



Independent examination of the price composition of the total value of the animal along the supply chain.

May 2021



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1. Introduction

1. Introduction

1.1 Overview of the Irish Beef Sector

The agri-food industry is at the core of Ireland's economic and social well-being. Bord Bia has reported that Irish edible and non edible agri-food exports stood at approximately €14.2 billion in 2019¹. The export profile of Irish food and beverages has been built on excellence in quality and more recently on the sustainability attributes of production systems.

In Ireland, the beef sector accounts for the largest category of Irish meat and livestock exports. Its size is reflective of the importance that the beef sector has for Ireland's export and agri-food portfolio.

The reputation of Irish beef worldwide is built around the quality of product, animal welfare and sustainability. The grass-based system which Irish cattle are reared on for most of the year and the Bord Bia Sustainable Beef and Lamb Assurance Scheme (SBLAS), underpin the export profile of Irish beef. Irish beef has the fifth most efficient carbon footprint in the EU², owing to the strong sustainability credentials of the sector.

1.2 The Department of Agriculture, Food and the Marine

The Department of Agriculture, Food and the Marine (DAFM) is the oldest department in the State having been founded in 1900 following the enactment of the Agriculture and Technical Instruction (Ireland) Act 1899. The Department's mission is to *"lead the sustainable development of the agri-food, forestry and marine sector and to optimise its contribution to national economic development and the natural environment"*. The primary functions of the Department include:

- Policy advice and development on all areas of Departmental responsibility;
- Representation in international and national negotiations;
- Development and implementation of national and EU schemes in support of agriculture, food, fisheries, forestry and rural environment;
- Monitoring and controlling aspects of food safety;
- Control and audit of public expenditure under Departmental control;
- Regulation of the agriculture, fisheries, and food industries through national and EU legislation;
- Monitoring and controlling animal and plant health and animal welfare;

- Direct provision of support services to agriculture, fisheries, food and forestry; and
- Monitoring and direction of State Bodies engaged in the following areas:
 - research, training and advice;
 - market development and promotion;
 - industry regulation and development; and
 - commercial activities.

1.3 The Irish Beef Sector Agreement

In August 2019, discussions took place between the Department of Agriculture, Food and the Marine and the eight beef industry representative groups, in relation to a number of challenges facing the sector. An agreement was brokered, which was subsequently followed up by the Irish Beef Sector Agreement, to address issues facing the industry. The Irish Beef Sector Agreement was signed, and commenced into action, on 15 September 2019.

The Agreement consists of two strands; Strand One: immediate benefits for farmers in terms of changes to the bonus payments and Strand Two: strategic structural reforms.

Strand One comprises of a set of seven immediate actions including the modification of bonuses, reduction in residency requirements, the development of beef market prices, review of the Quality Payment Grid and the establishment of a Beef Market Taskforce. Similarly, Strand Two involves a number of key actions to promote Irish beef internationally, protect and support beef farmers, introduce more transparency regarding pricing, to analyse the market, and to provide a platform for strategic engagement through the creation of the Beef Taskforce.

1.4 Scope and Objective

The conclusion of the Irish Beef Sector Agreement and establishment of the Beef Taskforce signaled a desire by all parties to work towards increased transparency along the supply chain. This situation has played a key part in instigating the commissioning of this report by the Department of Agriculture, Food and the Marine.

Grant Thornton has been commissioned by the Department of Agriculture, Food and the Marine to conduct three distinct but related reports. The first report focused on a review of literature relating to competition law in the beef sector, the second report focused on market and customer requirements

¹ Bord Bia 2020, Export Performance & Prospects 2019-2020

² Bord Bia 2020, Sustainable Beef and Lamb Assurance Scheme, <<https://www.bordbia.ie/farmers-growers/get-involved/become-quality-assured/sustainable-beef-and-lamb-assurance-scheme-sblas/>>

1. Introduction

that specifically relate to the four 'in-spec' bonus criteria and this, the final report focuses on mapping the supply chain and identifying price points.

In creating this report, we have reviewed and analysed the available data and secondary reports on the beef supply chain and price composition. The specific requirements of the terms of reference include:

- A. The requirement will be the identification of all components of the bovine animal, including the fifth quarter.** Chapter 2 of this report provides a breakdown of component parts of the bovine animal including the fifth quarter.
- B. The requirement will be to map the supply chain for Irish beef. This examination will be required at a detailed level and to specifically track component parts to market and market segment, i.e. retail, further processing and food service industry.** The supply chain for Irish beef can, at a high level be categorised into primary producer, processor and route to market. Each of these stages are examined in detail in Chapter 3. The export profile and domestic sales of component parts has been analysed and the proportion of market share of retail, food service, manufacturing and trading accounted for within each market.
- C. There will be a further requirement to identify - benchmark price points at various stages along this supply chain for component parts and into each market segment. The commercial sensitivity of this information will be acknowledged. This will require significant input from industry, which will need to be treated in a confidential manner and reported in aggregate.** Publically available data from various sources including the Department of Agriculture, Food and the Marine and the Central Statistics Office has been complemented with commercially sensitive information provided by stakeholders throughout the supply chain. This data has been analysed to determine the aggregated value of animals entering the beef supply chain and the aggregated value of Irish beef products destined for export and sale in the Irish market. A breakdown of the volume and value of each product by market has been presented and the proportion of total product destined for each channel is contained within the report. It was not possible to ascertain a representative sample of the value of Irish beef to the end consumer. Completed data sets were received from purchasers of Irish beef across various routes to market and in various jurisdictions. However, the data does not constitute a representative sample. The possibilities of extrapolating indicators from this data or using

secondary data to support the analysis were examined in detail. It was deemed that neither option would yield an accurate representation of the final market value of Irish beef. Further developments at EU market observatory level may lead to greater transparency.

- D. Analysis should take account of all points in the supply chain including commodity trading and detail how the final price is distributed at key points on the supply chain. (i.e. producer, processor & trade).** The data received has been analysed to determine price points and distribution of price where a representative sample existed. The ability to conduct this analysis is dependent upon the completion of Part C of this study. The limitations of Part C of this study have impacted the depth of analysis conducted.

In presenting this report, Grant Thornton have considered the requirement to be able to substantiate the findings of this report with representative data. It has only been possible to conduct robust analysis where a substantive data set was provided to Grant Thornton. The confidentiality commitments in place with various stakeholders and the commercial sensitivities of the information provided to us has also been considered in presenting the findings.



2. Component Parts of the Bovine Animal

2. Component Parts of the Animal

Overview of the Bovine Animal

Beef is produced from two main types of operations, specialised suckler herds with dedicated beef breeds and from the dairy industry. While beef is produced from a variety of categories and breeds of bovine animals the component parts are largely consistent.

Once slaughtered the process of 'disassembling' the animal commences. The initial steps include removing the hide, head, feet and some internal organs. Thereafter, processors may choose to cut the animal differently dependent on their customer requirements. Cuts may be determined by a number of factors including buyers' specifications, and factory layouts, as some layouts restrict the mechanics of certain cutting. The key factor here is the boning hall, where the processor needs to ensure that the segregation of cuts is done in such a way that ensures that all cuts are compliant with customer requirements.

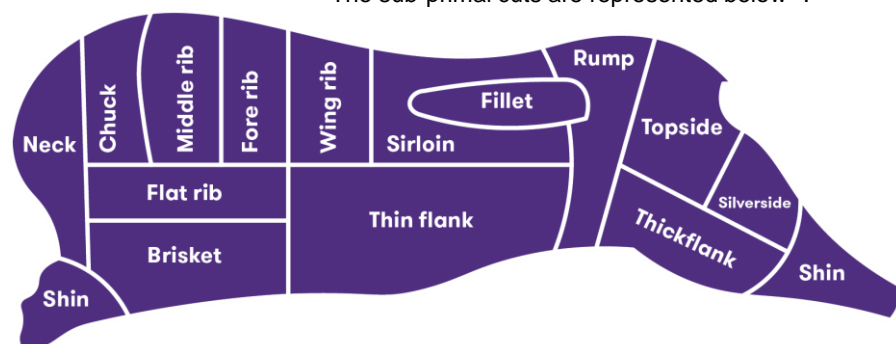
The straight cut which is popular in the UK, takes 10 ribs in the forequarter, and 3 ribs in hind quarter. This cut includes the rib eye as part of the forequarter. On the continent, there are different cutting preferences, the pistola cut, which is popular in France, starts at the 5th rib and splits the side to result in 50% in forequarter and 50% in hindquarter. A third method used which is a variant of this, is the Italian pistola specification of cutting which results in most of the manufacturing meat in the hind quarter being transferred into the forequarter.

While the component parts of the animal will remain largely consistent, the area where they originate (e.g. hindquarter/forequarter) may vary depending on the cutting method used.

Broadly speaking, the bovine animal is comprised of eight primal cuts, which are then reduced into 16 sub-primal cut areas, which are known as fabricated cuts. The eight primal cuts are as follows:

1. **Chuck:** The primal chuck is the animal's shoulder. The chuck is further cut into sub-primal roasts and steaks: blade steak, chuck short ribs, cross-rib pot roast, flat iron steak, ground chuck for hamburgers, and stew meat.
2. **Brisket:** The beef brisket is a very tough, coarse-textured muscle and contains a substantial percentage of fat. It is typically cut into smaller portions that are pickled to produce corned beef brisket or cured to make pastrami.
3. **Shank:** Beef fore-shank is typically used in foodservice for making soups and stocks. In retail markets, it is ground for low-fat ground beef.
4. **Rib:** Rib consists of the ribs and a portion of the backbone. The centre muscle portion of the rib is quite tender and contains large amounts of marbling and produces rich, full-flavored roasts and steaks. It is further cut into sub-primal beef short ribs, boneless rib eye roast, rib eye steaks, and roast prime rib of beef.
5. **Short Plate:** The short plate contains rib bones and is located directly below the primal rib. It is cut into sub-primal short ribs and skirt steaks.
6. **Loin:** The loin is located behind the primal rib and produces the most prized cuts of meat. It is further cut into sub-primal fillet mignon, porterhouse, T-bone, sirloin butt roast, sirloin steak, and strip steak.
7. **Flank:** The flank is located directly beneath the loin. The flank contains no bones and is further cut into sub-primal flank steak and London broil.
8. **Round:** The primal round is the hind leg of the animal and contains the round, shank, and tail bones and aitchbone. It is cut into sub-primal round roasts and round steaks.

The sub-primal cuts are represented below¹:



¹ Ojha, K.S, Tiwari, B.K, Kerry, J.P and Troy, D, (2016) Encyclopedia of Food and Health. <https://www.sciencedirect.com/science/article/pii/B9780123849472000568?via%3Dihub>

2. Component Parts of the Animal

Key Meat Cuts

The full range of beef products includes: fresh beef, primal or non-primal cuts, sausages, steaks, burgers, patties, mince, ground beef, and other ready-to-eat beef products.

They key meat cuts derived from the animal include:

- Topside;
- Silverside;
- Knuckle;
- Rump;
- Rump Tail;
- Striploin;
- Sirloin;
- Fillet;
- Rib;
- Loin;
- Round;
- Bavette;
- Flank Steaks;
- Heel;
- Shin shank;
- Chuck;
- Chuck tender;
- Brisket;
- Finely Textured Beef; and
- VL Trim – Visible Lean Trim.

The yield derived from each animal will vary dependent upon a number of factors including but not limited to the breed, weight and cutting specification.

Offal and The Fifth Quarter

In addition to the traditional meat cuts listed above the animal also consists of a number of by-products, largely categorised as offal or fifth quarter products.

The yield of these products is influenced by the same factors as the meat cuts, such as breed, and age, but also influenced by matters such as damage caused during slaughter, disease, and for certain products, regulation.

These products can include:

- Cheek meat;
- Thick and thin skirt;
- Tail;
- Tongue;
- Tripe;
- Liver;
- Kidney;
- Heart;
- Lungs;
- Head meat;
- Fat/Tallow; and
- Minor edibles.

A market exists for many of these products, both nationally and internationally. Where a product is to be disposed of there are stringent regulations in place for the use and disposal of animal by-products.

There are a number of additional uses for animal by-products including, but not limited to:

- Edible fats (shortening, margarine, sweets, chewing gum)
- Bones (soups for humans; buttons, bone meal)
- Blood (human & animal consumption, pharmaceutical & food additives such as emulsifiers, stabilisers, clarifiers, nutritional additives)
- Glycerin (chemical additive, solvent, food preservatives, plasticisers)
- Intestines (sausage casings, surgical ligatures)
- Gelatin (confectionary additive)
- Rennin (cheese making additive)
- Numerous pharmaceutical products;
- Livestock feed;
- Pet food and fish food;
- Hides/skins;
- Hair;
- Glue;
- Inedible fats for industrial use in tyres, lubricants, insecticides, germicides.

2. Component Parts of the Animal

Component Parts

The utilisation of component parts varies greatly depending a number of factors. The predominant factors impacting the utilisation of component parts are seasonality and customer demand. While these are examined separately there is a close relationship as changing consumer patterns, often associated with changing seasons, impact customer demand.

Seasonality has a large impact on how customers purchase beef. Summer and hot weather sees consumers opting to BBQ more, and in turn associated cuts see a spike in demand. Steaks and burgers in particular see a large sales increase, with some retailers seeing demand shift to as much as 80% of their beef sales during these periods. At the other end of the year, winter sees more customers choosing to roast and stew their beef, and so joints, stewing meats and slower cook products see a demand increase. During the Christmas and Easter seasons, there are also influences on beef sales, where consumers are more likely to trade up to more premium cuts, or larger portion size products. Other value-add cuts such as spiced beef and corned beef also see an increase in sales around the Christmas period.

In addition to the impact of seasonality, customer demands can vary for a number of reasons. The decision by customers to run promotional campaigns can see spikes in demands for particular cuts. Influencers such as high profile chefs and celebrities and influencing events such as industry specific documentaries or public holidays can drive short term changes in consumer patterns that create spikes or dips in demand for certain cuts. Finally macro economic factors such as currency volatility and global supply and demand can also influence customer demand.

As a result of these shifting patterns elements of the demand planning process are highly exposed to volatility. Often processors have to react to changing customer demands at short notice and revise the planned utilisation of component parts. For example, one stakeholder cited how a flat iron steak in the morning could form a visible lean (VL) product in the afternoon.

During our engagement with processors it was noted that the process and level of granularity at which information is captured, the high degree of volatility in demand and the aforementioned variability in yield lead to inconsistency in how components parts are tracked. The only industry wide consistent parameters for tracking component parts are defined by intrastat and customs systems. These are commodity code definitions of all beef exports, including the fifth quarter. The definitions used are displayed on the following page.

Commodity Code Definitions

- Carcases or half-carcases of bovine animals, fresh or chilled.
- 'Compensated' quarters of bovine animals with bone in, fresh or chilled.
- Unseparated or separated forequarters of bovine animals, with bone in, fresh or chilled.
- Unseparated or separated hindquarters of bovine animals, with bone in, fresh or chilled.
- Fresh or chilled bovine cuts, with bone in (excl. carcasses and half-carcases, 'compensated quarters', forequarters and hindquarters).
- Fresh or chilled bovine meat, boneless.
- Frozen bovine carcasses and half-carcases.
- Frozen 'compensated' bovine quarters, with bone in.
- Frozen unseparated or separated bovine forequarters, with bone in.
- Frozen unseparated or separated bovine hindquarters, with bone in.
- Frozen bovine cuts, with bone in (excl. carcasses and half-carcases, 'compensated' quarters, forequarters and hindquarters).
- Frozen bovine boneless forequarters, whole or cut in max. 5 pieces, each quarter in 1 block; 'compensated' quarters in 2 blocks, one containing the forequarter, whole or cut in max. 5 pieces, and the other the whole hindquarter, excl. the tenderloin, in one piece.
- Frozen bovine boneless crop, chuck and blade and brisket cuts.
- Frozen bovine boneless meat (excl. forequarters, whole or cut into a maximum of five pieces, each quarter being in a single block 'compensated' quarters in two blocks, one of which contains the forequarter, whole or cut into a maximum of five pieces, and the other, the hindquarter, excl. the tenderloin, in one piece, crop, chuck and blade and brisket cuts).
- Fresh or chilled edible bovine offal for manufacture of pharmaceutical products.
- Fresh or chilled edible bovine thick and thin skirt (excl. for manufacture of pharmaceutical products).
- Fresh or chilled edible bovine offal (excl. for manufacture of pharmaceutical products, thick and thin skirt).

