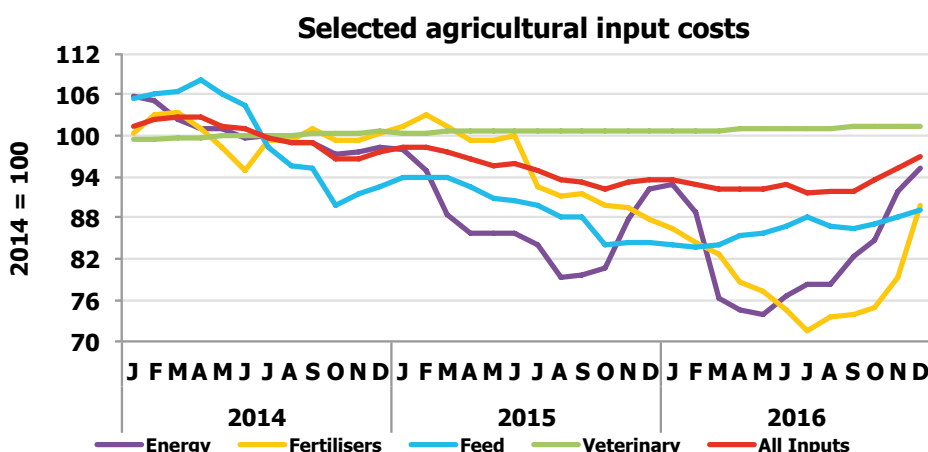
The fertiliser market followed a similar trend to energy costs in 2016, falling sharply in the first half of the year before recovering in the second half. This downwards pressure was linked to strong global inventory levels for nitrogen, phosphate and potash, but the second half of 2016 saw a more balanced market while a weaker sterling pushed up prices in sterling terms.

Feed costs trended slightly higher through 2016 but averaged lower than in the previous year. Although the global market for grains and oilseeds remained in surplus, there was some upwards pressure on prices from strong feed demand in the UK and a weaker sterling. Flooding led to poor harvests of soya beans in Argentina and wheat in France, pushing up feed prices during the summer months.

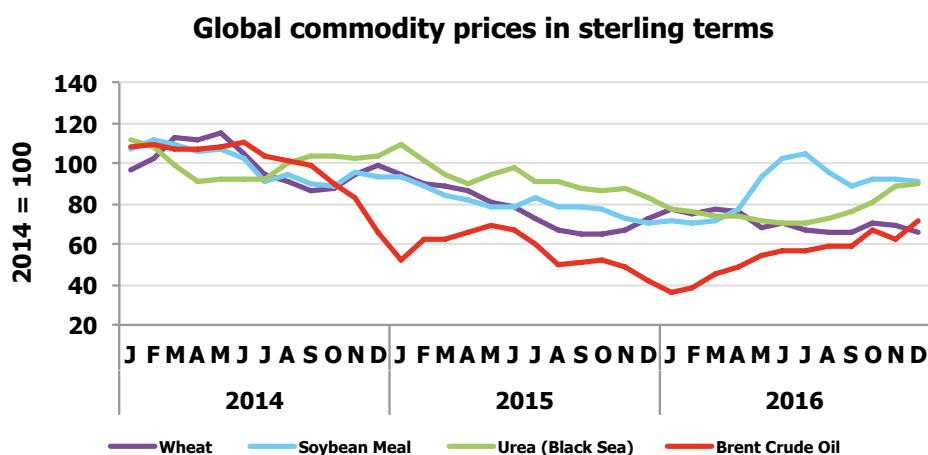
Forward buying and the time lag for rising raw material costs to pass into wholesale prices may have shielded livestock producers from rising input costs during the second half of 2016.

Index of Producer Input Costs				
	2014	2015	2016	Annual change 2015:2016
	2010=100			%
Energy	119.0	101.2	97.1	-4.1
Fertilisers	106.5	101.5	83.2	-18.0
Feedstuffs	120.7	108.1	104.2	-3.6
Veterinary	107.0	107.7	108.1	+0.4
Total Inputs	112.1	106.8	104.4	-2.3

Defra (2017a)



Source: Defra (2017a)



Sources: World Bank (2017)

Retail Prices

The Retail Prices Index (RPI) breaks food prices down into more detailed categories than the Consumer Prices Index (CPI). Food prices continued to decline in 2016. Within the RPI food basket, only 'oils and fats' and fruit were more expensive, on average to buy than in 2015 while meat prices declined more significantly than in 2015. Intense competition between retailers maintained the downwards pressure on food prices.

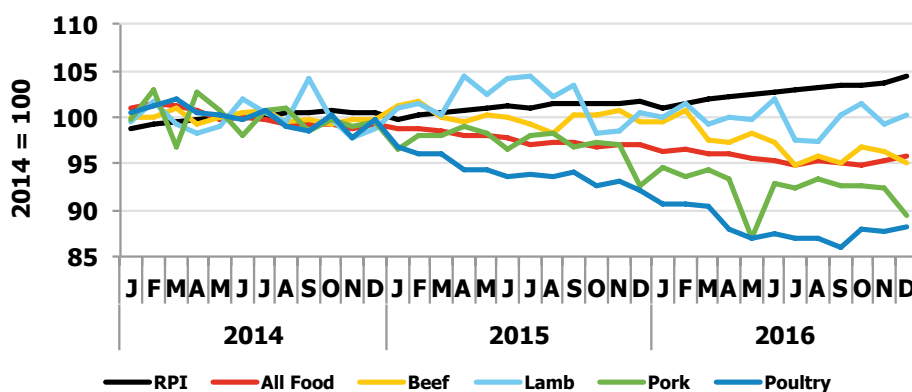
Beef retail prices broke away from their stable trend that had been observed from the autumn of 2013 until the end of 2015, following farmgate prices lower through the first half of 2016. Retail prices then stabilised in the second half of the year, despite the recovery in farmgate prices. Lower prices boosted retail sales of beef in the final quarter of 2016.

