Analysis of Cattle Prices and Specifications

Stage 3

Comparing prices with primal cut yields & related factors

Stephen Howarth and Debbie Butcher

AHDB Market Intelligence

Introduction

AHDB collects a wide range of data as part of its deadweight cattle price reporting system. This data is used to report average prices to the industry (and government/EU commission) on a weekly basis. Historically, little further analysis of the data collected has been undertaken.

Recent reports of changes to pricing specifications by processors have led to an increased interest in providing more transparency about pricing in the deadweight cattle market. In response to this, the AHDB Market Intelligence department is undertaking a programme of analysis of data from the price reporting system.

The report on the first stage of the analysis, which analysed the distribution of animals by conformation, fat class and weight band, can be found by clicking here. The second stage report, which looked at the impact of different factors on the changing value of the GB prime cattle market, can be found by clicking here.

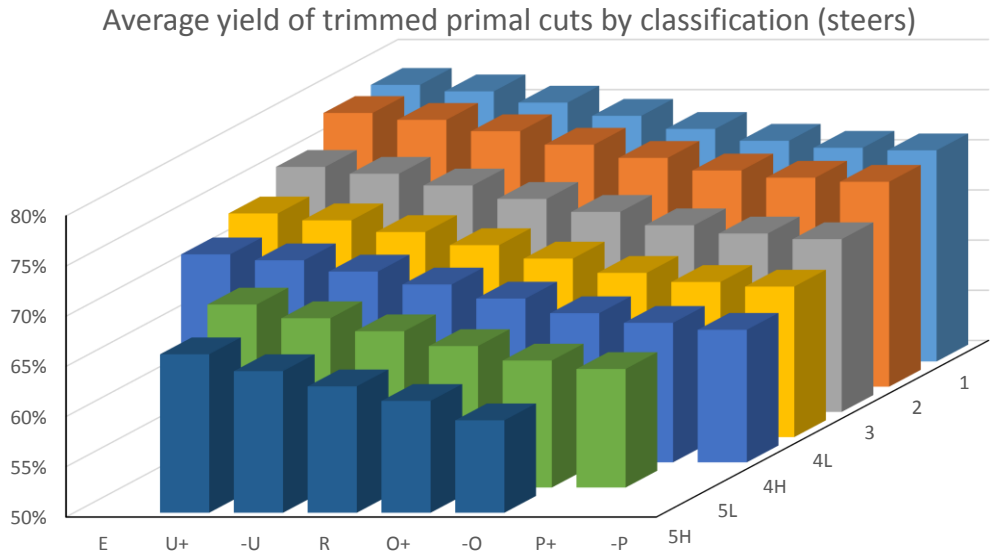
This report covers stage 3 of the programme and analyses how prices paid for cattle of different classifications compare with yields of meat from the carcases. Cattle prices are influenced by a wide range of factors and, ultimately, they are determined through commercial negotiation between buyers (processors) and sellers (producers). AHDB has no view on how prices are, or should be, arrived at. However, we can look at how the prices paid relate to the yield of trimmed primal cuts from the carcase and other related factors. This report analyses this relationship and considers some of the other factors which might need to be taken into account in determining whether the prices paid are appropriate or not.

Primal Cut Yield

As shown in the stage 1 report, carcase weights for prime cattle vary during the course of the year, particularly for young bulls. As pricing specifications are likely to remain largely unchanged throughout the year, it makes sense to compare price levels with the average carcase weights (and hence yields) over the year, rather than those for an individual month.

The yield figures used within this section are based on the yield calculator available through the AHDB Beef & Lamb website. This is based on analysis of a large number of carcases and so is thought to provide a reliable assessment of yields. While developments in genetics, nutrition and other factors may have improved carcase yields since the analysis was undertaken, the trends reported below are unlikely to be significantly different now.

Based on average carcase weights for each part of the fat class/conformation grid, yields of trimmed primal cuts from steer carcases varied from 78% for E1 carcases to below 60% for –O5H carcases. The yield for a typical R4L carcase was 69%. The pattern of yields was similar for heifers and young bulls. Full details can be found in Appendix 1. Where no figure is shown, it is because no carcases during were classified at that point on the grid during the year.



If prices (on a p/kg basis) were based solely on yield of trimmed primal cuts, they should follow the same pattern. The highest prices would be for E1 animals and with quotes gradually declining as fat class rises and/or conformation falls. As we'll see later, that isn't the case. There are a number of reasons for that, some of which are discussed later in the paper.