2. Component Parts of the Animal

- Frozen edible bovine tongues.
- Frozen edible bovine livers.
- Frozen edible bovine offal for manufacture of pharmaceutical products (excl. tongues and livers).
- Frozen edible bovine thick and thin skirt (excl. for manufacture of pharmaceutical products).
- Frozen edible bovine offal (excl. for manufacture of pharmaceutical products, tongues, livers and thick and thin skirt).
- Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin \leq 16 kg, fresh.
- Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin \leq 16 kg, wet-salted.
- Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin \leq 8 kg when simply dried or \leq 10 kg when dry-salted.
- Whole raw hides and skins of bovine "incl. buffalo" or equine animals, whether or not dehaired, unsplit, of a weight per skin \leq 16 kg, limed, pickled or otherwise preserved (excl. fresh or wet-salted, simply dried or dry-salted, tanned, parchment-dressed or further prepared).
- Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin $>$ 16 kg, fresh.
- Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin $>$ 16 kg, wet-salted.
- Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin $>$ 16 kg, dried or dry-salted
- Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin $>$ 16 kg, limed, pickled or otherwise preserved (excl. fresh or wet-salted).
- Butts, bends, bellies and split raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired, fresh, or salted, dried, limed, pickled or otherwise preserved, and whole raw.
- Tallow oil for industrial uses (excl. for production of foodstuffs and emulsified, mixed or otherwise prepared)
- Tallow oil, oleo-oil and lard oil (excl. emulsified, mixed or otherwise prepared, and tallow oil for industrial uses).

Prepared or Preserved Products

- Prepared or preserved meat or offal of bovine animals, uncooked, incl. mixtures of cooked meat or offal and uncooked meat or offal (excl. sausages and similar products, and preparations of liver).
- Corned beef, in airtight containers.
- Meat or offal of bovine animals, prepared or preserved, cooked (excl. corned beef in airtight containers, sausages and similar products, finely homogenised preparations put up for retail sale as infant food or for dietetic purposes, in containers of a net weight of \leq 250 g, preparations of liver and meat extracts and juices).
- Prepared or preserved meat or meat offal, uncooked, containing meat or offal of bovines, incl. mixtures of cooked or uncooked meat and cooked or uncooked offal (excl. of poultry, domestic swine, reindeer game or rabbits, sausages and similar products, finely homogenised preparations put up for retail sale as infant food or for dietetic purposes, in containers of a net weight of \leq 250 g, and preparations of liver).
- Prepared or preserved meat or meat offal, cooked, containing meat or offal of bovine animals (excl. of poultry, domestic swine, game or rabbits, sausages and similar products, finely homogenised preparations put up for retail sale as infant food or for dietetic purposes, in containers of a net weight of \leq 250 g, preparations of liver and meat extracts and juices).



3. Irish Beef Supply Chain Map

3. Irish Beef Supply Chain Map

Overview of the Supply Chain Map

The beef supply chain is comprised of three main stages, as outlined below:

Primary Production

Processing

Route to Market

As with any supply chain there are a magnitude of permutations that can occur, which would make the supply chain extremely complex in nature. For example, at any point during the primary production stage an animal could be sold or exported. Similarly, at any point in the processing stage product could be put into cold stores. This could create an iterative loop in mapping the supply chain. To avoid such complexity the supply chain processes outlined below and accompanying visual aids seek to describe the status quo supply chain and not all eventualities that could occur within the supply chain.

Initially, this chapter presents an overview of the supply chain at each stage. The latter pages of the chapter focus on the analysis of the market demand for component parts and the proportion of the markets accounted for by each market segment e.g. retail, wholesale, manufacturing and trading.

Primary Production

A proportion of the Irish herd is bred specifically for beef production, particularly for high quality beef, but this is also complemented by beef production from the dairy industry. A third source of animals, making up a much smaller proportion, is those which are live imports from other countries.

The mix of bovine animals that enter the chain include: young bulls, bulls, steers, heifers and cows. Some of these animals will be sent for live export, where they then exit the Irish beef supply chain. For those that are kept on Irish farms, some are reared and sold via livestock markets (marts) or directly to other farmers, or kept for finishing on their original farms. Agents also play a role in the chain, acting as intermediaries, by procuring for slaughter or export on behalf of processors through marts and private sales. It is possible that inter-farm trading can happen a number of

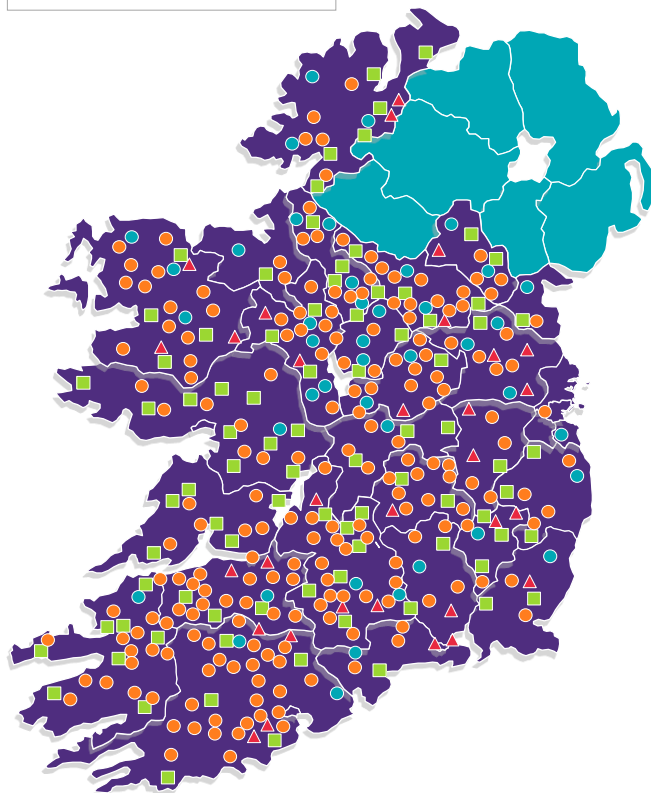
times in the animal's life, where the process loops back, and some of these animals may also end up going for live export. However, this is not thought to be a common occurrence.

Finishers are usually moved on in one of four ways; mart sale, farm sale, butcher sale or a factory sale, where they are then prepared for slaughter.

The accompanying process map on pages 14-16 outlines the main stages of the beef supply chain at farm level, and how there are many permutations of routes in which an animal could take.

Processing

Ultimately finished animals are sent to slaughter and processed through either DAFM approved slaughtering plants, or Local Authority approved abattoirs.



² Hanrahan, K. (2018), Transparency in Beef Markets in Ireland, Workshop on Market Transparency, https://ec.europa.eu/info/sites/info/files/law/consultation/mt-workshop-mt-beef-markets-ireland_hanrahan_en.pdf.

3. Irish Beef Supply Chain Map

Processing contd.

The processing plants predominantly handle Irish cattle and small volumes of imported product. The slaughtering process begins with the animals being offloaded from their transport, to receiving pens. Here the animals are prepared for slaughter, where their ID, sex and breed are recorded. They are visually screened where ante-mortem inspections are carried out by a veterinarian to ensure that the animals are healthy, and fit for human consumption. Cattle that are approved, are prepared for stunning, while those that are not, are condemned and disposed of appropriately.

Stunning is used to knock the animal unconscious for animal welfare purposes. In some cases, stunning does not take place, where animals are produced for Halal and Kosher meat. Stunning usually takes place via mechanical or electrical means, and animals are restrained for the process.

After being stunned and rendered unconscious the animal is shackled to the left hind leg and hoisted up by chain, where a process of sticking or bleeding takes place to kill the animal. The cattle are left to bleed for a number of minutes, and the blood is collected. Next the head and feet are removed, before de-hiding takes place. Manual or mechanical hide removal techniques are generally adopted depending on the size and operational capacity of the slaughterhouse. Evisceration is next where the internal organs are removed. A number of edible and inedible by-products are produced, including the edible offal such as the liver, kidneys and tongue. The other by-products are processed for other uses or discarded.

The carcass is then split down the vertebral column splitting the carcass into two halves. The spinal canal is exposed and the spinal cord (which is SRM -specified risk material) is removed.

Chilling of the carcass is one of the most important steps in ensuring the safety, quality and shelf-life of the meat. Various methods are employed to chill the carcass depending on the facilities available.

The carcass sides are quartered and it is de-boned and primal cut prepared. Finally the product is packed and prepared for storage or dispatch. Throughout the entire processing stage a number of quality and regulatory checks by the processor and/or Department of Agriculture, Food and the Marine officials take place. These include, but are not limited to post mortem inspections, samples, weighing and metal detection.

Route to Market

Finished product leaving the processing plant typically has five routes in which it takes. The most straightforward route is packed product which heads to retail shelves before being bought by the end consumer. Along with this, packed product heads into foodservice channels, whereby it is cooked and served to customers across restaurants, takeaways and through catering channels. This product may also enter a third party packer before following the same process.

The other three options are trading, further manufacturing and wholesale distribution. Permutations within these occur, whereby trading can be followed by further manufacturing and wholesale distribution, further processing can be followed by trading and wholesale distribution, and wholesale distribution can be followed by trading and further processing.

Ultimately the product will end up in one of the original two routes to market, being food services or retail.

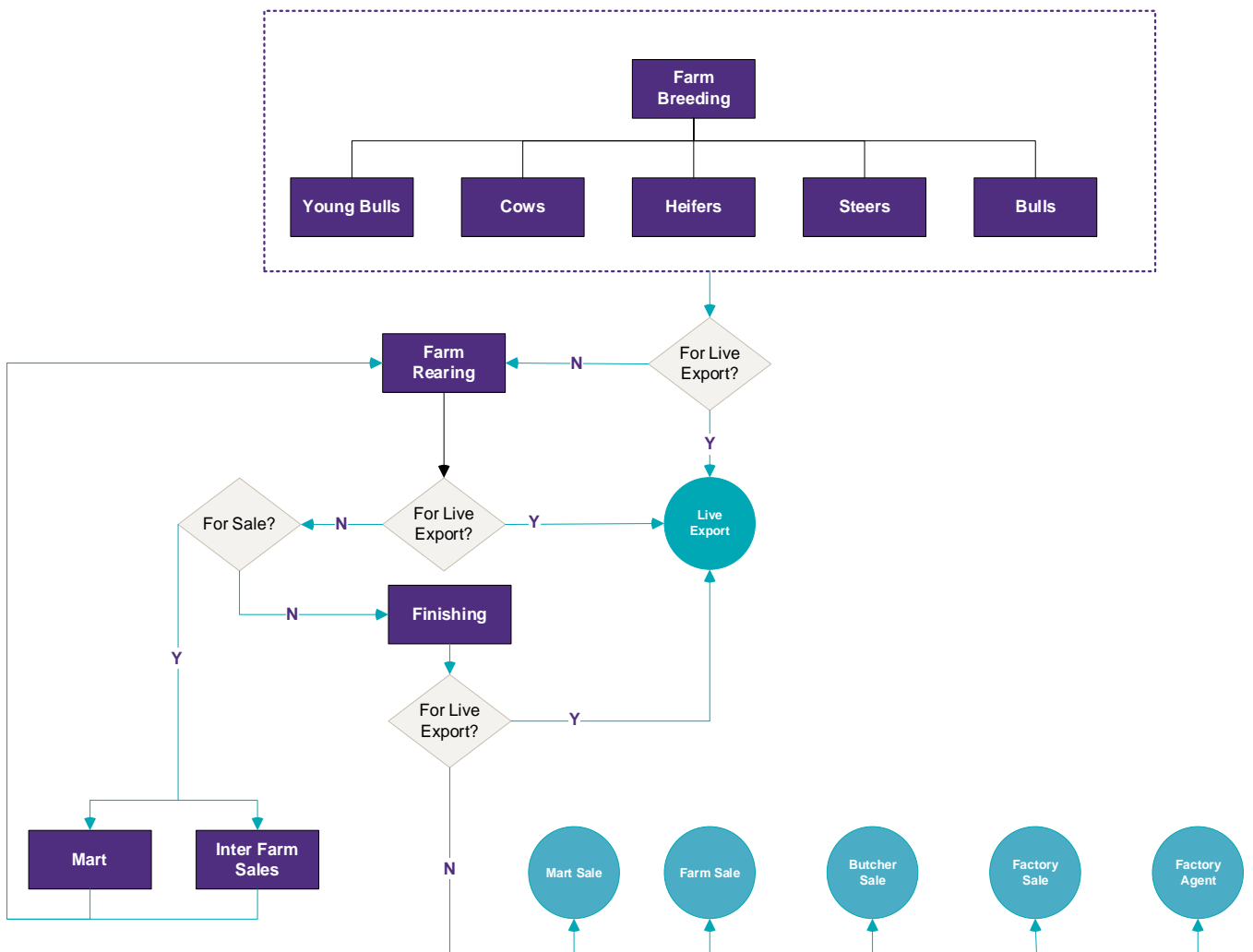
The exact route is determined by the business model and customer requirements of the purchaser at each stage.

For example, a cut of beef may be sold to a trader. The trader in turn may sell this product to a secondary processor. The secondary processor may mince this product for inclusion in a ready made meal. This ready made meal may be sold to a wholesale distributor who in turn sells it to a food service provider. The consumer then purchases the meal from the food services provider.

As described at the outset of this chapter, there can be multiple permutations and nuances throughout the supply chain. The following pages document each stage of the supply chain. The route of component parts to market is discussed on page 18.