Lamb retail prices continued to fluctuate from month-to-month in 2016, but broadly lacked direction. Lamb prices have been on a relatively stable trend since mid-2013. It was a similar case for both home-produced and imported lamb, though the latter did see some discounting during the third quarter.

Pork retail prices were more stable from month to month than in previous years. However, sharp discounts were still applied in May and December. Despite falling retail prices, pork sales continued to disappoint and prices trended lower through the year, in contrast to farmgate values. Bacon retail prices also trended lower in 2016.

Competing proteins, such as poultry, fish, cheese and eggs, all averaged cheaper in 2016 than in the previous year. Consequently, lower red meat retail prices did not result in a significant improvement in their price competitiveness.

Retail Prices Index



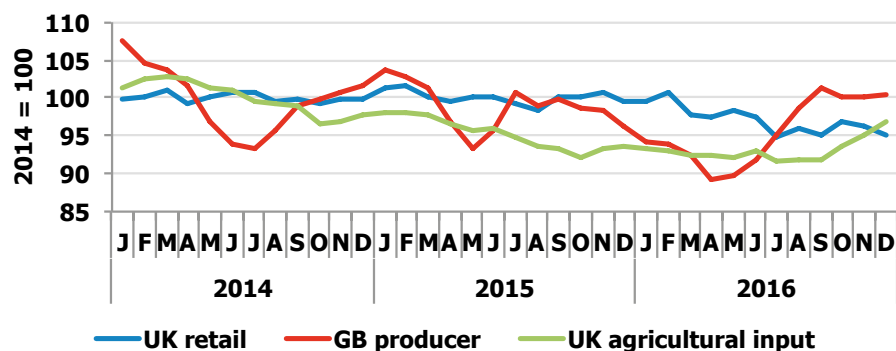
Annual RPI Inflation (%)

	2014	2015	2016
RPI	2.4	1.0	1.8
Food	0.0	-2.3	-2.2
Beef	2.7	0.1	-3.0
Lamb	1.1	1.8	-1.9
Pork	-1.2	-2.8	-4.9
Bacon	-0.4	-4.3	-7.3
Poultry	-0.4	-5.8	-6.4
Fish	3.0	-3.0	-2.0

Source: ONS (2017)

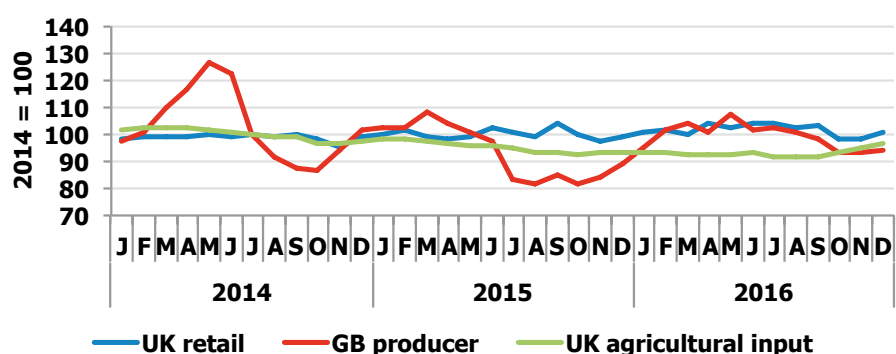


Index of input costs and producer and retail prices for beef



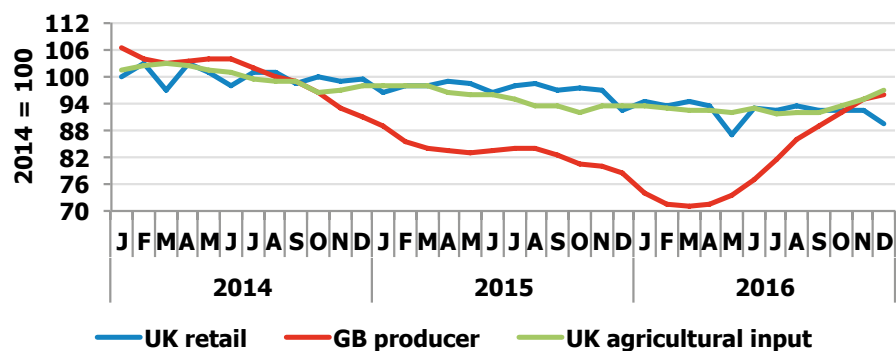
Sources: AHDB; Defra(2017a); ONS(2017)

Index of input costs and producer and retail prices for lamb



Sources: AHDB; Defra(2017a); ONS(2017)

Index of input costs and producer and retail prices for pork



Sources: AHDB; Defra(2017a); ONS(2017)

Consumption and Use

The total volume of beef available for consumption in the UK is estimated to have risen by 1% to reach a 29-year high of 1.104m tonnes in 2016. Domestic production rose 4% (33,600t), but this was partially offset by lower imports (-11,700t) and higher exports (11,900t)¹. Imported beef accounted for 30% of total supply, down from 31% in 2015. Meanwhile, exports were equivalent to 13% of UK beef production, up from 12% in 2015.

After surging in 2015, the total volume of sheepmeat available for consumption fell by 3% in 2016 to 323,500t. Domestic production contracted (-9,900t) while imports and exports both edged higher (by 500t and 600t). Imported sheepmeat accounted for 35.5% of annual supplies compared with 34.5% in the previous year, but remained below the 10-year average. Exports accounted for 30.5% of production in 2016, one percentage point higher than in 2015.