It is worth remembering that the average carcase weight for fat class 1 animals are lighter than for those with higher levels of fat. Therefore, even though the percentage yield is greater for these carcases, the actual weight of primal cuts yielded is lower. In fact, the total yield peaks in fat classes 2 or 3, depending on conformation.

Yields by cut

One of the reasons cattle prices do not simply follow trimmed primal cut yields is that they are not the only factor which influences the value of a carcase to processors. This is partly because different cuts and by-products from the carcase have different values. Therefore, it is instructive to look at how the make-up of the carcase varies between grades and weights.

To illustrate the point, there are certain cuts which have a much higher value to the consumer. Based on AHDB's retail price survey, the average prices for selected cuts in 2015 were:

- Fillet steak - £34.69/kg
- Sirloin steak - £21.23/kg
- Rump steak - £15.45/kg
- Topside - £10.68/kg
- Stewing/braising steak - £9.31-9.51/kg
- Premium mince - £7.66/kg
- Standard mince - £6.04/kg

From this it is clear that carcases with higher yields of steak cuts will have a greater overall value. The yield of these cuts is greatest from the highest conformation carcases and also rises slowly as fat class increases. For high conformation, fatter carcases, fillet and sirloin can make up almost 11% of the total primal cut yield. For low conformation, lean carcases, the share can be less than 8%. The pattern is similar if rump is included.

Broadening out the range of cuts considered, forequarter cuts, which are mainly minced and, hence, have lower value than most hindquarter cuts, make up a higher proportion of the total yield for poor conformation, high fat carcases. The reverse is true of hindquarter cuts. Lean trim (i.e. those parts of the carcase not included in one of the primal cuts) varies less but its share of total yield is highest for poor confirmation, lean carcases. This will also mainly be minced.

Finally, primal cuts and trim are not the only carcase components with a value. The remainder of the carcase is made up of trimmed fat, which has some value, and bones and other waste products, which have little or no market value. The latter are likely to represent a cost to processors, as they will have to pay for it to be disposed of. As might be expected, fat yields are much greater from carcases in high fat classes, which adds slightly to their value when compared with lean carcases.

Adjusting for the different values of the various parts of the carcase, the gaps in the yields between different carcase classifications is smaller than for the total yield of trimmed primal cuts. Nevertheless, the broad pattern is the same, with high conformation, low fat carcases having the highest yield and poor conformation, high fat ones having the lowest.

Other carcase factors influencing price

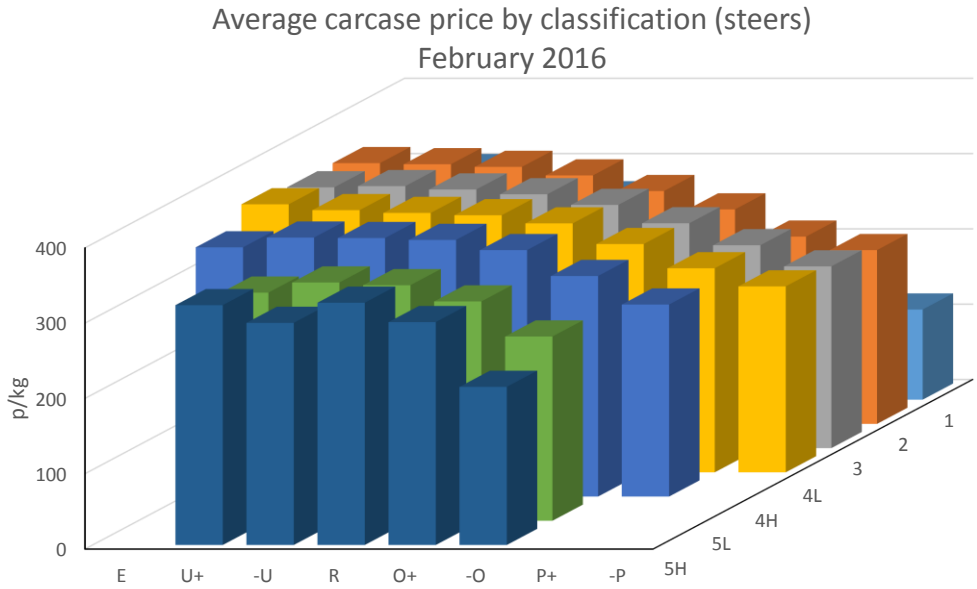
The yield of primal cuts in total, or of particular cuts, will not be the only aspect of the carcase which influences the price paid for it. Important considerations which can't be derived from the yield figures are the consistency of cuts and their appearance, both of which will affect how consumers respond to them and the price they are willing to pay.