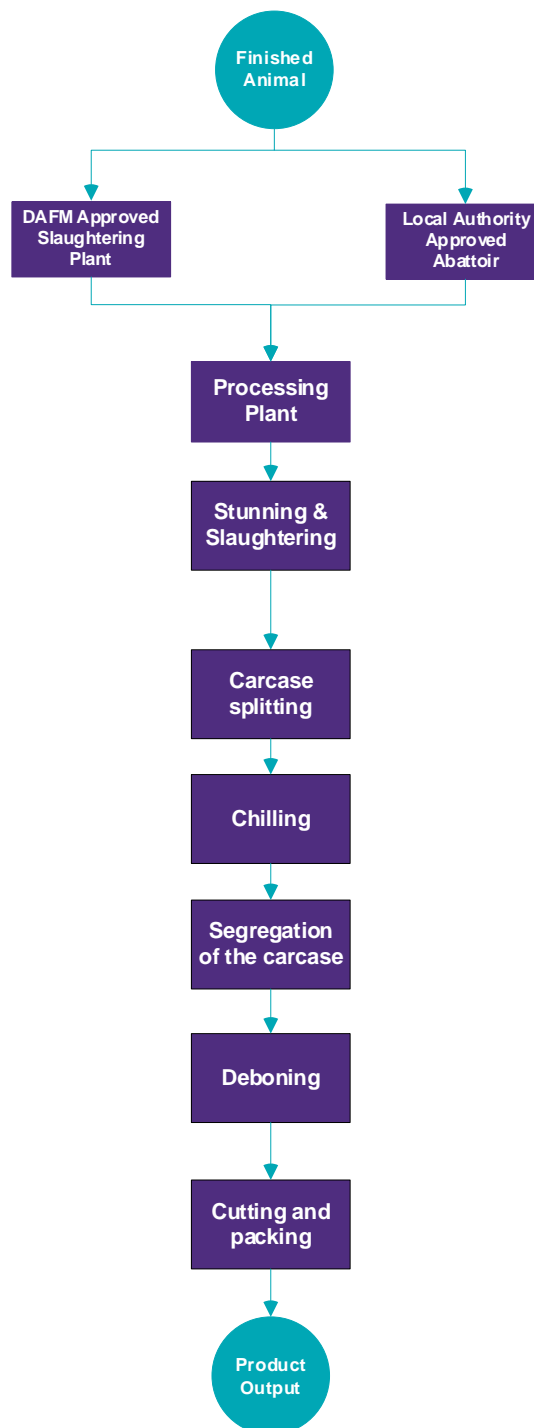
3. Irish Beef Supply Chain Map

Primary Production



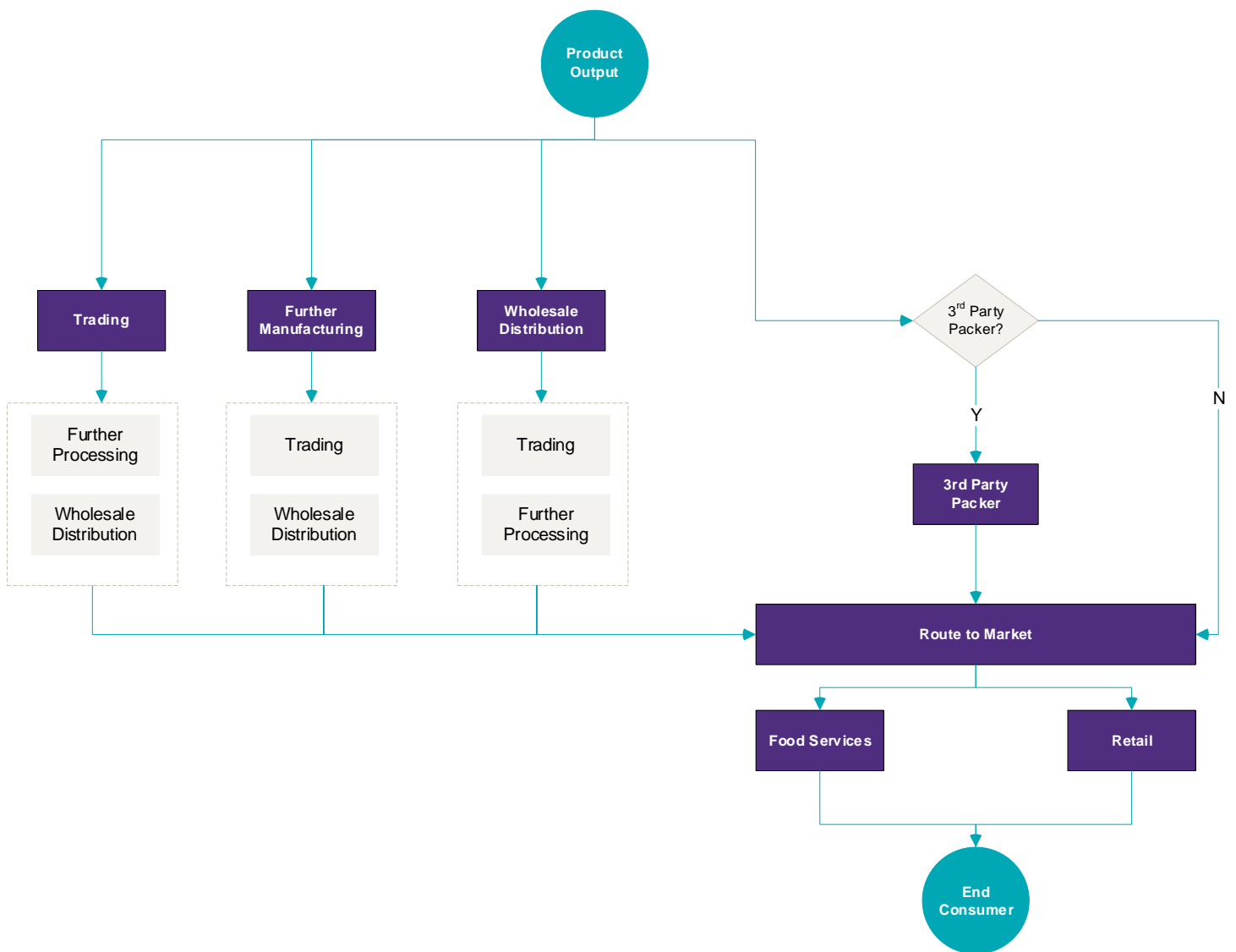
3. Irish Beef Supply Chain Map

Processing



3. Irish Beef Supply Chain Map

Route to Market



3. Irish Beef Supply Chain Map



Overview of the Irish Beef Supply Chain

Market Demand for Irish Beef

The processes in the 'disassembly' and supply chain of the beef sector are highly variable with a number of factors influencing the component mix. The only consistent parameters identified for classifying component parts are related to customs declarations. A detailed review of the components parts listed in Chapter 2, the volumes traded and the dominant market channels in each market, has been conducted. This review utilised CSO trade data and data provided, in confidence, by Irish beef processors and Meat Industry Ireland. Below, a high level overview of the findings is provided with more detailed analysis presented on the following pages.

Demand by Commodity

The top 10 commodity products sold on both the domestic and international markets account for 89% (595,042 tonnes) of the total volume of Irish beef traded, across an average of 2018 and 2019 volumes. "Fresh or chilled boneless meat" is by far the most dominant commodity, accounting for 45% of the volume of total beef exported. There is a significant decrease in volumes for other commodities in the top 10. The second in demand commodity is "frozen bovine boneless meat" which accounts for 11% of volumes sold.

Commodity	Rank by Volume	2018-2019 Avg. Volume (Tonnes)	% of Total Volume
Fresh or chilled bovine meat, boneless.	1	301,961	45%
Frozen bovine boneless meat (excl. forequarters, whole or cut into a maximum of five pieces, each quarter being in a single block 'compensated' quarters in two blocks, one of which contains the forequarter, whole or cut into a maximum of five pieces, and the other, the hindquarter, excl. the tenderloin, in one piece, crop, chuck and blade and brisket cuts).	2	76,288	11%
Frozen edible bovine offal (excl. for manufacture of pharmaceutical products, tongues, livers and thick and thin skirt).	3	39,770	6%
Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin > 16 kg, wet-salted.	4	37,808	6%
Prepared or preserved meat or offal of bovine animals, uncooked, incl. mixtures of cooked meat or offal and uncooked meat or offal (excl. sausages and similar products, and preparations of liver).	5	37,593	6%
Carcases or half-carcases of bovine animals, fresh or chilled.	6	26,061	4%
Fresh or chilled edible bovine offal (excl. for manufacture of pharmaceutical products, thick and thin skirt).	7	22,905	3%
Fresh or chilled edible bovine thick and thin skirt (excl. for manufacture of pharmaceutical products).	8	22,596	3%
Meat or offal of bovine animals, prepared or preserved, cooked (excl. corned beef in airtight containers, sausages and similar products, finely homogenised preparations put up for retail sale as infant food or for dietetic purposes, in containers of a net weight of <= 250 g, preparations of liver and meat extracts and juices).	9	19,546	3%
Frozen bovine cuts, with bone in (excl. carcasses and half-carcases, 'compensated' quarters, forequarters and hindquarters).	10	10,514	2%

3. Irish Beef Supply Chain Map



Overview of the Irish Beef Supply Chain contd.

Presentation of findings

In order to track products by key market and market segment the findings are presented on a market by market basis. Although Ireland exports beef to 78 countries, the top 10 countries account for 88% (589,627 tonnes) of the beef volumes sold. Therefore the analysis has focused on these markets. Where available, the findings present data on the market segments within each market, categorising the markets into:

Retail	All sales of beef that are sold in multiple retailers in the designated market other than product that is included as a meat ingredient.
Wholesale / Foodservice	All sales of beef that are ultimately sold in a foodservice restaurant (excluding QSR). Also any product that is sold on the wholesale market.
Manufacturing	All sales of beef that are ultimately sold as the meat ingredient in a food product and including those which are sold to Quick Service Restaurants.
Trading	All sales of beef that are ultimately sold into commodity trading.

An analysis of the demand within each segment is presented. The overall market demand is presented based on the volume of product destined for the market as a proportion of total volume produced. The key commodities driving the demand are analysed to determine the type of product destined for each market. Finally, where data was available, the product type was analysed to determine the primary product types destined for each market. Where the data was available this was analysed to determine the market segment for each product type.

The information utilised for analysis has been provided by the Central Statistics Office, a number of beef processors and Meat Industry Ireland.

Demand by Market

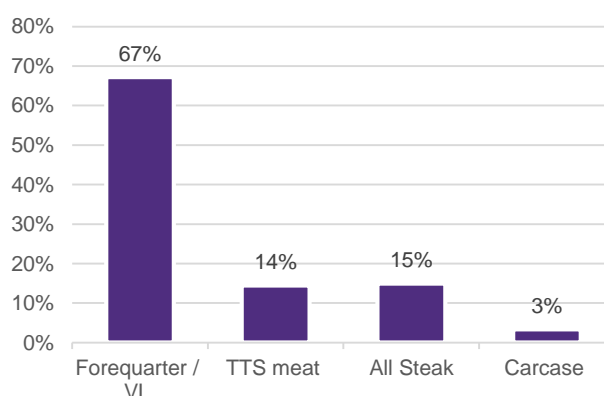
The UK remains Ireland's most important trading partner for beef in volume terms. The UK accounts for 40% of the volume traded. The domestic market is the second most important in volumes terms, but a significant way behind at 9%. The top 10 markets account for 88% of volumes sold.

Country	Rank by Volume	18-19 Avg. Volume (Tonnes)	% of Total Volume
UK	1	268,738	40%
Ireland	2	63,131	9%
France	3	62,842	9%
Netherlands	4	49,387	7%
Italy	5	40,577	6%
China	6	28,739	4%
Sweden	7	19,747	3%
Philippines	8	19,041	3%
Germany	9	18,910	3%
Hong Kong	10	18,514	3%

Demand by Product Type

Overall there is a strong demand for forequarter/ VL of Irish beef. This demand makes up 67% of all products sold. This outperformance of forequarters / VL over others cuts is also clearly reflected in the more detailed breakdown by country outlined over the coming pages. The second most in demand product across the period of 2018-2019 was steak cuts at 15%, and closely followed by TTS meat (Topside, Silverside and Knuckle) at 14%. The demand for carcasses comprised just 3% of total product sold.

Market Demand By Product Type



3. Irish Beef Supply Chain Map



Overview of the Irish Beef Supply Chain contd.

Demand by Product Type

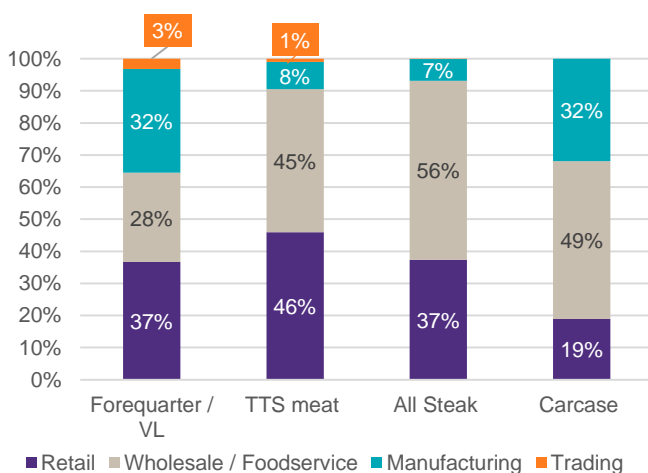
This demand by product type can be examined through the lens of how it reached the market. Forequarter / VL sold through the retail channel comprised 37% of sales, followed by the manufacturing route to market, at 32%. Wholesale/foodservice made up 28% of sales, with just 3% of forequarter / VL being sold through trading.

TTS meat was sold through two main channels; retail at 46%, and wholesale/foodservice at 45% of sales. The remaining product was sold through manufacturing at 8% of sales, and just 1% passing through trading.

Steak cuts were primarily sold through wholesale/foodservice, making up 56% of volumes. Retail accounted for 37%, and 7% was sold through manufacturing channels.

The demand for carcasses was strongest in the wholesale/foodservice channel, at 49%. Manufacturing accounted for 32% of sales, with retail taking the remaining 19% of sales.

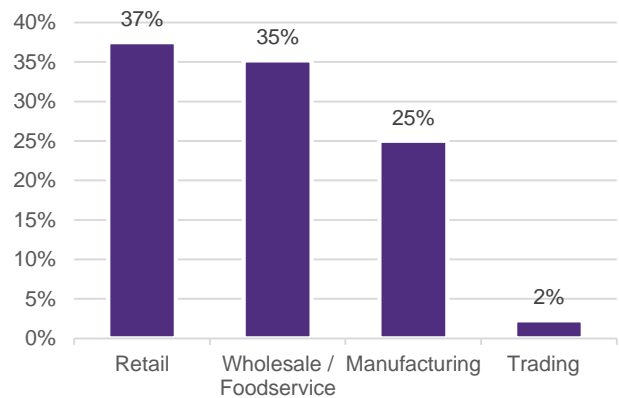
Market Demand By Product Type



Demand by Market Segment

Overall demand for Irish beef is concentrated in two channels in particular, the retail and wholesale/foodservice channels. Retail accounts for 37% of all beef sold in national and international markets, followed closely by wholesale/foodservice at 35%. The manufacturing channel makes up 25% of the remaining volumes, with just 2% of product being sold through trading channels.

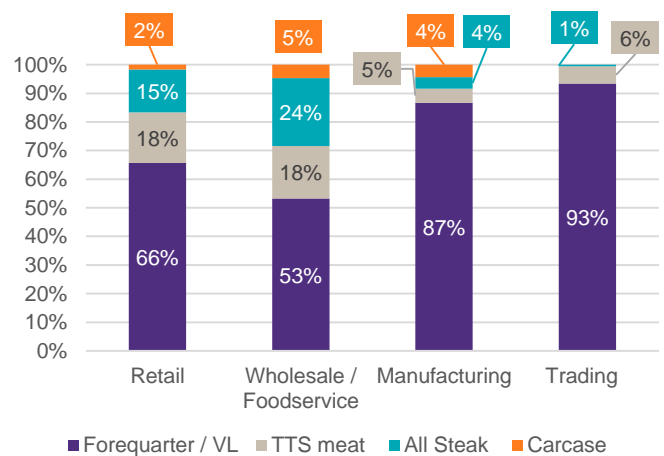
Market Demand By Segment



The manufacturing route to market has a very high demand for forequarter / VL product at 87% of sales into the channel, with the remainder split across 5% TTS meat, 4% steak cuts and 4% carcasses.

Trading also favours forequarter / VL at 93% of products sold, with TTS meat making up 6% of product sold, and the remaining 1% made up of steak cuts.

Market Demand By Segment



3. Irish Beef Supply Chain Map

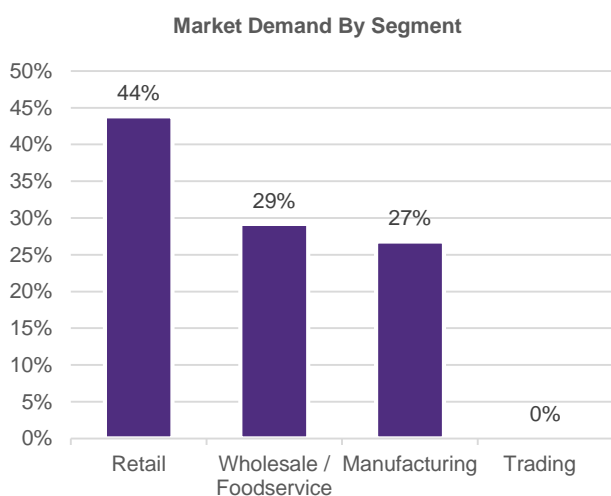


The United Kingdom

The United Kingdom remains Ireland's main export trading partner for beef. The market ranks number one in terms of export volumes, accounting for over 268,000 tonnes on average across 2018 and 2019.

Market Demand by Segment

Retail remains the dominant segment within the UK market for Irish beef. On average between 2018 and 2019 44% of exports destined for the UK market were retail bound. Wholesale/foodservice and manufacturing had a relatively even split of the remaining market, accounting for 29% and 27% respectively. There was a negligible amount of product sold into trading in the UK, accounting for less than 1% of export volumes.



A Bord Bia study examined data from 2013 -2017 and found that the UK market split for Irish beef was:

- Retail: 46%
- Wholesale/Foodservice: 22%
- Manufacturing: 32%

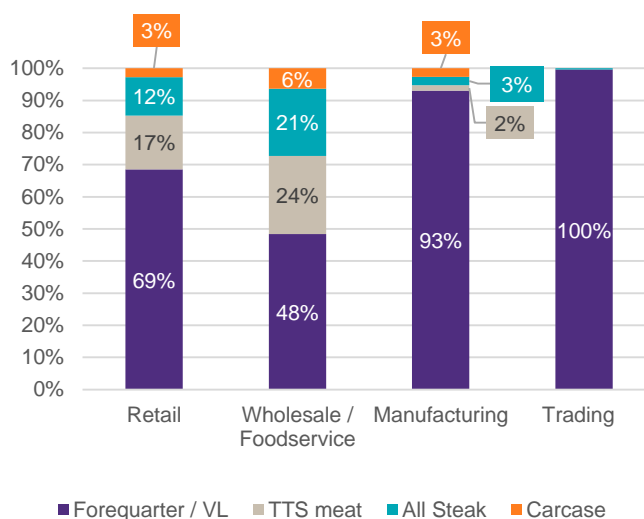
Based on our findings there has been a slight contraction in retail and manufacturing demand but significant growth in wholesale/foodservice demand in the UK market.