In 2016, the total volume of pigmeat available for consumption is estimated to have grown by 5% to a 9-year high of 1.45m tonnes. Domestic production rose by 3% (25,900t) while imports rose by 8% (59,600t) and exports by 9% (18,900t). Imports accounted for an estimated 55% of supplies, up from 53.5% in 2015, while the proportion of domestic production exported rose similarly, reaching 26.5%.

Combined beef, lamb, pork and poultry supplies grew by more than 3% in 2016 to 4.95m tonnes. Red meat supplies increased by 2.5% to 2.88m, but with poultry growing by 4.5%, red meat took a slightly smaller 58% share of the combined total.

Retail Consumption

It is estimated that the volume of prime beef cuts (e.g. steaks, roasts and mince) sold by multiple and independent retailers to UK households in the 52 weeks to

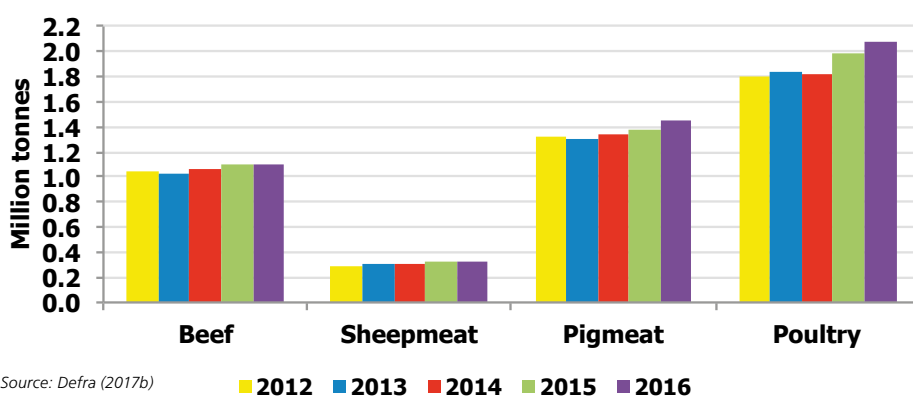
January 1 2017, totalled 297,900t. This was up by 2.5% year-on-year. This estimate is based on GB data from Kantar Worldpanel, plus an estimate for Northern Ireland. In Scotland, consumption rose by 5.5% to 29,600t. Given that total UK beef supplies rose by less than 1%, a faster rate of retail sales growth indicates that either volumes used in food manufacturing and foodservice fell back or cold store stocks were run down. Kantar Worldpanel data for processed beef products, such as ready meals, burgers and steak pies, points to a small increase in 2016.

At an estimated 77,000t during the 52 weeks to January 1, 2017, UK retail sales of lamb fell by around 4.5% year-on-year. Scottish consumption volumes are estimated to have fallen by 1%, slipping to 4,000t. Since UK retail sales fell faster than total supply, it suggests increased use elsewhere and/or a higher carry-over of product into 2017. Kantar Worldpanel figures indicate a sharp increase in sales of lamb-based ready meals during 2016.

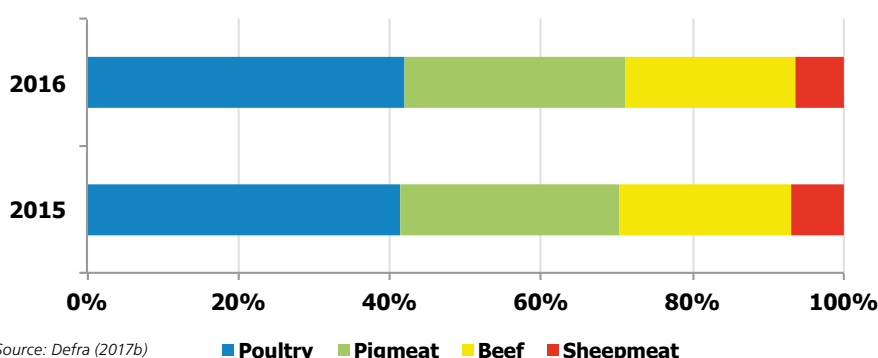
During the 52 weeks to January 1 2017, it is estimated that 169,100t of pork was retailed across the UK. Compared to a year earlier, this was a decline of just over 2.5%. In Scotland, consumption is estimated to have fallen by 5.5% to 10,750t. Kantar Worldpanel data suggests slightly higher sales of numerous processed pigmeat products, including bacon, pork pies and sausage rolls.

According to Kantar Worldpanel, bacon sales in the UK are generally higher than those of pork. If this is factored in, retail sales of fresh and frozen cuts of pigmeat could be closer to 30% of total pigmeat supply.

Annual UK meat supplies



Annual share of UK meat supplies



¹ Import and export volumes include processed products and live animals, and are converted from product weight into carcase weight equivalent.

Per Capita Supplies

On a per-head-of-population basis, the volume of red meat plus poultry available for consumption in the UK is estimated to have risen by 1.8kg in 2016 to 75.4kg. Meat supply growth outpaced an estimated population increase. In Scotland, the estimated increase was 2.2kg.

Following across-the-board increases in 2015, per capita supply is estimated to have stabilised for beef, fallen back for sheepmeat, but risen strongly for pigmeat and poultry in 2016.

In Scotland, evidence from Kantar Worldpanel and Defra's annual Household Food Survey indicates that whereas beef consumption per person is higher than in the rest of the UK, it is much lower for sheepmeat and pigmeat.