One aspect of this is the size of cuts. Reports suggest that budget-conscious consumers have become increasingly resistant to buying larger cuts. Therefore, most retail packs will be limited to cuts of a specific weight or within a fairly small size range. For larger carcases, this can mean, for example, that steaks from large carcases have to be cut thinner, which in turn can make them less attractive to consumers. Alternatively, they may need to be trimmed significantly, reducing the value of the whole cut. This is one factor behind reports of increasing penalties for heavier carcases. Appearance, and hence saleability, may also be affected by carcases which are too lean or too small.

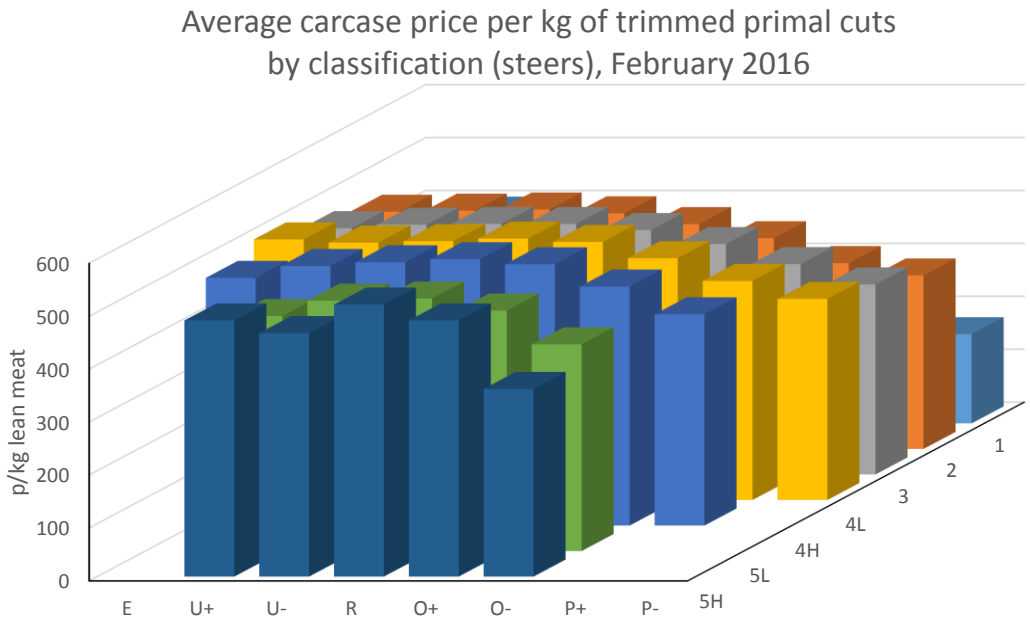
The desire of retail (and foodservice) customers for consistent products means that processors have a requirement for consistent carcases. This will also help to minimise their processing costs. Although it is hard to quantify the impact of this, it would be expected to mean that carcases which are further away from the target specification would attract lower prices than might be anticipated based solely on primal cut yields (whether adjusted or not).

Prices per unit of trimmed primal cuts

Above, we have seen how prime cattle prices would vary across the grid if they were based solely on primal cut yield (with or without adjustment). However, the chart below illustrates that they are not distributed in this way. In fact, the highest prices are in fat classes 3 and 4L, dropping away either side of this, particularly for the more extreme carcases in fat classes 1, 5L or 5H. Carcases with the best conformation do generally attract the highest prices but there is less difference between grades than yields would imply.



To look at things another way, we can calculate the price paid per kg of trimmed primal cuts. Average prices on this basis can be found in Appendix 2. If the yield of these cuts was the only factor influencing price, we would expect this to show a flat profile, with prices similar in all parts of the grid. In reality, prices are highest in the central part of the grid, around the target specification (e.g. R4L for steers, illustrated in the chart below).



The table below presents the same data in a different way. During February 2016, the average price per kg of trimmed primal cuts was 474.7p/kg for steers. The table shows how the average price differed from this level in each part of the grid. The deviations are much larger in the extremities of the grid but the number of animals involved is much smaller.