Our analysis of the most recent data available from Irish meat processors shows these channel splits to be largely in-line with those presented by Bord Bia.

These channel sales can be broken down further, examining what proportion of products make up their sales mix. Retail is comprised primarily of forequarter /VL product sales, at 68%,

followed by TTS meat at 17%, steak cuts at 12% and carcasses at 4%. The wholesale/foodservice channel is comprised of 47% forequarter / VL, and 24% TTS meat, 20% steak cuts and the remainder carcasses. The manufacturing channel is heavily reliant on forequarter / VL, making up 92% of sales. The same is true for trading, with the channel exclusively purchasing forequarter / VL products.

Market Demand By Segment



Market Demand by Commodity

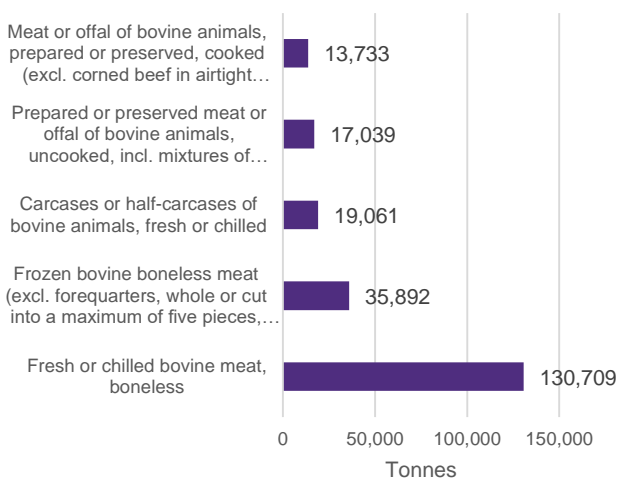
Almost 49% of the demand in the UK market is accounted for by a single commodity. "Fresh or chilled bovine meat, boneless" accounts for 130,709 of the 268,738 tonnes of beef exported to the UK market. This volume is significantly higher than second place, "Frozen bovine boneless meat" which accounts for just 35,892 tonnes of export to the UK market. The top five commodity exports to the UK accounted for 81% of total exports to the UK market.

3. Irish Beef Supply Chain Map



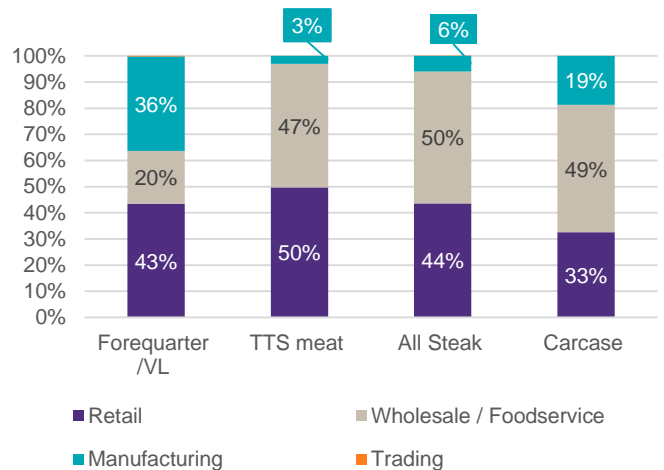
The United Kingdom contd.

Market Demand by Commodity



TTS meat has the greatest reliance on the retail channel, accounting for 50% of sales, with the majority of the remainder of TTS exports being sold through wholesale/foodservice channels at 47%. The reverse is true for steak cuts, with 50% sold through wholesale/foodservice, and 44% through retail channels. Carcase volumes rely heavily on wholesale at 49% of sales, with the remainder sold through retail (33%) and manufacturing (19%).

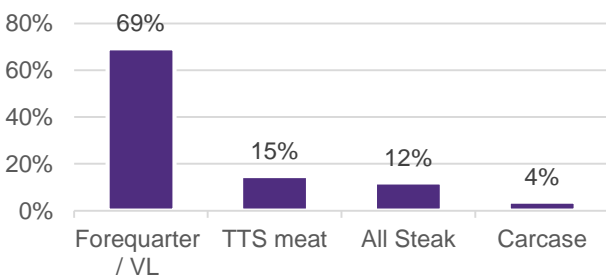
Market Demand by Product Type



Demand by Product Type

The UK market has a particular appetite for Irish forequarter / VL, which are the most in-demand of the product types identified, accounting for 69% of demand. Coming in a significant way behind at 15% is the demand for TTS meat, and closely followed by steak cuts at 12%. Carcase sales make up the remainder of the demand, at just 4%.

Market Demand By Product Type



The demand figures for each of these products can be further examined through the lens of the market channel in which they reach their customers. Forequarter / VL products are sold predominately through retail channels, accounting for 43% of their sales, followed by the manufacturing channel at 36%. Wholesale/foodservice channels account for the rest at 20%, and the amount of product sold through trading across all product types is negligible.

3. Irish Beef Supply Chain Map



Ireland*

The domestic Irish market is the second most important market for Irish beef sales. Nationally, over 63,000 tonnes of beef was purchased across an average of 2018 and 2019.

Market Demand by Segment

Market volumes are split relatively closely across the retail, wholesale/foodservice and manufacturing channels. Retail comprises 33% of sales, wholesale/foodservice holds 34%, and 29% enters the manufacturing channel. A small volume of just 4% enters the trading route to market.

Market Demand By Segment



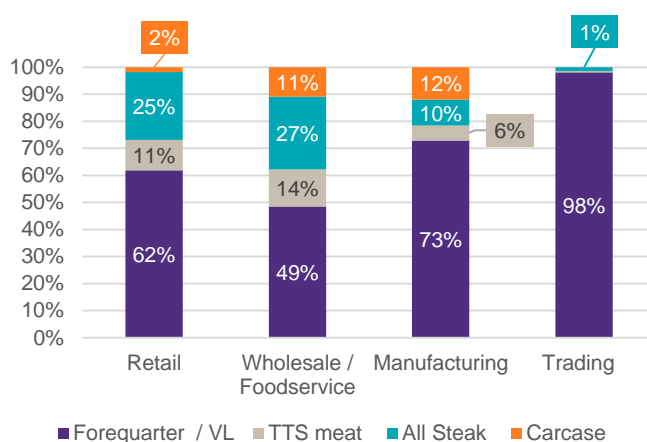
The product mix going into these channels is not as closely linked as the overall volumes between the channels. Retail sales are comprised primarily of forequarter / VL products at 62%, with steaks making up 25% of sales, and 11% TTS meat. Just 2% of retail purchases are of carcasses.

The wholesale/foodservice channel is also dominated by the demand for forequarters at 49% of products purchased, with steak cuts making up 27% of sales, and 14% comprised of TTS meat. Carcasses purchased make up 11% of the sales into this channel.

Forequarter / VL again dominate, making up 73% of products purchased in the manufacturing channel. Carcasses are the next favoured product, taking 12% of sales, followed by steak cuts at 10%, and the remaining 6% are TTS meat.

The trading channel is comprised almost exclusively of forequarter / VL at 98% of products purchased. Steak cuts make up the remaining volumes of products sold through this channel.

Market Demand By Segment

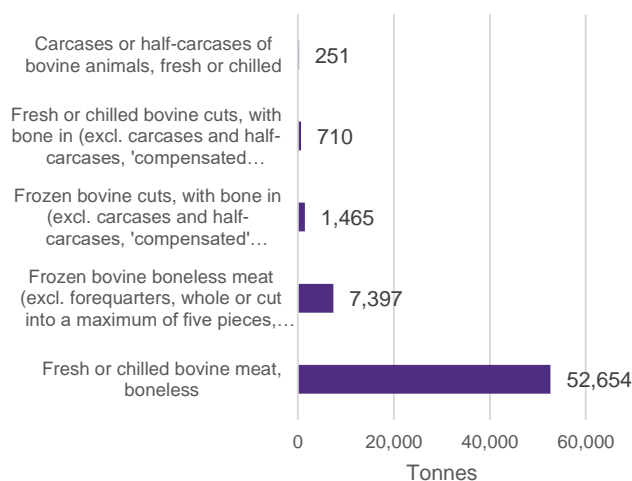


Market Demand by Commodity

There is a strong demand for “fresh or chilled bovine meat, boneless” in the domestic market, accounting for 83% of all commodity’s purchased. This equates to 52,654 tonnes of the total 63,131 tonnes of Irish beef sold nationally, across an average of 2018 and 2019.

This volume is more than seven times the second most purchased commodity, “frozen bovine boneless meat” which accounts for 7,397 tonnes of beef sold. The top five commodity products sold accounted for 99% of total sales.

Market Demand by Commodity



*It is estimated that the data provided accounts for 96% of the Irish Market

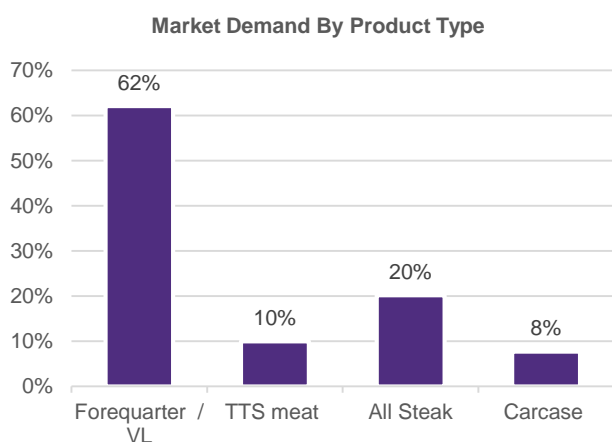
3. Irish Beef Supply Chain Map



Ireland contd.

Demand by Product Type

The domestic market is dominated by its demand for forequarter / VL, accounting for 62% of total product demand. Steak cuts make up 20% of sales, with TTS meat comprising 10% of demand. Carcase demand makes up the remaining 8%, across the average volumes for 2018 and 2019.



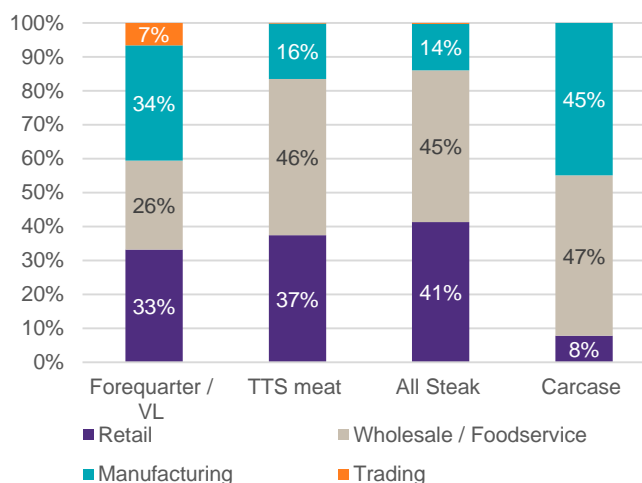
The demand for forequarter / VL meat is seen to be strongest in the manufacturing channel, at 34% of sales, just ahead of the retail channel at 33%. Wholesale/foodservice makes up 26% of forequarter / VL purchased, with 7% being sold through trading.

For TTS meat, demand is strongest in the wholesale/foodservice channel, at 46% of sales, with 37% entering the retail route to market. Manufacturing makes up the remaining 16% of sales.

Steak cuts are sold primarily through the wholesale/foodservice route to market, at 45% of demand, with 41% being taken by the retail channel. The remaining 14% enters the manufacturing channel.

The demand for carcasses is strongest in the wholesale/foodservice channel, making up 47% of sales. This is closely followed by the manufacturing channel, taking 45% of demand. The retail channel takes the remaining 8% of volumes.

Market Demand By Product Type



3. Irish Beef Supply Chain Map



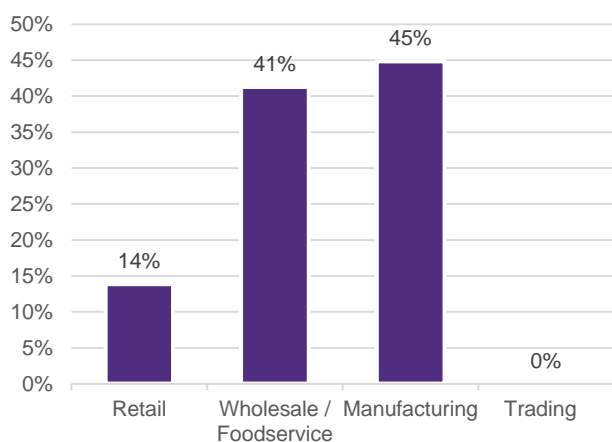
France

France is Ireland's second most important export trading partner for beef. The market ranks number three in terms of volumes sold, having exported just over 62,800 tonnes on average over 2018 and 2019.

Market Demand by Segment

Volumes are closely split between the wholesale/foodservice and manufacturing channels. Manufacturing is the largest route to market, accounting for 45% of sales, across an average of 2018 and 2019 volumes. The wholesale/foodservice channel follows closely at 41%, while there was 14% of product sold through retail channels. The data set used had no trading figures noted for the period reviewed.

Market Demand By Segment



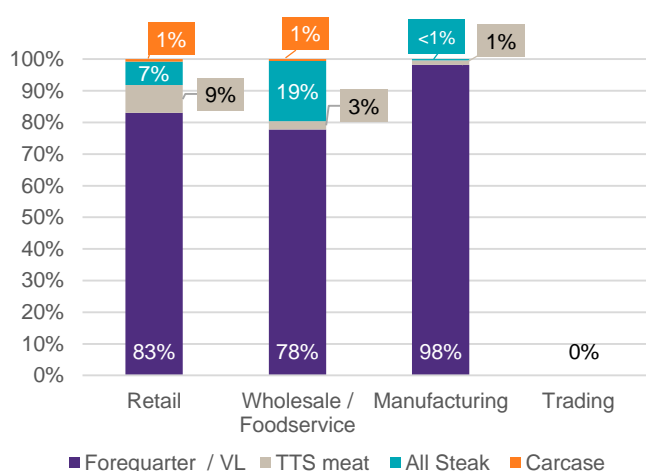
Further analysis of the proportion of the product mix going into each channel provides additional insights. The retail channel's demand for forequarter / VL stands at 83% of its purchases, with just 9% demand for TTS meat and 7% demand for steak cuts. A very small proportion of carcasses enter this channel, it accounts for 1% of products sold via this route to market.

Wholesale/foodservice also has a strong demand for forequarter / VL of Irish beef, making up 78% of product sold, with steaks making up 19%, and a small volume of just 3% of TTS meat and 1% carcasses.

The manufacturing channel is dominated by forequarters, comprising 98% of sales, with TTS meat accounting for around 1%, and a marginal amount of steak cuts demanded at less than 1%.

As stated previously, the data set used had no trading figures noted for the period under review.

Market Demand By Segment

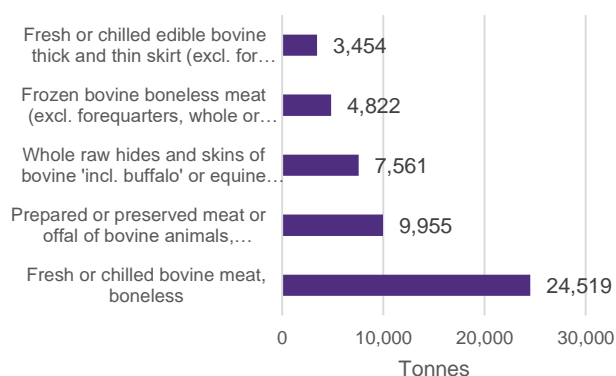


Market Demand by Commodity

There is a strong demand for "fresh or chilled bovine meat, boneless" commodity in the French market, accounting for 39% of all commodity's purchased looking at average volumes sold into France in 2018 and 2019. This equates to 24,519 tonnes of the total 62,842 tonnes of Irish beef sold into the market on average during that period.