	Retail sales volume (t)	Total supply (t)	Retail sales as a proportion of total meat supply
Beef	297,900	1,103,900	27.0%
Lamb	77,000	323,500	23.8%
Pork	169,100	1,449,900	11.7%

Sources: QMS calculations based on data from Defra (2017b) and Kantar Worldpanel)

Per Capita Supplies

Kg per person	Beef	Sheepmeat	Pigmeat	Poultry	Total meat
2015 UK	16.8	5.1	21.3	30.5	73.6
2016 UK	16.8	4.9	22.1	31.6	75.4
2015 Scotland	20.4	2.6	18.3	27.0	68.4
2016 Scotland	20.8	2.6	18.8	28.0	70.2

Source: QMS calculations; data from DAERA, Defra, HCC, Kantar Worldpanel, ONS, and the Scottish Government

Self-sufficiency

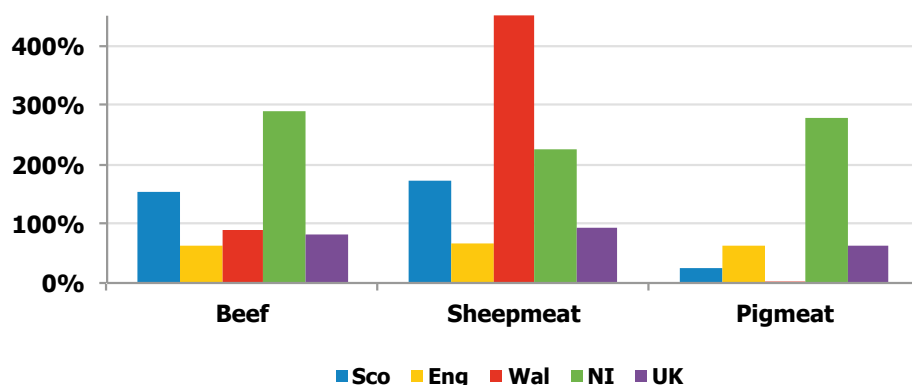
It is estimated that Scottish abattoir beef and sheepmeat production exceeded the volume of beef and sheepmeat available for consumption in Scotland during 2016, whereas net imports of pigmeat were required to satisfy consumer demand. While abattoir beef production was estimated at 153% of potential consumption, and sheepmeat production at 172%, pigmeat was estimated to have covered only 24% of national supply.

At over 82.5%, UK beef production increased its estimated share of available UK supplies by more than two percentage points during 2016. Meanwhile, sheepmeat production fell marginally to 92.5%, and pigmeat production returned to 61% of potential consumption, after supplying 62% in 2015.

Seasonal shifts in supply and demand lead to considerable variation in self-sufficiency for beef, lamb and pork, and for different cuts, during the calendar year. For example, March and April account for around 15% of annual sheepmeat production, but 25% of consumption, and, over this period, sales of lamb leg roasts are often four times their normal volume.

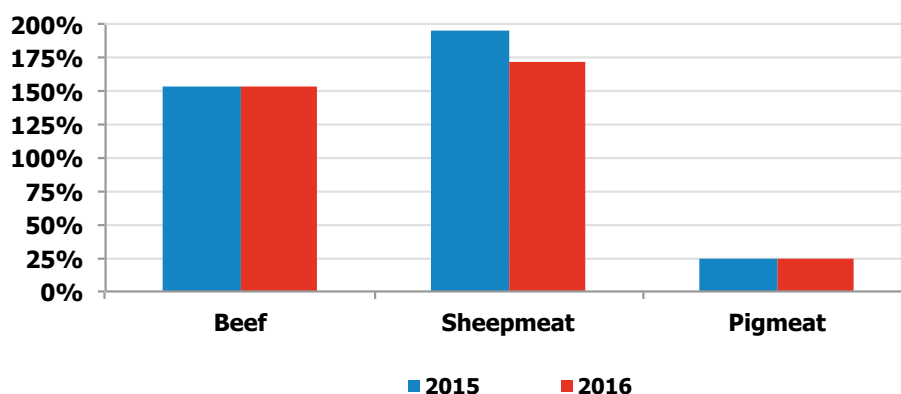
During 2016, Scottish self-sufficiency in beef is estimated to have fallen slightly, but remained above 150%, as consumption growth out-paced the rise in production.

Estimated self-sufficiency in 2016



Source: QMS calculations; data from DAERA, Defra, HCC, Kantar Worldpanel, ONS, and the Scottish Government

Estimated self-sufficiency in Scotland



Source: QMS calculations; data from DAERA, Defra, HCC, Kantar Worldpanel, ONS, and the Scottish Government

For pigmeat, self-sufficiency fell slightly as imports rose. A sharp decline for sheepmeat was mostly down to lower production at Scottish abattoirs, but it did remain above 170%.

A rising Scottish population had a marginal downwards impact on self-sufficiency.

UK Overseas Trade

Detailed import and export data for red meat sales in and out of Scotland are unavailable separately from UK figures. Consequently, this section summarises HMRC trade data for the UK as a whole and reflects the trade environment in which Scottish producers and processors operate.

Total red meat imports are estimated to have risen by 5% in 2016 to 970,800t. Meanwhile, supported by favourable currency movements, exports rebounded in 2016, rising by 7.5% to 406,200t.

Imports

Beef

Beef imports to the UK fell for a second year in 2016, down 1.5% to 243,550t. Declines in the first and third quarters more than offset increases seen during Q2 and Q4.

Closer examination of the figures shows a rebalancing of imports. Whereas fresh imports declined by 6% to 176,300t, frozen beef shipments rose by a tenth to 67,250t.