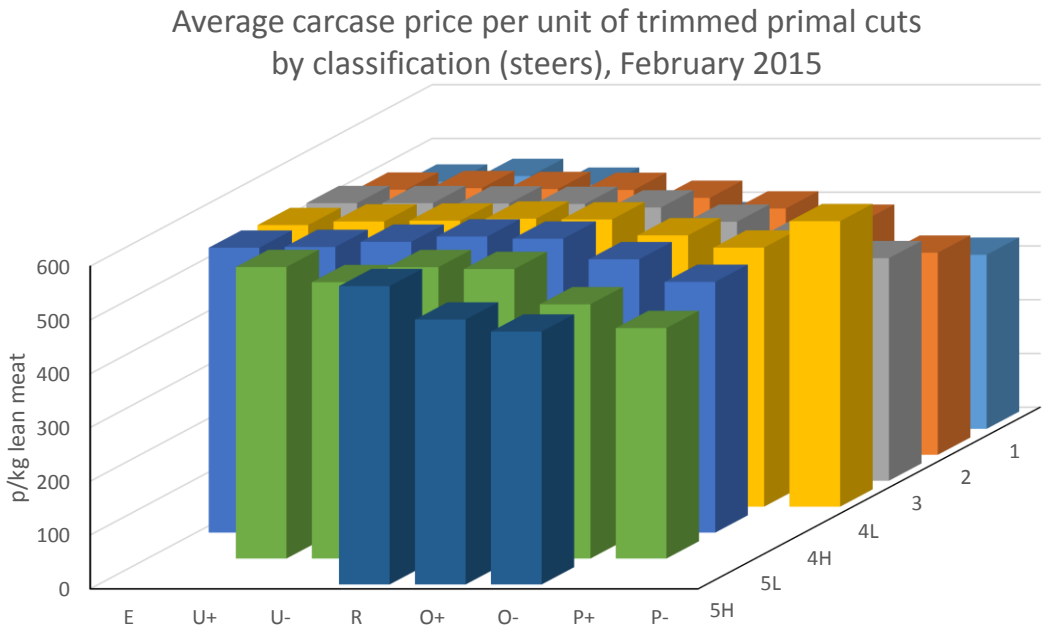
Deviation from overall average price per kg (p/kg) of trimmed primal cuts by specification
Steers – February 2016

	1	2	3	4L	4H	5L	5H
E	-101	-27	-9	+18	-7		
U+	-78	-24	-3	+12	+16	-31	+9
-U	-105	-22	-1	+14	+23	-2	-15
R	-114	-30	-1	+19	+29	+2	+39
O+	-167	-50	-13	+13	+19	-20	+9
-O	-221	-77	-39	-18	-23	-84	-120
P+	-290	-124	-77	-61	-76		
-P	-306	-147	-116	-95			

The pattern of pricing based on primal cut yield is similar whether the yield is adjusted to take account of value or not, although the differences are slightly smaller if the adjusted yield is used.

This analysis suggests that in parts of the grid close to the target specification, average prices reflect the yield fairly accurately. However, for carcases falling outside this area, prices are lower than would be expected on the basis of primal cut yield. The differences become larger the further away they get from the core range. At the extreme end of the scale, the small number of P1 carcases attract less than half as much per kg of trimmed primal cuts as those in the core range.

In the second stage of this project, we saw that prices had fallen more sharply outside the core part of the grid in the year to February 2016. So did prices in early 2015 match yields of primal cuts more closely? The answer is that they did. The pattern was similar, with fairly flat prices in the core part of the grid, falling away outside that range. However, differences were smaller than in February 2016, particularly for carcases furthest away from the target specification.



Deviation from overall average price per kg (p/kg) of trimmed primal cuts by specification
Steers – February 2015

	1	2	3	4L	4H	5L	5H
E	-59	-26	-3	+5	+11		
U+	-49	-23	-3	+11	+12	+23	
-U	-65	-25	-3	+13	+22	-5	
R	-108	-26	-4	+17	+32	+23	+36
O+	-129	-41	-11	+15	+28	+19	-26
-O	-173	-61	-37	-14	-11	-46	-49
P+	-229	-86	-63	-37	-53	-90	
-P	-195	-143	-105	+12			

Conclusions

It is clear from the analysis presented above that prime cattle prices don't necessarily reflect the yield of trimmed primal cuts from carcases. In particular, carcases which are well away from the target specification attract much lower prices than might be expected. Furthermore, the differences have increased significantly over the year to February 2016.

So does this mean that prices are unfair (and becoming increasingly unfair)? Not necessarily. As discussed above there is a growing desire for consistency of cut sizes and appearance from retail customers and consumers. Achieving this consistency requires carcases to be consistent too. The pricing changes over the last year send a clear message to producers about the importance of delivering cattle which consistently meet the target specification.

Ultimately, decisions about pricing are a matter for commercial negotiation between producers and processors. The latter are free to decide the prices they pay, to ensure that they get the kind of cattle which they, and their customers, require. The former are free to accept these terms of try to sell their cattle elsewhere. However, ultimately producers need to ensure that their cattle meet the requirements of the market if they are to ensure that they receive the best prices.