This volume is more than double the second most purchased commodity, "prepared or preserved meat or offal of bovine animals" which accounts for just 9,955 tonnes of beef exported to France. The top five commodity exports to France accounted for 80% of total exports to the country or 50,311 tonnes.

Market Demand by Commodity



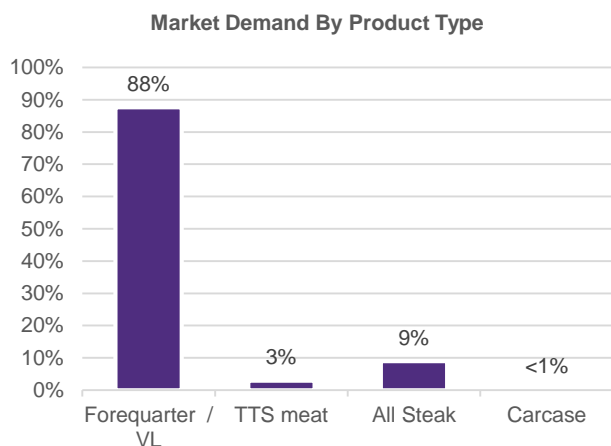
3. Irish Beef Supply Chain Map



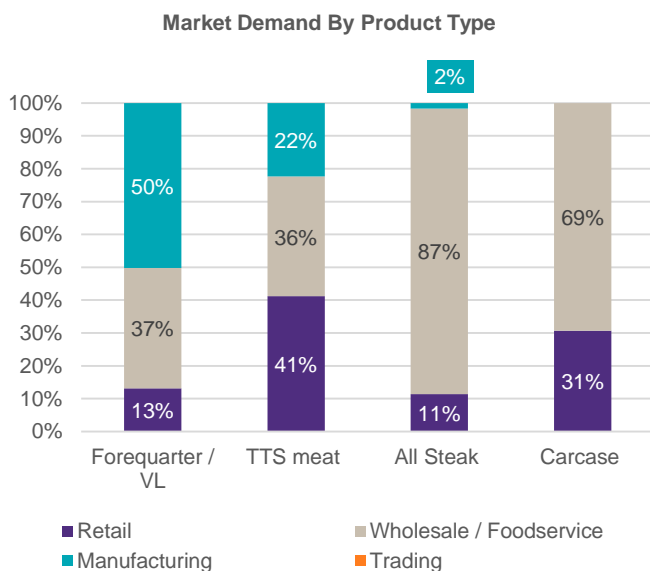
France contd.

Demand by Product Type

There is a strong demand for forequarter / VL beef in the French market. Forequarter / VL accounts for 88% of the demand while steak comes in second, accounting for 9% demand. Lastly, TTS meat accounts for 3% and there is less than 1% demand for carcass meat.



The demand figures for each of these products can be further examined through the lens of the market channel through which they reach the customer. Forequarter / VL are sold into the manufacturing sector predominantly, accounting



for 50% of sales, followed by wholesale/foodservice at 37%. Retail accounts for the balance, 13%, while there is no forequarter / VL product sold into trading within the data set analysed.

TTS meat is sold mainly into retail at 41%, wholesale/foodservice is a close second, accounting for 36% of demand. Manufacturing demand is at 22%, while trading accounts for less than 1%.

A high proportion of steaks are sold into wholesale/food service, 87%, retail follows at 11% and small proportion, 2%, flows into manufacturing.

Carcass meat accounts for less than 1% volume and of that volume, it is sold into two channels, wholesale/foodservice predominantly, followed by retail.

3. Irish Beef Supply Chain Map



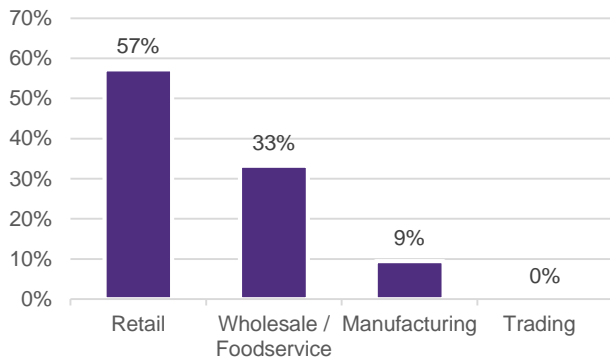
The Netherlands

Netherlands is Ireland's third most important export trading partner for beef. The market ranks number four in terms of volumes sold, having exported just over 49,000 tonnes on average in 2018 and 2019.

Market Demand by Segment

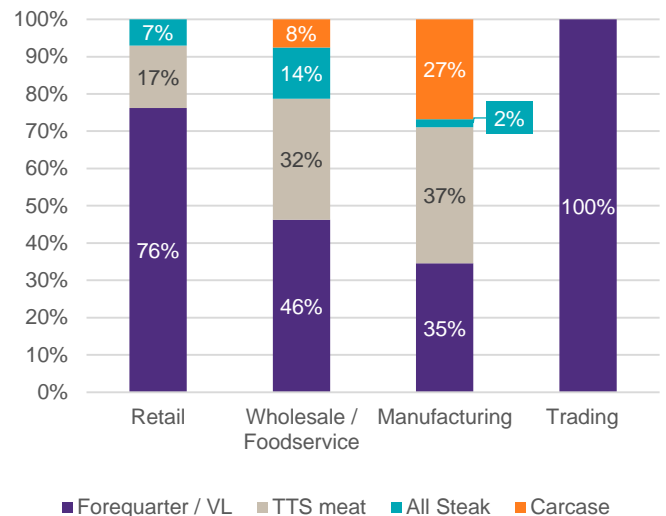
Retail volumes account for over half of the demand for beef, followed by wholesale/foodservice and manufacturing respectively. Trading has very low volumes compared to the other channels accounting for less than 1% of volumes (13 tonnes). Retail accounts for 57% of the demand, while wholesale/foodservice accounts for 33% and the bulk of the remaining tonnage goes into manufacturing.

Market Demand By Segment



On reviewing the product mix going into each channel, forequarter / VL is the only product entering the trading channel (<1%) in the Netherlands. The forequarter / VL accounts for the majority of beef going into the retail channel at 76% and wholesale/foodservice at 46%. For the manufacturing channel the forequarter / VL is second in terms of volume. In this route to market, TTS meat volumes are highest at 37% while the carcass accounts for 27%. The demand for the carcass meat is also within the wholesale/foodservice channel, however volume is much lower, it accounts for 8% of the volume. The volumes for steak cuts are low in the retail channel, acquiring only 7% of the volume. The demand is lower within the manufacturing channel, accounting for 2% of the volume. The majority of steak cuts is within wholesale/foodservice segment of the market, accounting for 14% of the volume.

Market Demand By Segment

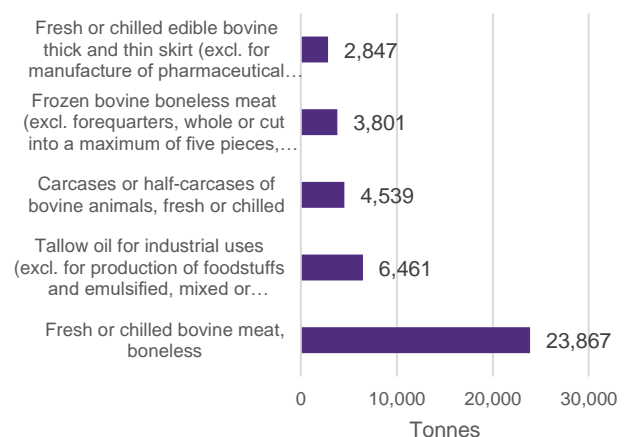


Market Demand by Commodity

In the Netherlands, the top five commodities account for 84% of the total Irish beef sold on average in 2018 and 2019. This equates to 41,515 tonnes of the total 49,387 tonnes of beef which entered the market during the period reviewed.

There is high demand for “fresh or chilled bovine meat, boneless”, it accounts for 48% of all commodity's purchased. This equates to 23,867 tonnes. The other commodities have significantly lower volumes. Demand for “tallow oil for industrial uses” is the next highest volume at 6,461 tonnes, “carcasses or half carcasses of bovine animals, fresh or chilled” comes next at 4,539 tonnes.

Market Demand by Commodity



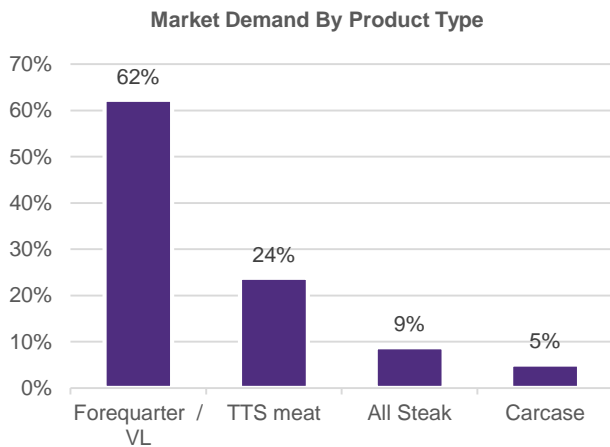
3. Irish Beef Supply Chain Map



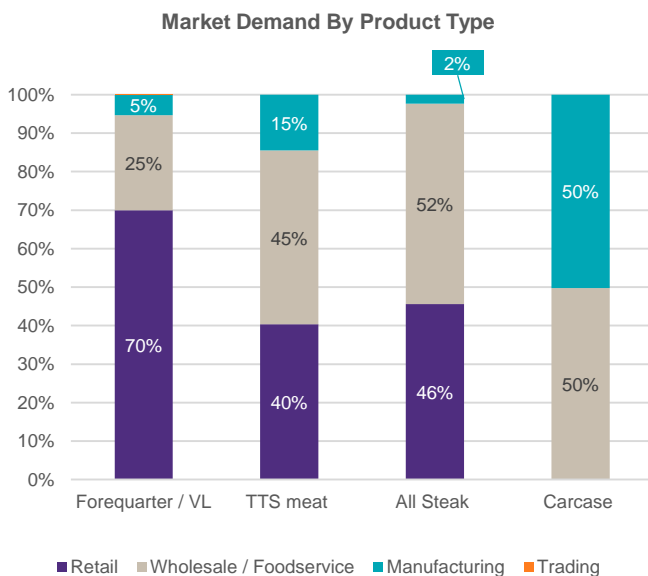
The Netherlands contd.

Demand by Product Type

Demand is high for forequarter / VL in the Netherlands. It accounts for 62% of the demand while TTS meat comes in second, accounting for 24% demand. Steak cuts follows with 9% and the carcasse lastly with 5% demand.



Further analysis examined the market channel that each beef product flows through before reaching the consumer. The retail and wholesale/foodservice channels are most dominant routes to market for forequarter / VL, TTS meat



and steak cuts. Of the 5% of carcasse meat sold, it is split evenly between wholesale/foodservice and manufacturing. Small volumes of the forequarter / VL, TTS meat and steak cuts go on to manufacturing.

Forequarter / VL is the most popular cut going into retail at 70% while TTS meat and steak cut retail volumes are lower at 40% and 46% respectively.

Steak cuts are most sought after by the wholesale/foodservice channel at 52%, followed closely by carcasse meat and TTS meat.

The trading volumes are very low in this data set and thus it is not represented on this graphic, however we do understand from previous graphs that the trading channel takes only forequarter / VL meat.

3. Irish Beef Supply Chain Map



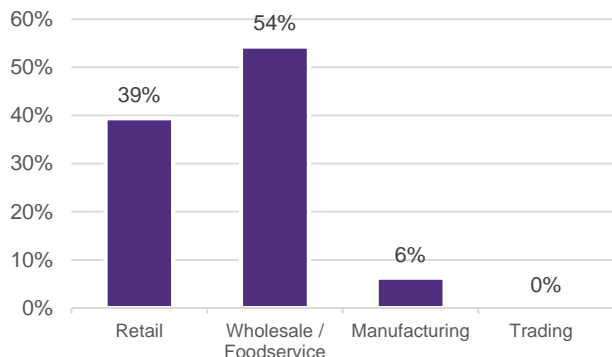
Italy

The Italian market is ranked in fifth place by volumes sold. On average in 2018 and 2019, the export volumes were just over 40,500 tonnes of beef. The volume of beef going to Italy accounts for 6% of the total Irish volume produced on average between 2018 and 2019.

Market Demand by Segment

In Italy, over half of the volume of Irish beef imported goes into the wholesale/foodservice channel. The retail channel is the second key channel for Irish beef at 39%, while a small proportion of beef goes into the manufacturing channel. From our data set, there is no demand from the trading channel for Irish beef.

Market Demand By Segment



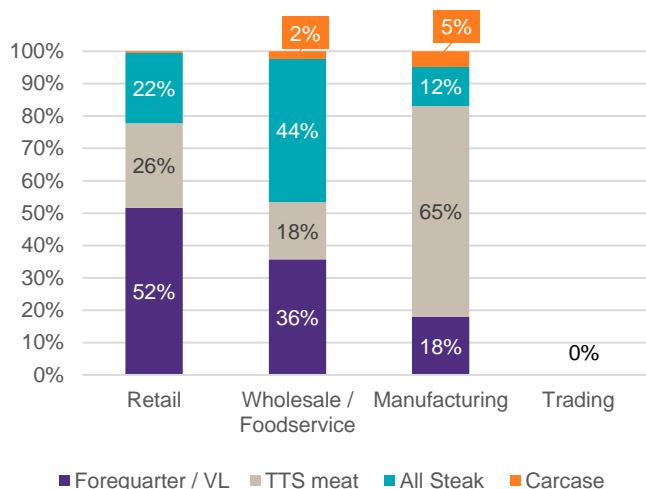
From analysis of the product mix for each channel, it is clear that there demand for forequarter / VL, TTS meat and steak cuts with smaller demand for the carcase.

For the retail channel, forequarter / VL accounts for just over half of the volume at 52% while the remaining volume is split 26% and 22% between TTS meat and steak cuts respectively.

The wholesale/foodservice channel in contrast has higher demand for steak cuts followed by relatively closely by forequarter / VL at 36%. TTS accounts for 18% of volumes while the carcase volumes are at 2%.

For the manufacturing channel, TTS meat is in high demand at 65% with smaller volumes of forequarter / VL and steak cuts going into this channel. Carcase volumes are a little higher than wholesale/foodservice channel at 5%.

Market Demand By Segment



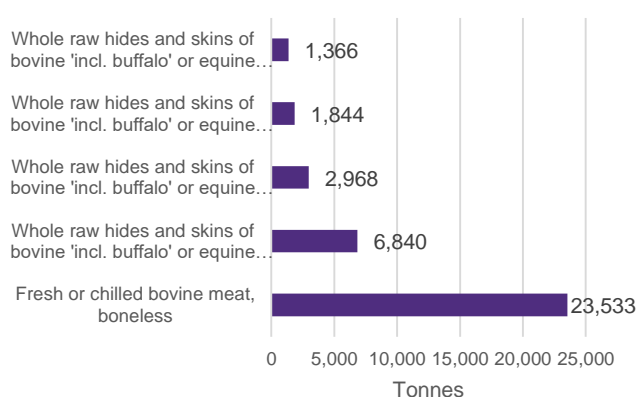
Market Demand by Commodity

The top five commodities for the Italian market are illustrated in the graph below. The top five commodities total 36,551 tonnes on average in 2018 and 2019 which accounts for 90% of Irish beef imports.

The majority of demand is for “fresh or chilled bovine meat, boneless”, it accounts for 58% of all commodity's purchased. This equates to 23,533 tonnes of the total 40,577 tonnes of Irish beef sold into the market on average in period 2018 and 2019.

The other commodities have significantly lower volumes. The total tonnage for the other commodities making up the top five is 13,018 tonnes. The largest of the four commodities is “whole raw hides and skins of bovine”.

Market Demand by Commodity



3. Irish Beef Supply Chain Map



Italy contd.

Demand by Product Type

Average volumes for 2018 and 2019 are split across mainly forequarter, steak cuts and TTS meat within the Italian market. Forequarter/ VL is most popular accounting for 41% of demand closely followed by steak cuts at 33% with TTS coming in at 24%. There is low demand for carcass meat at 2%.