Imports from EU countries fell fractionally in 2016, down 0.1% at 222,200t. This was 91% of total imports, up from 90% in 2015. The average value per tonne imported edged 1% higher to £3,700/t.

Fifty-three percent of imports from the EU were of fresh boneless cuts of beef, up marginally from 52.5% in 2015. Meanwhile, frozen boneless cuts raised their share from 22% in 2015 to 24.5% in 2016, but fresh carcasses and half-carcasses slipped by a percentage point to 14.5%, and fresh bone-in cuts from 8% to 6%.

Deliveries from Ireland edged 0.3% higher to 170,600t in 2016. Of this total, 130,600t (76.5%) was fresh beef – a year-on-year decline of 2.5% – while frozen shipments rose 12% to 40,000t. Ireland's share of the UK's beef imports returned to 70%, having slipped below 69% in 2015. Imports from Poland and Holland edged higher in 2016, but shipments from France, Germany, Spain, Italy and Belgium fell.

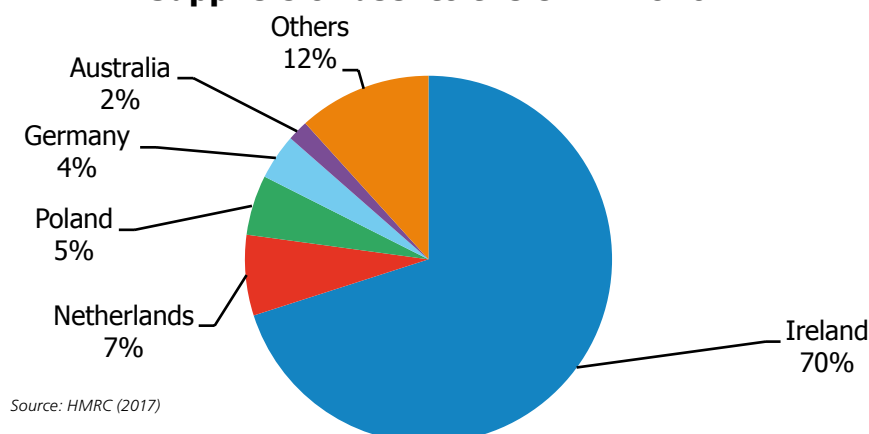
UK beef imports



Source: HMRC (2017)

Imports of beef from non-EU countries fell significantly for a third consecutive year. During 2016, deliveries decreased by 14% to 21,350t. Although imports from Brazil rose by 8% to 4,100t, trade with Uruguay, Namibia, Botswana, Australia and New Zealand contracted.

Suppliers of beef to the UK in 2016



Source: HMRC (2017)

Sheepmeat

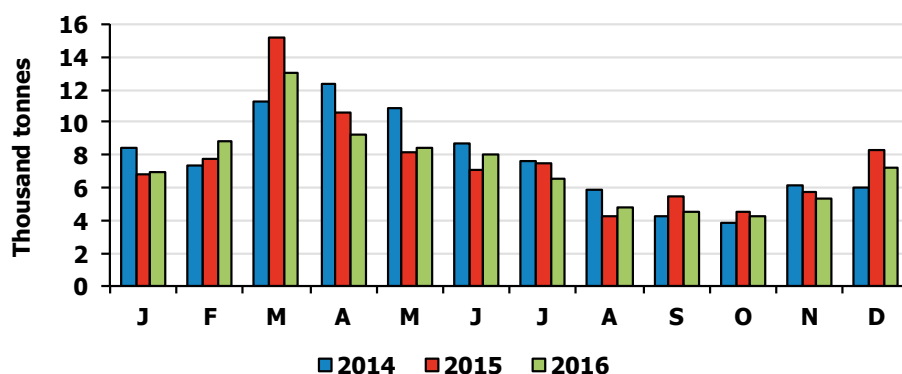
UK sheepmeat imports fell for the third successive year in 2016, down 4.5% at 87,450t. Deliveries were lower than 12 months before in each quarter of the year.

Spring is the peak importing period for the UK, as domestic product is less readily available and consumers like to buy leg roasts. Kantar Worldpanel data indicates that retail consumption of leg roasts in the four weeks to 27 March 2016 totalled 8,200t. If a leg roast weighs an average of 2kg, this works out at a requirement of 2.05m prime sheep. Similarly, at Christmas, 4,400t of leg roasts were retailed in the four weeks to January 1, 2017, requiring 1.1m lambs. In a four-week period during the spring, UK abattoirs slaughter around 900,000 prime sheep, pushing up to perhaps 1.1m in December. With domestic supply unable to meet demand, imports are required. Even if domestic production did cover Easter requirements for leg roasts, achieving carcass balance would be challenging.

With Easter moving forward to late March in 2016, sheepmeat imports arrived earlier than in 2015. Import volumes exceeded year-earlier levels in January and February, before decreasing sharply in March and April.

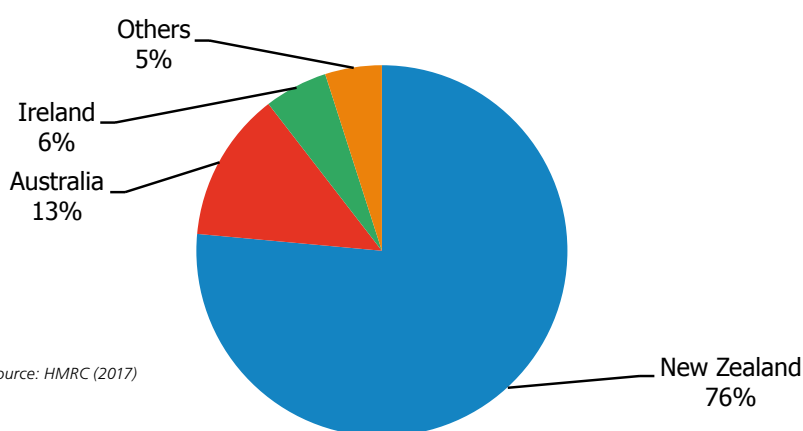
New Zealand (NZ) increased its dominance of UK sheepmeat imports in 2016. At 66,850t, NZ supplied 76% of UK sheepmeat imports, up from 75% in 2015.