Next steps

This report covers the third stage in a programme of analysis to improve the transparency of cattle pricing. It is the last of three reports summarising the results of the analysis.

Now that the analysis of historic price data has been completed, we will consider how the findings can be replicated within our standard price reporting (either on a weekly or monthly basis). This is likely to be delivered through the Tableau software reports, which are currently under development. These reports will allow users to interrogate the price reporting data in more detail, with controls to prevent access to confidential data. Reports will be available for demonstration and testing purposes by the autumn.

For further information about the analysis, please contact the authors:

Stephen Howarth
Market Specialist Manager
Stephen.howarth@ahdb.org.uk
024 7647 8856

Debbie Butcher
Senior Analyst
Debbie.butcher@ahdb.org.uk
024 7647 8851

Appendix 1: Average yield of trimmed primal cuts by conformation and fat class, 2015

Steers

	1	2	3	4L	4H	5L	5H
E	78%	77%	74%	72%	71%		
U+	77%	77%	74%	72%	70%	68%	66%
-U	76%	75%	73%	70%	69%	67%	64%
R	74%	74%	71%	69%	68%	66%	63%
O+	73%	73%	70%	68%	66%	64%	61%
-O	72%	72%	69%	66%	65%	63%	59%
P+	71%	71%	68%	65%	64%	62%	
-P	71%	70%	67%	65%	63%		

Heifers

	1	2	3	4L	4H	5L	5H
E	78%	78%	75%	73%	71%	69%	
U+	77%	77%	74%	72%	71%	69%	66%
-U	76%	76%	73%	71%	70%	67%	65%
R	75%	75%	72%	70%	68%	66%	63%
O+	74%	73%	70%	68%	67%	65%	62%
-O	72%	72%	69%	67%	65%	63%	60%
P+	72%	71%	68%	66%	64%	62%	59%
-P	71%	71%	68%	65%	64%		

Young Bulls

	1	2	3	4L	4H	5L	5H
E	78%	77%	74%	72%	71%		
U+	77%	77%	74%	72%	70%	69%	
-U	76%	76%	73%	71%	69%	67%	65%
R	75%	74%	71%	69%	68%	66%	
O+	73%	73%	70%	68%	67%	64%	
-O	72%	72%	69%	67%	65%	63%	
P	71%	71%	68%	66%			
-P	71%	71%	68%				

Appendix 2: Average price per kg of trimmed primal cuts by conformation and fat class

February 2016

Steers

p/kg	1	2	3	4L	4H	5L	5H
E	374	448	465	492	468		
U+	396	450	472	486	490	444	484
-U	370	452	473	489	498	473	460
R	361	445	473	494	503	477	514
O+	308	425	462	488	494	454	484
-O	254	398	435	457	452	391	355
P+	185	351	397	414	399		
-P	169	328	359	380			

Heifers

	1	2	3	4L	4H	5L	5H
E	347	446	477	489	477		
U+	332	452	476	492	491	459	
-U	391	454	475	491	493	461	410
R	353	439	471	489	492	468	469
O+	281	411	455	481	485	455	444
-O	235	367	408	439	442	414	
P+	187	256	320	382	368	367	
-P	171	241	317	373	300		

Young Bulls

	1	2	3	4L	4H	5L	5H
E	381	434	451	482			
U+	381	431	459	480	472		
-U	391	439	461	473	485		
R	362	431	455	467	475		
O+	291	398	432	446	457		
-O	302	375	409	417	403		
P+	229	327	376				
-P	209	345	331				

February 2015

Steers

	1	2	3	4L	4H	5L	5H
E	460	493	516	524	530		
U+	470	496	516	530	531	542	
-U	454	494	516	532	541	514	
R	411	493	515	536	551	542	555
O+	390	478	508	534	547	538	493
-O	346	458	482	505	508	473	470
P+	290	433	456	482	466	429	
-P	324	376	414	531			

Heifers

	1	2	3	4L	4H	5L	5H
E	488	496	514	534	541		
U+	466	497	519	535	537	519	
-U	434	493	516	532	538	520	530
R	412	485	511	530	538	526	523
O+	346	468	501	526	534	509	528
-O	329	409	451	484	500	511	579
P+	247	341	368	419	456		
-P	237	270	264	430	452		

Young Bulls

	1	2	3	4L	4H	5L	5H
E	433	487	490	505			
U+	449	480	489	510	491		
-U	444	478	493	513	514	520	
R	402	471	487	503	497	456	
O+	381	446	467	490	476	462	
-O	354	424	446	466	463		
P+	290	373	410	443			
-P	276	259	393				