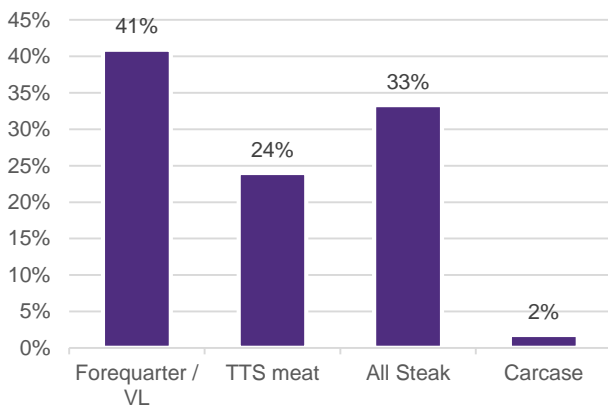
the wholesale/foodservice and manufacturing channels at 47% and 3% respectively. Similarly for TTS meat, the retail channel volume is highest at 43% followed closely by wholesale/foodservice at 40%. Remaining volume feeds into the manufacturing channel at 17%.

Steak cut volumes are predominantly taken by wholesale/foodservice channel with smaller volumes going to retail and manufacturing.

Of the 2% of carcass meat sold, the majority goes into wholesale/foodservice at 73%, the remaining volume goes into manufacturing and retail.

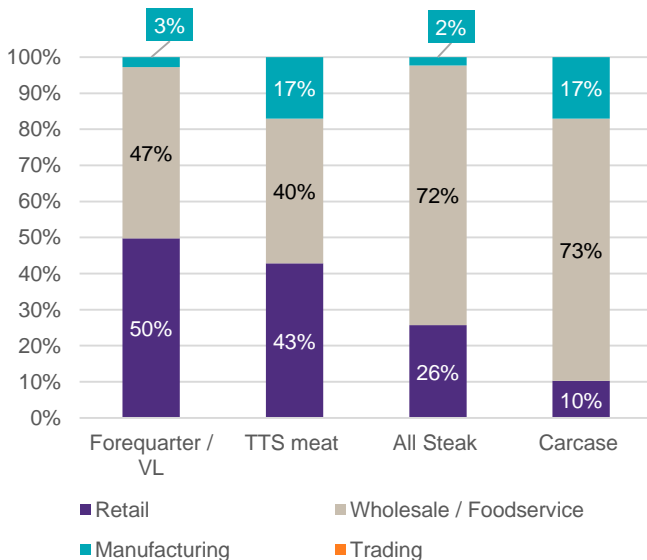
From the data set examined, there are no accounts of trading volumes.

Market Demand By Product Type



Examining the product mix going into each channel, it is clear that the retail and wholesale/foodservice channels are the most dominant. The retail channel takes half of the forequarter / VL volumes, the remaining volume is taken by

Market Demand By Product Type



3. Irish Beef Supply Chain Map



China

China is Ireland's fifth most important export trading partner for beef and ranks number six in terms of beef volumes sold. The market purchased over 28,500 tonnes across on average over 2018 and 2019.

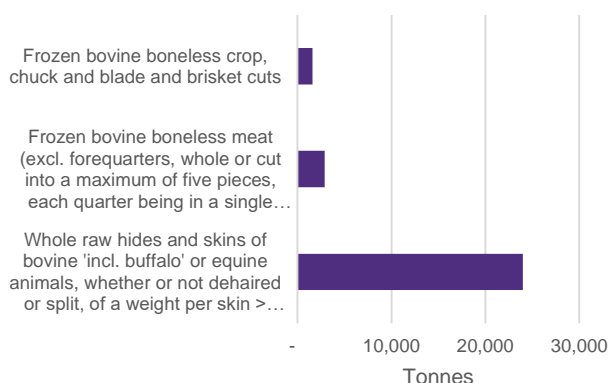
Market Demand by Commodity

There is a strong demand for "whole raw hides and skins of bovine" in the Chinese market, accounting for 83% of all commodity's purchased. This equates to 23,995 tonnes of the total 28,739 tonnes of Irish beef sold into the market, across an average of 2018 and 2019.

There is a significant decrease in volumes across the other commodities. The second highest volumes are for "frozen bovine boneless meat" which accounts for only 2,881 tonnes of beef exported to China. The top three commodity exports to China accounted for almost 100% of total exports to the country.

Data on the product types and route to market channels for the Chinese market was not available.

Market Demand by Commodity



3. Irish Beef Supply Chain Map



Sweden

Sweden is Ireland's sixth most important export trading partner for beef and ranks number seven in terms of volume. The market purchased over 19,500 tonnes across an average of 2018 and 2019.

Market Demand by Segment

Market volumes are dominated by the retail and manufacturing channels. Retail accounts for 48% of products purchased, while manufacturing accounts for 37%. The remaining volumes are purchased through the wholesale/foodservice route to market channels at 15% of exports. There was no product sold into trading in the Swedish market during this period.

Market Demand By Segment



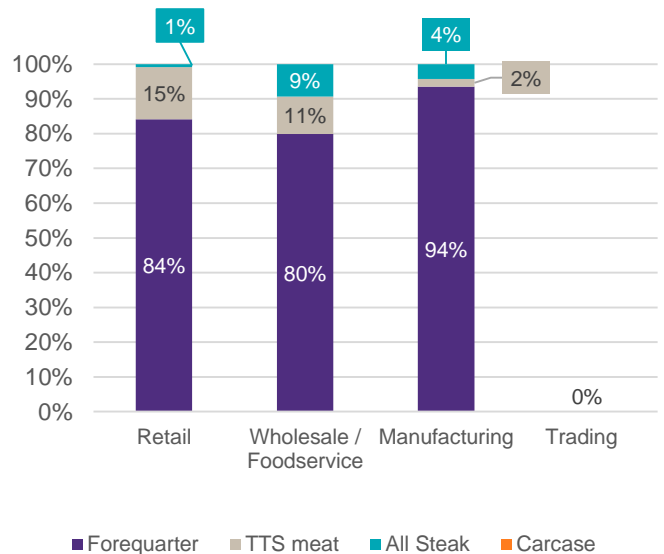
Analysis into these market segments highlights a particular appetite for forequarter / VL in the Swedish market. The retail channel is dominated by forequarter / VL sales, comprising 84% of the sales mix. TTS meat comprises 15% of sales, and just 1% of product is steak cuts.

The wholesale/foodservice channel has a slightly lower demand for forequarter / VL at 80% of exports. TTS meat follows next at 11% of product demanded and steak cuts make up the remaining 9% of demand.

The manufacturing channel is almost exclusively comprised of forequarter / VL, at 94% of sales. The remaining is split across 4% TTS meat and 2% steak cuts going into the segment.

The were no sales into trading recorded during this period.

Market Demand By Segment



Market Demand by Commodity

There is a strong demand for “fresh or chilled bovine meat, boneless” in the Swedish market, accounting for 38% of all commodity's purchased. This equates to 7,516 tonnes of the total 19,747 tonnes of Irish beef sold into the market, across an average of 2018 and 2019.

This volume is nearly double the second most purchased commodity, “fresh or chilled edible bovine offal (excl. for manufacture of pharmaceutical products, thick and thin skirt)” which accounts for 3,521 tonnes of beef exported to Sweden. The top five commodity exports to Sweden accounted for 92% of total exports to the country.

Market Demand by Commodity



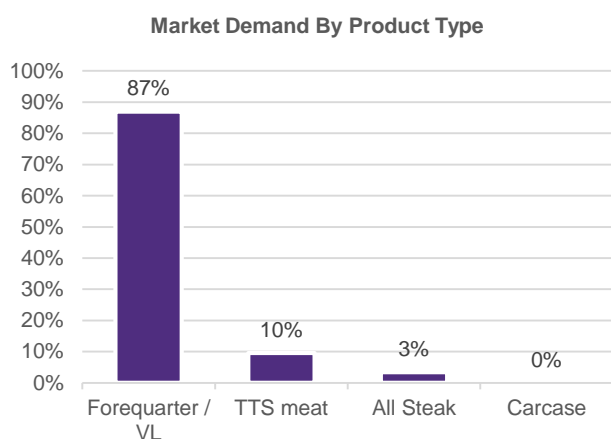
3. Irish Beef Supply Chain Map



Sweden contd.

Demand by Product Type

The Swedish market is dominated by its demand for Irish forequarter / VL, accounting for 87% of total product demand. Coming in a significant way behind at 10% is the demand for TTS meat, and the remaining demand at 3% is comprised of steak cuts, with no volumes of carcasses purchased recorded across 2018 and 2019.



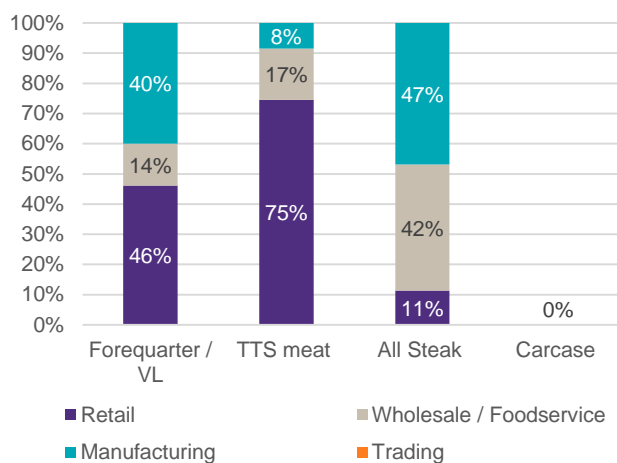
The high demand seen for forequarter / VL is predominantly between the retail and manufacturing channels. Retail purchases of forequarter / VL account for 46% of demand, while manufacturing takes 40% of the volume sold into the market. The wholesale/foodservice channel accounts for the remaining 14% of purchases.

Demand for TTS meat comes primarily through the retail channel, accounting for 75% of the product purchased. The wholesale/foodservice route to market purchases 17% of the product, with 8% of product entering the manufacturing channel.

Steak cuts are sold primarily through the manufacturing and wholesale/foodservice channels, accounting for 47% and 42% of demand respectively. The remaining 11% is sold into retail channel, with no product sold through trading across 2018 or 2019.

There were also no recorded sales of carcasses across this period.

Market Demand By Product Type



3. Irish Beef Supply Chain Map



The Philippines

The Philippines is Ireland's seventh most important export trading partner for beef and ranks number eight in terms of beef volumes sold. The market purchased over 19,000 tonnes across on average over 2018 and 2019.

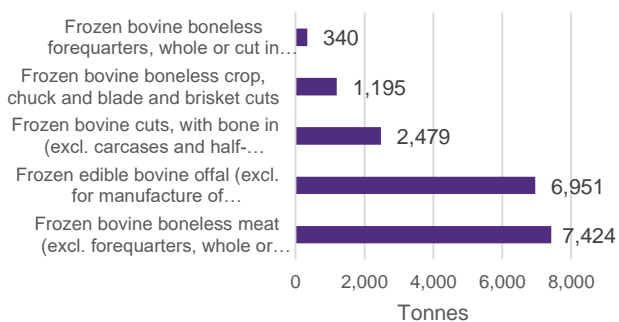
Market Demand by Commodity

There is a strong demand for "frozen bovine boneless meat" in the Filipino market, accounting for 39% of all commodity's purchased. This equates to 7,424 tonnes of the total 19,041 tonnes of Irish beef sold into the market, across an average of 2018 and 2019.

This volume is closely followed by the second most purchased commodity, "frozen edible bovine offal" which accounts for 6,951 tonnes of beef exported to the Philippines. The top five commodities exported to the Philippines accounted for 97% of total exports to the country.

Data on the product types and route to market channels for the Filipino market was not available.

Market Demand by Commodity



3. Irish Beef Supply Chain Map



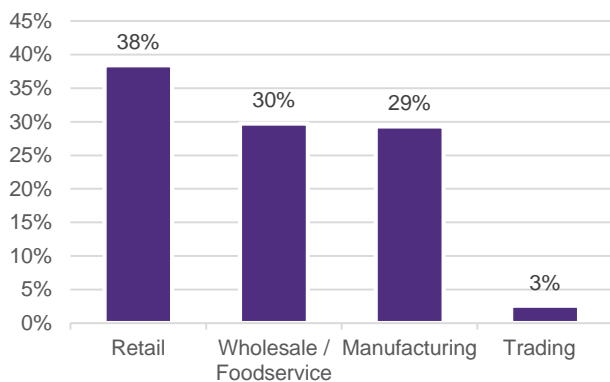
Germany

Germany is the eighth largest importer of Irish beef and ranks number nine in terms of volumes of beef sold. On average in 2018 and 2019, the Germans imported nearly 19,000 tonnes of Irish beef.

Market Demand by Segment

When segmenting the market, retail, wholesale/foodservice and manufacturing volumes are close with retail volumes slightly higher at 38%. Wholesale/foodservice and manufacturing volumes are neck and neck while trading volumes are low at 3%.

Market Demand By Segment

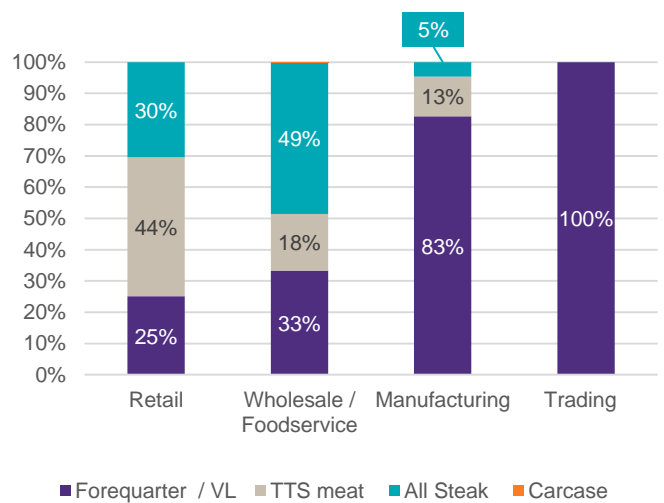


Looking at the supply chain channels by product mix, it is noted that forequarter / VL has good volumes across all channels. TTS meat and steak cut volumes are similar across the three channels they feed into. Carcase volumes were negligible.

In the retail channel, the split is highest for TTS meat at 44%, followed by steak cuts at 30% and forequarter is last at 25%. The wholesale/foodservice channel differs whereby steak cut volumes are highest accounting for almost half of the volume. The remaining volume is split 33% forequarter and 18% TTS meat.

The manufacturing channel sees the highest volume of forequarter at 83%, the remaining volume is TSS meat at 18% while steak cut volume is 5%. The trading channel solely demands forequarter in the German market according to the data supplied.

Market Demand By Segment



Market Demand by Commodity

The top five commodities sold in Germany are detailed in the graph below based on average volumes for 2018 and 2019. The top five commodities total 17,609 tonnes and account for 93% of the total imports of Irish beef.

There is high demand for “fresh or chilled bovine meat, boneless” as is seen in other markets. It accounts for 73% of all commodity’s purchased. This equates to 13,865 tonnes of the total 18,910 tonnes of Irish beef sold into Germany. There are visibly lower volumes for the other commodities. The second largest commodity is “fresh or chilled edible bovine offal” with volumes at 1,187 tonnes.

Market Demand by Commodity



3. Irish Beef Supply Chain Map



Germany contd.

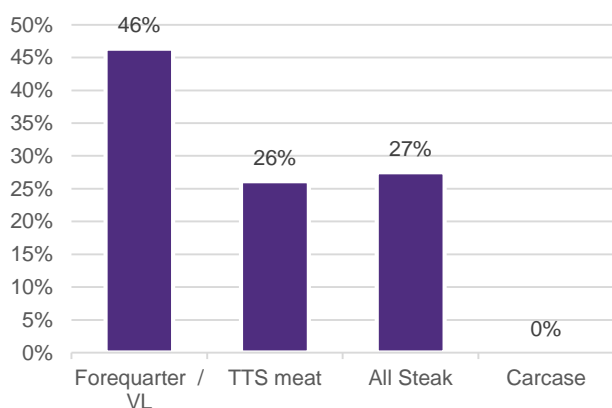
Demand by Product Type

In Germany, forequarter / VL is the most demanded Irish beef product, accounting for 46% of the volume. This is followed by TTS meat and steak cuts which have comparable volumes of 26% and 27% respectively. In the data set, carcasse volumes were negligible.

The majority of TTS meat goes into retail with the remaining 21% to wholesale/foodservice and 14% going into manufacturing.