UK sheepmeat imports



Source: HMRC (2017)

Suppliers of sheepmeat to the UK in 2016



Source: HMRC (2017)

Imports from Australia fell sharply in 2016, down 18% at a four-year low of 11,400t. As a result, Australia's share of UK imports fell by two percentage points to 13%. It should be noted that deliveries from Australia are heavily restricted by an annual quota for tariff-free access to the EU market of only 19,186t.

Imports of sheepmeat to the UK from Ireland increased following a heavy decline in 2015, rising by 14% to 4,800t. Of the smaller markets, trade with Spain stabilised, imports from France contracted sharply, but deliveries from Iceland surged from less than 300t to nearly 850t.



Pigmeat

According to HMRC data, UK pigmeat import volumes rose by 9% in 2016 to a five-year high of 639,800t. After a slow start to the year, shipments increased strongly from May onwards.

Breaking pigmeat imports into fresh & frozen pork and bacon and ham shows that deliveries of the former increased by 17% to 405,200t while shipments of the latter fell by 2.5% to 234,600t. As a result, pork accounted for more than 63% of pigmeat imports compared with 59% in 2015.

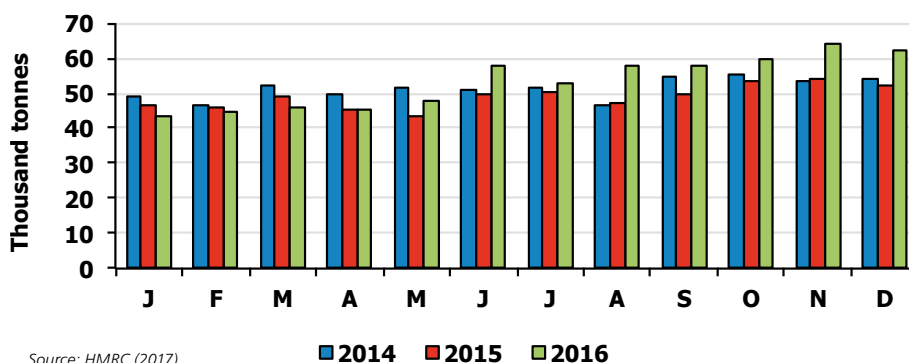
One of the main contributors to the sharp increase in imports of pork to the UK in 2016 was Denmark. Imports from Denmark are reported to have risen by 70% to 157,400t, raising its market share from 27% in 2015 to 39% in 2016. The size of this increase has raised questions, and Danish export data suggests a smaller increase, but from a significantly higher 2015 volume. Caution is therefore required.

Germany remained the second-largest supplier of pork to the UK, but volumes fell marginally to 64,700t. The other prominent suppliers to deliver more pork than in 2015 were Ireland and Spain, with increases of 1% and 13% respectively. However, trade is reported to have contracted with Belgium (-10%), Holland (-13%) and France (-16%).

During 2016, Denmark maintained its position as the principal supplier of bacon and ham to the UK. However, volumes contracted by 3% to 92,450t. This left its market share unchanged at 39.5%. At the same time, Holland increased its shipments to the UK by 5% to 87,800t, raising its share of the total by three percentage points to 37.5%.

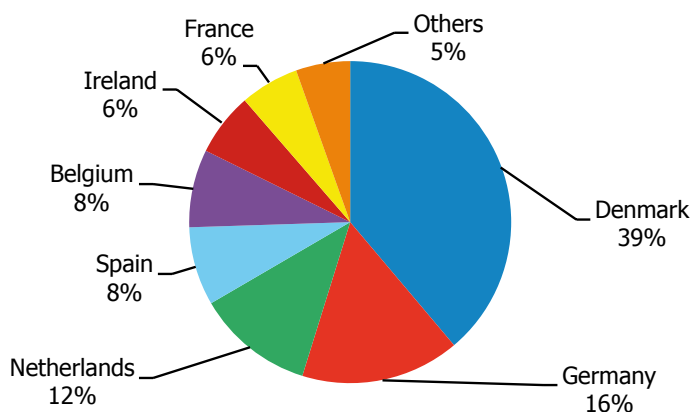
Having risen sharply in 2015, imports of bacon and ham from Germany declined by 18% in 2016, slipping back to 36,050t. This lowered its share of the total by nearly three percentage points to 15.5%.

UK pigmeat imports



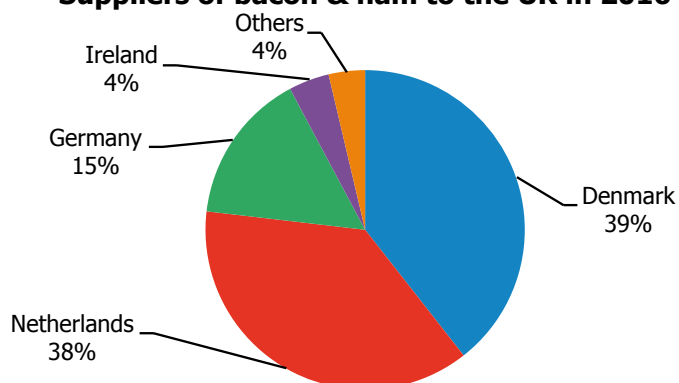
Source: HMRC (2017)

Suppliers of pork to the UK in 2016



Source: HMRC (2017)

Suppliers of bacon & ham to the UK in 2016



Source: HMRC (2017)

Exports

Beef

UK beef exports recovered strongly in 2016, rising by 10% to 108,700t. Volumes exceeded year-earlier levels in every month except October, with the fastest growth occurring during Q1.