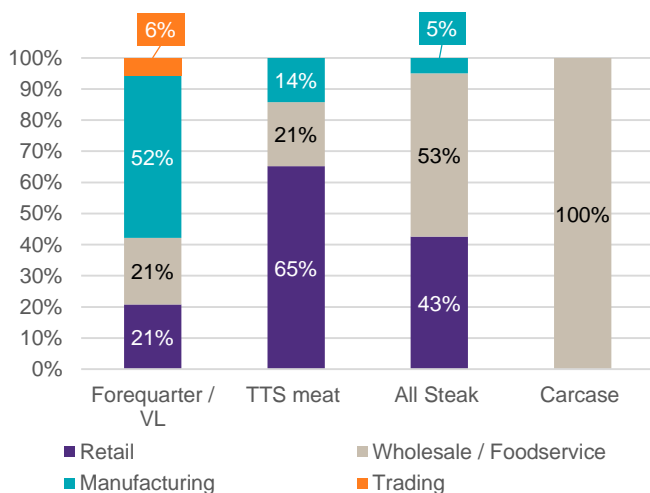
The manufacturing channel takes over half of the forequarter / VL volumes with the remain split evenly to wholesale/foodservice and retail. The trading channel only takes forequarter / VL at 6%.

Market Demand By Product Type



Taking a closer look at the supply channels for Irish beef, the volume of carcasse meat that is imported is going into the wholesale/foodservice channel. The same channel takes over half the volume of steak cuts. Of the steak cuts volume remaining, 43% goes into retail and 5% into manufacturing.

Market Demand By Product Type



3. Irish Beef Supply Chain Map



Hong Kong

Hong Kong is Ireland's ninth most important export trading partner for beef and ranks number ten in terms of beef volumes sold. The market purchased just over 18,500 tonnes across an average of 2018 and 2019.

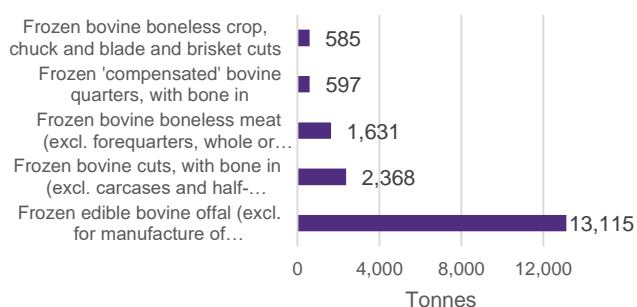
Market Demand by Commodity

There is a strong demand for "frozen edible bovine offal" in the Hong Kongese market, accounting for 71% of all commodity's purchased. This equates to 13,115 tonnes of the total 18,514 tonnes of Irish beef sold into the market, across an average of 2018 and 2019.

This second most purchased commodity, "frozen bovine cuts, with bone in" which accounts for 2,368 tonnes of beef exported to Hong Kong. The top five commodities exported to Hong Kong account for almost 100% of total exports to the country.

Data on the product types and route to market channels for the Hong Kong market was not available.

Market Demand by Commodity





4. Benchmarking of Price Points

4. Benchmarking of Price Points

Benchmarking of Price Points Across the Supply Chain

As stated in the introduction to this report it was not possible to ascertain a representative sample of the value of Irish beef to the end consumer. Completed data sets were received from purchasers of Irish beef across various routes to market and in various jurisdictions. However, the data does not constitute a representative sample. The possibilities of extrapolating indicators from this data or using secondary data to support the analysis were examined in detail. It was deemed that neither option would yield an accurate representation of the final market value of Irish beef.

Additionally, as already noted in Chapter 2, the complexities associated with the supply chain result in inconsistent mechanisms to track component parts. The only industry wide consistent parameters for tracking component parts are defined by Intrastat and customs systems. These commodity code definitions of all beef exports, including the fifth quarter have been used to ascertain the values of Irish beef exports into relevant markets. Additional data was provided by meat processors to support this analysis.

Data in relation to animal prices was ascertained from the Department of Agriculture, Food and the Marine. The data provided insights into the total number of animals slaughtered, weights and price per kilo. Additional information was provided by a representative sample of processors, through Meat Industry Ireland and this information was used to cross reference and validate the analysis conducted.

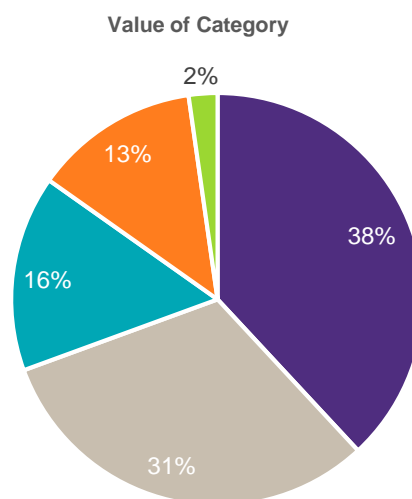
Farm Level Price Points

In order to determine farm level price points, the data ascertained from the Department of Agriculture, Food and the Marine was analysed. The average weight of each animal type over a two year time horizon was calculated. The weighted average price per kilogramme was calculated over the same time horizon. These were analysed in conjunction with the total number of animals slaughtered to determine the total value, on average over two years, of the animals slaughtered. This exercise was conducted based on the total number of animals slaughtered, average weights and weighted average prices. A comparable data set was ascertained from Meat Industry Ireland. This data set accounted for a representative sample of the industry, but not the whole industry. The information contained within the data set was based on the weights of the animals presented to their members and the prices paid for the animals over the same period.

To validate the analysis conducted on the total number of slaughtered animals, the numbers of animals per category from the Meat Industry Ireland data was modelled. In total,

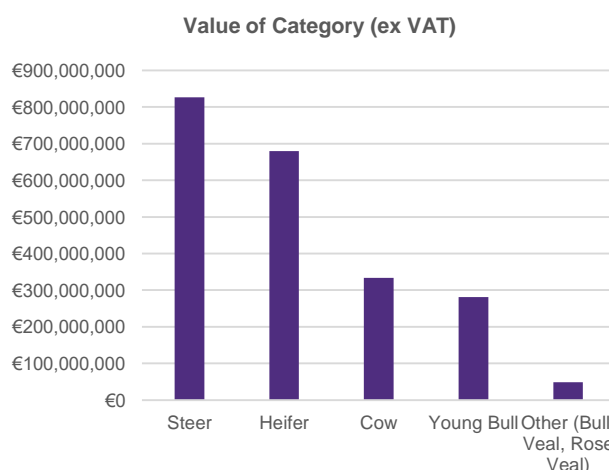
there was a variance of 0.49% between the two analyses. For steers this was +/- 0.94% with a smaller margin for cows and heifers (0.32%) and young bulls (0.29%). Overall, it was felt that the variance was at an acceptable level and could largely be explained by the use of averages and the mix of animals presented at MII's processor sites.

Almost 70% of the animals slaughtered over the period examined were steers or heifers. Cows accounted for 15%, young bulls accounted for 13% and other (bull, veal, rose veal) for 2%.



■ Steer ■ Heifer ■ Cow ■ Young Bull ■ Other (Bull, Veal, Rose Veal)

The aggregated value of animals slaughtered by category aligns with the volume slaughtered, with steers and heifers dominating.



4. Benchmarking of Price Points

Value of Animals Excluding VAT

2018 and 2019 Average value of Slaughtered Animals	Steer	Heifers	Cow	Young Bull	Other		
					Bull	Veal	Rose Veal
Total Slaughtered Animals	653,127	578,979	374,550	208,790	34,646	10,979	1,700
Average Weight (Kg Cold Carcase)	354	312	312	374	431	142	238
Weighted Average Price (VAT Exclusive)	€3.58	€3.77	€2.86	€3.61	€2.89	€2.79	€3.50
Total Value of Category	€826,551,180	€680,114,464	€333,634,158	€281,128,949	€43,154,167	€4,326,656	€1,413,707
Total	€2,170,323,282						

Value of Animals Including VAT

Analysis of Value of Slaughtered Animals	Steer	Heifers	Cow	Young Bull	Other		
					Bull	Veal	Rose Veal
Total Slaughtered Animals	653,127	578,979	374,550	208,790	34,646	10,979	1,700
Average Weight (Kg Cold Carcase)	354	312	312	374	431	142	238
Weighted Average Price (VAT Inclusive)	€3.77	€3.97	€3.01	€3.80	€3.05	€2.94	€3.77
Total Value of Category	€870,418,421	€716,242,723	€351,163,098	€295,945,732	€45,468,664	€4,567,458	€1,524,943
Total	€2,285,331,039						

Value of Animals

On average, over the two year period there were 1,862,769 animals slaughtered entering the beef supply chain, resulting in a total gross value of €2,170,323,282 (ex-VAT). This was value, and volume was dominated by the steer category with 653,127 animals slaughtered on average over the period in question. The average weight per cold carcase was 354kg and average price, excluding VAT was €3.58. Based on these figures the average annual gross value of the steer category over the two year period was €826,551,180. This figure increases to €870,418,421 when VAT is included.

This was closely followed by the Heifer category, where there were 578,979 animals entering the beef supply chain. The average weight was 312kg and average price €3.77. The total value of the Heifer category was €680,114,464. This figure increases to €716,242,723 when VAT is included.

The remaining three categories were significantly smaller. Cows accounted for 374,550 animals entering the processing supply chain and were on average 312kg. The average price per kg was €2.86. The cow category accounted for €333,634,158 in gross value. This figure increases to €351,163,098 when VAT is included.

Young Bulls made up 208,790 animals and on average weighed 374kg. They commanded a price of €3.61 per kg and accounted for a total value of €281,128,949. This figure increases to €295,945,732 when VAT is included.

The other category accounted for bulls, veal and rose veal. The numbers of each were extremely low and collectively the category accounted for €48,894,531 in gross value. This figure increases to €51,561,065 when VAT is included.

Across all categories the gross value of sales, ex VAT was €2,170,323,282 or €2,285,331,039 when VAT is included.

Additionally, the export market for Irish bovine animals returned €94,895,000 on average over 2018 and 2019 with 274,000 animals exported. A proportion of these animals originated in the dairy sector.

The analysis presented examines the categories in their entirety. There are a number of factors that will influence the price paid for an individual animal, including but not limited to, the breed and specification of the animal and market demand.

4. Benchmarking of Price Points

Processor Price Points

The price points for animals entering the processing supply chain have been identified using data provided by both the processing industry and the Department of Agriculture, Food and the Marine. On entering the processing supply chain animals are disassembled into a myriad of component parts. The only consistent data identified to determine the price point leaving the processing facility are defined by intrastat and customs systems. These are commodity code definitions of all beef exports, including the fifth quarter. Data for export volumes and values was ascertained from the CSO at commodity code level. Additional complementary data was provided by the processing sector. This data was consolidated to provide an overall picture of the value of beef products leaving the processing supply chain. This data was then analysed by destination, as presented in the previous chapter and by value by commodity code.

The data was initially cleansed and consolidated to ensure a robust data set. The data was then analysed to determine the gross value of the processing sector. Further granular analysis at commodity code level was then undertaken to identify the returns that the most popular commodities are generating. Additionally, the top markets for Irish beef were identified based on the volumes purchased and their commodity demand.

Over the two year average period Irish beef production was valued at €2,922,927,000. The vast majority of this product was exported. While Irish beef is exported to a plethora of countries across the globe, the top 10 markets account for 90% of the value of total production. Similarly while there are many commodity exports, the top five account for 73% and top 10 account for 89% of total production.

Of the €2,922,927,000 of Irish beef sold, €228,699,000 was classified as “Prepared or Preserved” product. It has not been possible to determine what, if any, proportion of this product was sold domestically to a secondary manufacturer who added value and then exported the product. As a proportion of this product may be emanating from primary processors it has been included in our analysis. Excluding Prepared and Preserved Products would bring the value of Irish beef sold down to €2,694,228,000.

Over the period examined there was on average €132 million worth of beef imported into Ireland. Approximately €21 million was classified as “Prepared or Preserved” product, presumed destined for sale. It has not been possible to determine what proportion of the remaining €111,366,000 worth of beef imports were destined for primary production.

Additionally, the hides and skins commodity codes include buffalo' or equine animals. As a proportion of these exports will come from the beef sector they have been included in our analysis, however a proportion of the total value of these commodity codes (€76,510,000) may not be attributable to the beef sector.

Price Points by Commodity

Utilising the full value of beef products identified (including prepared or preserved products and all hides and skins) the average price per kilo of Irish product sold was €4.35 over the 2018 and 2019. Unsurprisingly there is significant variance in the value of commodities, ranging from €0.30 a kilo for 'Butts, bends, bellies and split raw hides and skins of bovine 'incl. buffalo' or equine animals' to €6.25 a kilo for 'Fresh or chilled bovine meat, boneless', which is the most popular commodity.

A breakdown of the average commodity price across all markets for the ten most popular commodities is presented on the following page. There will be a number of factors influencing the prices commanded in each marketplace and the analysis presented is representative of the industry as whole across all markets and market segments.

4. Benchmarking of Price Points

Commodity	Rank by Volume	Avg. Price/kg (kg/€)
Fresh or chilled bovine meat, boneless.	1	€6.25
Frozen bovine boneless meat (excl. forequarters, whole or cut into a maximum of five pieces, each quarter being in a single block 'compensated' quarters in two blocks, one of which contains the forequarter, whole or cut into a maximum of five pieces, and the other, the hindquarter, excl. the tenderloin, in one piece, crop, chuck and blade and brisket cuts).	2	€3.33
Frozen edible bovine offal (excl. for manufacture of pharmaceutical products, tongues, livers and thick and thin skirt).	3	€1.98
Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin > 16 kg, wet-salted.	4	€1.10
Prepared or preserved meat or offal of bovine animals, uncooked, incl. mixtures of cooked meat or offal and uncooked meat or offal (excl. sausages and similar products, and preparations of liver).	5	€3.54
Carcases or half-carcases of bovine animals, fresh or chilled.	6	€3.63
Fresh or chilled edible bovine offal (excl. for manufacture of pharmaceutical products, thick and thin skirt).	7	€2.73
Fresh or chilled edible bovine thick and thin skirt (excl. for manufacture of pharmaceutical products).	8	€3.07
Meat or offal of bovine animals, prepared or preserved, cooked (excl. corned beef in airtight containers, sausages and similar products, finely homogenised preparations put up for retail sale as infant food or for dietetic purposes, in containers of a net weight of <= 250 g, preparations of liver and meat extracts and juices).	9	€4.74
Frozen bovine cuts, with bone in (excl. carcasses and half-carcases, 'compensated' quarters, forequarters and hindquarters).	10	€3.04

Market	Rank by Value	Average Value 2018 -2019 (€000)
UK	1	1,127,484
Ireland*	2	448,360
France	3	250,634
Italy	4	210,504
Netherlands	5	203,207
Germany	6	142,677
Sweden	7	84,800
Hong Kong	8	59,324
Spain	9	57,251
Belgium	10	57,125

4. Benchmarking of Price Points

Price Points By Market

These 10 markets account for the 88% of Irish beef exports. The market segments within these markets have been analysed where data was available to do so. The price points of the most popular commodities are presented. It should be noted that there may be a number of factors influencing the price points in these markets including, but not limited to, the composition of products exported under the relevant commodity code, the market segment they are destined for and value proposition of the product exported. It has been noted that it was not feasible to get information in more granular format than has been presented. While there is a standard definition for each commodity code, there may be some variance in the type of product exported under each code. This breakdown is based on the inclusion of Prepared or Preserved products:



UK

The UK market remains Ireland's main trading partner, accounting for 40% of total exports. In total value terms the UK market accounted for €1,127,484,000 on average in beef sales over the two year period. These exports were dominated by 'Fresh or chilled bovine meat, boneless' which accounted for almost half of total exports to the UK market. Fresh or chilled bovine meat, boneless commanded a price point of €5.18 per kilo on average, however the overall UK market was less lucrative, with the second most popular commodity, 'Frozen bovine boneless meat' able to generate €3.62 a kilo.