Eighty-nine percent of the UK's beef exports went to the EU in 2016. This was down by two percentage points from the previous year, as sales rose by 6% to 96,800t. Due to a weaker sterling against the euro, the average sterling price of exports stabilised, but fell back in euro terms, underpinning shipments. Fifty-eight percent of exports to the EU were in the form of fresh boneless cuts, down from 61% in 2015. Meanwhile, frozen boneless cuts increased their share from 13% in 2015 to 17% in 2016. Fresh carcasses/half carcasses edged above 15% of shipments.

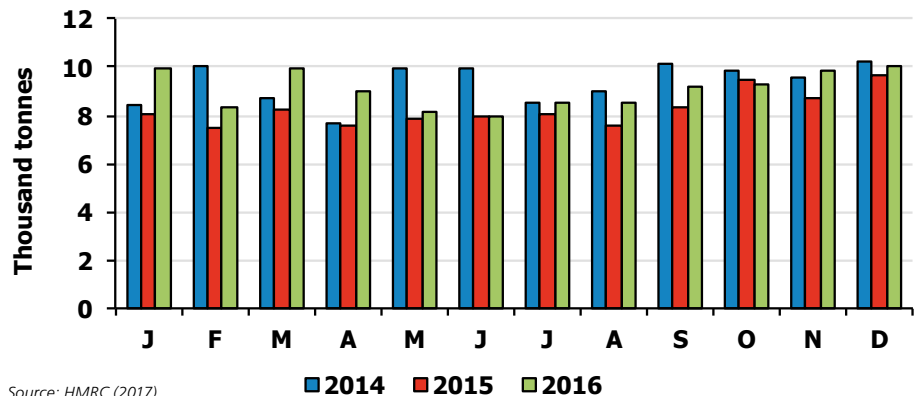
Ireland remained the largest UK export market for beef. However, exports fell by 1.5% to 36,000t. As a result, 33% of total UK exports went to Ireland, down from 37% in 2015. In addition to product destined for retail, exports to the Irish Republic reflect cross border movements of beef between Northern Irish abattoirs and cutting plants in the Republic for further processing.

Of the other significant European markets, exports to France, Belgium and Italy declined, but sales to Holland and Germany rose strongly. Of the smaller EU buyers, there was some growth in shipments to Denmark, Spain and Sweden, but trade with Poland eased slightly.

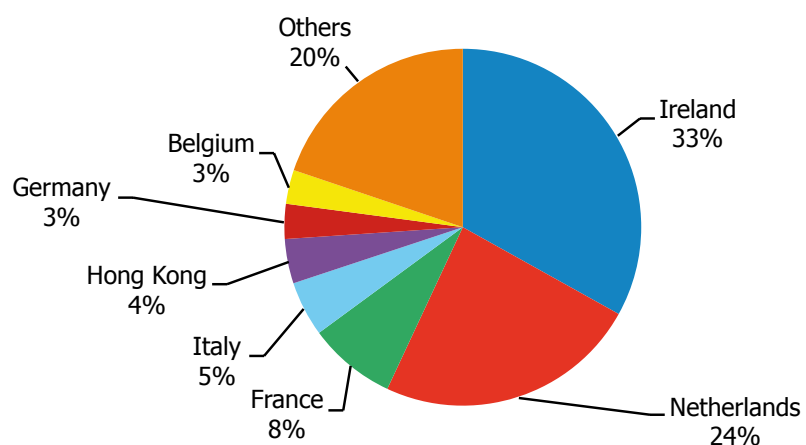
UK beef exports to non-EU countries rose by 48% in 2016, reaching 11,900t

Exports to Hong Kong rebounded in 2016, rising by two-thirds to 4,400t. However, they remained below 2014 levels. Gabon and Vietnam became outlets for low value cuts, buying 1,350t and 1,500t, respectively.

UK beef exports



UK beef exports 2016



Sheepmeat

Following on from a 23% decline in 2015, UK sheepmeat exports fell by a further 1% in 2016, slipping to 78,000t. Exports fell for the first three-quarters of 2016, before making a strong recovery in Q4.

Despite sterling weakening against the euro, UK sheepmeat exports to the EU fell fractionally to 74,800t in 2016. This was 96% of total exports, up from 95% in 2015. However, the exchange rate did help exporters to generate increased revenues when converted back into sterling. Indeed, the average value per tonne exported rose by more than 10% to £4,270/t.

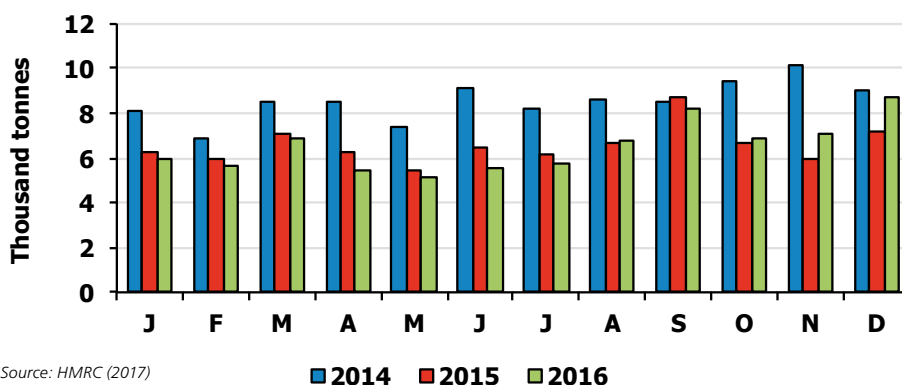
Carcases and half-carcases accounted for an unchanged 54.5% of the UK's sheepmeat exports to the EU during 2016. However, they averaged 13.5% higher in price. Meanwhile, bone-in cuts of sheep fell slightly to 18% of exports to the EU, and mutton carcasses and half-carcasses edged down to 13%.

France remained the UK's largest sheepmeat export destination in 2016. However, a 5% decrease in shipments, to 40,450t, meant that France accounted for 52% of shipments compared with 54% in 2015.

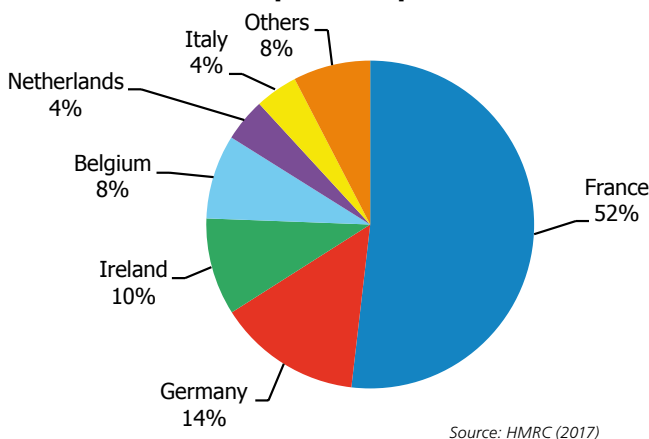
Exports to the second and third-largest markets – Germany and Ireland – rose strongly, up 14.5% and 10%, respectively, at 11,050t and 7,500t. Exports to Belgium also expanded, rising 2.5% to 6,500t, but Italy disappointed, contracting by 19% to 3,300t.

UK exports to non-EU markets declined by one-fifth in 2016 to a total of 3,300t. However, shipments of low value cuts to Hong Kong rose by 17.5% to 2,200t, accounting for two-thirds of the non-EU total.

UK sheepmeat exports



UK sheepmeat exports in 2016



Pigmeat

2016 was the fourth consecutive year of rising pigmeat exports for the UK. Volumes rose by 10% to 219,500t. All of this growth occurred during the first half of the year before UK pig supplies tightened.

Exports of fresh and frozen pork rose for a seventh year, up 10% at 204,250t, while bacon and ham shipments – of which most went to the Irish Republic – increased by 5.5% to 15,250t. This meant that bacon and ham's share of total pigmeat exports fell marginally, but remained at around 7%.

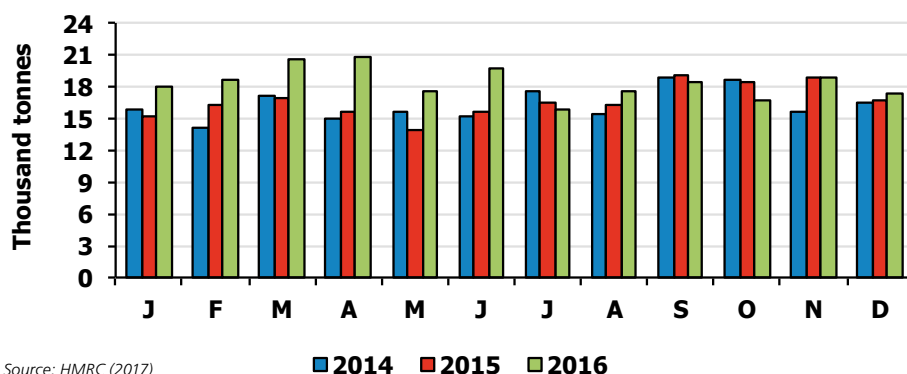
For a second successive year, UK exporters managed to grow shipments of pork to EU Member States by 1%. Consequently, volumes reached 129,350t. As a share of total pork exports, this fell from 69% in 2015 to 63% in 2016. However, underpinned by a weaker sterling, the average value of UK exports to the EU rose by 15.5% to £1,220/t.

Fresh boneless cuts remained the most common product-type exported. However, its share slipped back by two percentage points to 40.5%. By contrast, the share of frozen boneless cuts edged over 25%, while carcasses and half-carcasses – mainly sows – increased their share to nearly 27.5% in 2016 from less than 26% in 2015.

Germany, Ireland, Denmark and Holland accounted for a combined 51% of pork exports, down from 55% in 2015. Sales to Germany and Ireland picked up, but Denmark and Holland bought slightly less UK pork.

There was a 31.5% expansion in UK exports to non-EU countries in 2016, with volumes reaching 74,900t. Exports to non-EU markets were predominantly frozen boneless cuts of pork. Sales to the largest non-EU market, China/Hong Kong, rose by a third to 50,850t and accounted for 68% of non-EU exports and one-quarter of all pork sales. This compares with 67% of non-EU markets and less than 21% of total exports in the previous year.

UK pigmeat exports



Source: HMRC (2017)



Other high-growth markets included Australia, Japan, the Philippines, Singapore, Korea and the US. By contrast, shipments to South Africa and Cote d'Ivoire declined.

UK exports of bacon and ham to the largest market, the Irish Republic, rose more slowly than total shipments. Exports to Ireland rose by 2% to 11,400t, reducing its share of the total by 1.5 percentage points to 75%.

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