The UK market channel is dominated by retail (44%) with a relatively even split across Wholesale/Foodservice (29%) and Manufacturing (27%). Overall on average the UK market returned €4.20 per kilo over the two years. The top five in demand commodities in the UK market and their price per kg is outlined below:

Commodity in order of volume	Price per kg
Fresh or chilled bovine meat, boneless	€5.18
Frozen bovine boneless meat (excl. forequarters, whole or cut into a maximum of five pieces, each quarter being in a single block 'compensated' quarters in two blocks, one of which contains the forequarter..	€3.62
Carcases or half-carcases of bovine animals, fresh or chilled	€3.66

Prepared or preserved meat or offal of bovine animals, uncooked, incl. mixtures of cooked meat or offal and uncooked meat or offal (excl. sausages and similar products, and preparations of liver)	€3.77
Meat or offal of bovine animals, prepared or preserved, cooked (excl. corned beef in airtight containers, sausages and similar products, finely homogenised preparations put up for retail sale as infant food or for dietetic purposes, in containers of a net weight of <= 250 g, preparations of liver and meat extracts and juices).	€4.30



Ireland

The domestic market in Ireland remains a significant buyer of Irish beef products. Over the period examined key customers in the market purchased for 63,000 tonnes of Irish beef. 'Fresh or chilled bovine meat, boneless' dominated the market, accounting for 83% of products sold and commanding a price of €7.73 a kilo. The return from the next most popular commodities were significantly less, with the exception of 'Fresh or chilled bovine cuts, with bone in (excl. carcasses and half-carcases, 'compensated quarters', forequarters and hindquarters)' which returned €9.85 per kilo. However, it is worth noting that during the period examined there was on average only 710 tonnes traded per annum. The market segmentation in Ireland is almost evenly distributed across Retail (32%), Wholesale/Foodservices (34%) and Manufacturing (29%) with trading accounting for just (4%) of product sold in Ireland. Overall on average the Irish market returned €7.10 per kilo over the two years. The top five in demand commodities in the Irish market and their price per kg is outlined below:

Commodity in order of volume	Price per kg
Fresh or chilled bovine meat, boneless	€7.73
Frozen bovine boneless meat (excl. forequarters, whole or cut into a maximum of five pieces, each quarter being in a single block 'compensated' quarters in two blocks, one of which contains the forequarter..	€3.42
Frozen bovine cuts, with bone in (excl. carcasses and half-carcases, 'compensated' quarters, forequarters and hindquarters)	€3.92
Fresh or chilled bovine cuts, with bone in (excl. carcasses and half-carcases, 'compensated quarters', forequarters and hindquarters)	€9.85
Carcases or half-carcases of bovine animals, fresh or chilled	€3.61

4. Benchmarking of Price Points



France

France represents the third most valuable market in for Irish beef in both volume and value terms. Over the two year period France accounted for 9% of Irish beef produce. The average annual value of the French market for Irish beef is €250,634,000. This demonstrates the dominance of the UK market, which returns more than four times as much as the French market. Similar to the UK market, the commodity in greatest demand in France is 'Fresh or chilled bovine meat, boneless', account for 39% of total exports. The market value for 'Fresh or chilled bovine meat, boneless', in France is marginally higher than the UK at €5.47, however the volumes are significantly lower.

The French market channel is largely focused on manufacturing at 45% of volumes, followed closely by wholesale/foodservice at 41%. The average price paid by the French market over the 2018-2019 period was €3.99/kg. The top five in demand commodities in the French market and their price per kg is outlined below:

Commodity in order of volume	Price per kg
Fresh or chilled bovine meat, boneless	€5.47
Prepared or preserved meat or offal of bovine animals, uncooked, incl. mixtures of cooked meat or offal and uncooked meat or offal (excl. sausages and similar products, and preparations of liver)	€3.62
Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin <= 16 kg, wet-salted	€1.01
Frozen bovine boneless meat (excl. forequarters, whole or cut into a maximum of five pieces, each quarter being in a single block 'compensated' quarters in two blocks, one of which contains the forequarter..	€3.34
Fresh or chilled edible bovine thick and thin skirt (excl. for manufacture of pharmaceutical products)	€3.93



Netherlands

The data illustrates that the Netherlands ranks fourth for volume and fifth for value, with on average €203,207,000 in exports of Irish beef per annum destined for the Netherlands. The vast majority of these exports are again dominated by 'Fresh or chilled bovine meat, boneless' which, in the Dutch market commands a price of €6.33 per kg. However, exports of this commodity to the Netherlands averaged less than 24,000 tonnes over the two year period. This equates to less than 20% of the volumes destined for the UK market. The average price per kilo across all commodities exported to the Netherlands was €4.11.

The primary market segment for Irish beef produce destined for the Netherlands is retail, accounting for over half of all product exported in the examined period.

Wholesale/Foodservices accounted for just over a one third, while 10% of the product was destined for further manufacturing. The top five in demand commodities in the Dutch market and their price per kg is outlined below:

Commodity in order of volume	Price per kg
Fresh or chilled bovine meat, boneless	€6.33
Tallow oil for industrial uses (excl. for production of foodstuffs and emulsified, mixed or otherwise prepared)	€0.43
Carcases or half-carcases of bovine animals, fresh or chilled	€3.56
Frozen bovine boneless meat (excl. forequarters, whole or cut into a maximum of five pieces, each quarter being in a single block 'compensated' quarters in two blocks, one of which contains the forequarter.	€2.41
Fresh or chilled edible bovine thick and thin skirt (excl. for manufacture of pharmaceutical products)	€1.33

4. Benchmarking of Price Points



Italy

The Italian market is the fifth most popular destination for Irish beef in volume terms and fourth in value, with an average market value of just over €210 million.

The market for Irish beef in Italy is almost wholly dominated by 'Fresh or chilled bovine meat, boneless', accounting for over 23,000 tonnes from a total average of 40,577 tonnes exported over the two year period. This commodity delivers a strong return, yielding on average €7.24 a kilo. Over half (54%) of the Irish beef product destined for the Italian market goes into the Wholesale/Foodservices segment. Retail accounts for 39% with Manufacturing (6%) and Trading (<1%) making up the remainder of the market for Irish beef. Overall the average price per kilo of product destined for the Italian market was €5.19. The top five in demand commodities in the Italian market and their price per kg is outlined below:

Commodity in order of volume	Price per kg
Fresh or chilled bovine meat, boneless	€7.24
Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin > 16 kg, wet-salted	€1.46
Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin <= 16 kg, fresh	€1.74
Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin > 16 kg, fresh	€1.32
Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin <= 16 kg, wet-salted	€1.61



China

China is the sixth most popular destination for Irish beef by volume, and eleventh by value, with average sales of €43m, and volume of over 28,000 tonnes.

Specific data on the route to market for Irish beef in China was unavailable. There is a strong demand for 'Whole raw hides and skins of bovine 'incl. buffalo' or equine animals' which are the most purchased product, accounting for 83% of volumes sold. Frozen commodities were the 2nd, 3rd and 4th the most popular products, particularly 'Frozen bovine boneless meat' which accounted for 10% of Irish beef product exported. The average price per kilo for Irish beef going into China was €1.52. The top five in demand commodities in the Chinese market and their price per kg is outlined below:

Commodity in order of volume	Price per kg
Whole raw hides and skins of bovine 'incl. buffalo' or equine animals, whether or not dehaired or split, of a weight per skin > 16 kg, wet-salted	€0.95
Frozen bovine boneless meat (excl. forequarters, whole or cut into a maximum of five pieces, each quarter being in a single block 'compensated' quarters in two blocks, one of which contains the forequarter..	€4.04
Frozen bovine boneless crop, chuck and blade and brisket cuts	€5.26
Frozen edible bovine offal (excl. for manufacture of pharmaceutical products, tongues, livers and thick and thin skirt)	€4.14
Fresh or chilled bovine meat, boneless	€5.31

4. Benchmarking of Price Points



Sweden

Sweden ranks seventh in terms of value and volume of Irish beef sold. On average over the two year period examined Ireland exported 19,747 tonnes of product valued at €84.8 million.

The route to market for Irish beef in Swedish is dominated by the retail market accounting for 48%. This is followed by manufacturing at 37% and wholesale/foodservice at 15%.

Although 'Fresh or chilled bovine meat, boneless' remains the most popular commodity, it is less dominant in the Swedish market than some of the other markets examined previously. 'Fresh or chilled bovine meat, boneless' accounted for 38% (7,516 tonnes) of Irish beef exports. The second most popular commodity 'Fresh or chilled edible bovine offal (excl. for manufacture of pharmaceutical products, thick and thin skirt)' accounts for 18% of exports and the third most popular 'Fresh or chilled edible bovine thick and thin skirt (excl. for manufacture of pharmaceutical products)' marginally less at 17%.

The average price per kilo of Irish beef produce exported to Sweden over the two year period was €4.29 a kilo. The top five in demand commodities in the Swedish market and their price per kg is outlined below:

Commodity in order of volume	Price per kg
Fresh or chilled bovine meat, boneless	€5.29
Fresh or chilled edible bovine offal (excl. for manufacture of pharmaceutical products, thick and thin skirt)	€3.32
Fresh or chilled edible bovine thick and thin skirt (excl. for manufacture of pharmaceutical products)	€3.61
Prepared or preserved meat or offal of bovine animals, uncooked, incl. mixtures of cooked meat or offal and uncooked meat or offal (excl. sausages and similar products, and preparations of liver)	€4.24
Frozen bovine boneless meat (excl. forequarters, whole or cut into a maximum of five pieces, each quarter being in a single block 'compensated' quarters in two blocks, one of which contains the forequarter.	€3.37



Philippines

The Philippines is the eighth most popular export market for Irish beef in volume terms. Over the two year period reviewed Ireland exported on average 19,041 tonnes of beef to the Philippines, delivering just over €37m to the Irish beef sector. Given the geographic distance between Ireland and the Philippines it is unsurprising that frozen products dominated the market demand. 'Frozen bovine boneless meat (excl. forequarters)' was the most popular commodity accounting for 39% of exports. This was closely followed by 'Frozen edible bovine offal' which accounted for 37% of exports. The average price per kilo of product exported to the Philippines was €1.96, significantly lower than some of the other markets already reviewed. Data on the route to market for Irish beef into the Philippines wasn't available. The top five in demand commodities in the Filipino market and their price per kg is outlined below:

Commodity in order of volume	Price per kg
Frozen bovine boneless meat (excl. forequarters, whole or cut into a maximum of five pieces, each quarter being in a single block 'compensated' quarters in two blocks, one of which contains the forequarter..	€2.05
Frozen edible bovine offal (excl. for manufacture of pharmaceutical products, tongues, livers and thick and thin skirt)	€1.58
Frozen bovine cuts, with bone in (excl. carcasses and half-carcasses, 'compensated' quarters, forequarters and hindquarters)	€2.43
Frozen bovine boneless crop, chuck and blade and brisket cuts	€2.34
Frozen bovine boneless forequarters, whole or cut in max. 5 pieces, each quarter in 1 block; 'compensated' quarters in 2 blocks, one containing the forequarter, whole or cut in max. 5 pieces, and the other the whole hindquarter, excl. the tenderloin, in one piece.	€2.61

4. Benchmarking of Price Points



Germany

The German market is the ninth most important by volume and sixth by value, with an average market value of €142m.

The route to market for Irish beef in Germany is not dominated by a single channel. The retail market accounts for 38%, closely followed by wholesale/foodservice accounting for 30% and manufacturing 29%. The remaining 3% of product is destined for trading in the German market.

The market is dominated by 'Fresh or chilled bovine meat, boneless', which accounts for almost three quarters of the total exports over the years examined. The volumes are low, at less than 14,000 tonnes, however the price is higher than many other markets at €8.55 a kilo. While this price may be comparably strong, the second most traded commodity is 'Fresh or chilled edible bovine offal' which returns €4.19 a tonne. The volumes for the third, fourth and fifth most popular commodities falls below 2,000 tonnes each, with the fourth most popular 'Frozen bovine boneless meat (excl. forequarters)' trading less than 1,000 tonnes per annum on average. The average price per kilo in the German market was €7.55. The top five in demand commodities in the German market and their price per kg is outlined below:

Commodity in order of volume	Price per kg
Fresh or chilled bovine meat, boneless	€8.55
Fresh or chilled edible bovine offal (excl. for manufacture of pharmaceutical products, thick and thin skirt)	€4.19
Prepared or preserved meat or offal of bovine animals, uncooked, incl. mixtures of cooked meat or offal and uncooked meat or offal (excl. sausages and similar products, and preparations of liver)	€5.04
Frozen bovine boneless meat (excl. forequarters, whole or cut into a maximum of five pieces, each quarter being in a single block 'compensated' quarters in two blocks, one of which contains the forequarter..	€3.61
Fresh or chilled edible bovine thick and thin skirt (excl. for manufacture of pharmaceutical products)	€3.84



Hong Kong

Hong Kong is the tenth most popular destination for Irish beef by volume, and eighth by value, with average sales of €59m, and volume of over 18,000 tonnes.

Specific data on the route to market for Irish beef in Hong Kong was unavailable. Similar to the Philippines the most popular commodities were frozen, particularly 'Frozen edible bovine offal (excl. for manufacture of pharmaceutical products, tongues, livers and thick and thin skirt)' which accounted for 71% of Irish beef product exported. The average price per kilo for Irish beef going into Hong Kong was €3.20.

Commodity in order of volume	Price per kg
Frozen edible bovine offal (excl. for manufacture of pharmaceutical products, thick and thin skirt)	€2.94
Frozen bovine cuts, with bone in (excl. carcasses and half-carcasses, 'compensated' quarters, forequarters and hindquarters)	€4.01
Frozen bovine boneless meat (excl. forequarters, whole or cut into a maximum of five pieces, each quarter being in a single block 'compensated' quarters in two blocks, one of which contains the forequarter..	€3.60
Frozen 'compensated' bovine quarters, with bone in	€5.18
Frozen bovine boneless crop, chuck and blade and brisket cuts	€2.88



5. Analysis and Conclusion

5. Conclusion

Conclusion

In presenting this report, Grant Thornton have considered the requirement to be able to substantiate the findings of this report with representative data. It has only been possible to conduct robust analysis where a substantive data set was provided to Grant Thornton. The absence of substantive data has directly impacted the analysis that can be conducted.

The beef supply chain is, at a high level, divided into three main functions: primary production, processing and route to market. The supply chain for primary production ordinarily follows three key steps: breeding, rearing and finishing, although a number of other steps also take place. The finished animal will ultimately end up in a production facility. At this stage the disassembly process commences. This process involves dividing the animal into a large number of component parts. The yield from the animal is influenced by a number of factors including weight, specification and cutting or customer requirements. This process is highly exposed to volatility. Changing customer requirements can create a reactive process rather than a proactive process. Processors are forced to adapt to customer demands and change forecasted or planned outputs to meet customer needs. The outputs from the production phase of the supply chain can follow a number of routes to markets. Products may be sold directly to retailer or food services customers who sell them to consumers. These products may also go to the retailer or food services customers via a third party packer. Alternatively, products may be sold into a secondary processor or manufacturer who will then alter the format of the product and sell it on. Products can be sold into wholesale distributors who will sell the product on or can be sold into commodity traders who will further trade the product. There are many permutations that the product could follow but the end destination is almost exclusively into food services or retail and on to the end consumer.

There is a high demand for Irish beef amongst customers across the globe with Ireland exporting the vast majority of production. This demand has been built up over time and the quality and sustainability standards set in Ireland have supported in creating such a demand. The majority of this demand comes from near markets, who can purchase fresh or chilled Irish beef products. The UK market is the number one destination for Irish beef, followed by the domestic market. Demand from markets further away such as China and the Philippines tends to be for frozen product and hides.

Route to market data available indicates that there is a relatively even split in demand from retail (37%) and Wholesale/Foodservice (35%), although this position varies in some individual markets. Manufacturing accounts for 25% of the market demand for Irish beef with the proportion of beef sold into commodity trading accounting for just 2%.

Forequarter and VL cuts are by far the most popular, accounting for 67% of market demand. While this dominance is consistent in many markets there is some variance in demand. TTS meat and steak cuts command similar demand accounting for 14% and 15% respectively. Carcase product accounts for just 3%.

Over the period examined Ireland slaughtered, on average, 1.86 million cattle per annum. The steer and heifer categories accounted for the vast majority of animals slaughtered into the beef supply chain. The VAT inclusive value of animals slaughter over the period examined was €2,285,331,039. In addition to this €2.28 billion value of animals slaughtered, a further €132 million of product is imported, albeit €21 million of this is prepared for preserved and unlikely to enter the primary processing stage.

To establish a benchmark price point it is necessary to use comparable metrics. Animals purchased for slaughter are purchased inclusive of VAT. Beef products sold are subject to 0% VAT. Therefore changes in VAT rates could potentially skew benchmark price points. Examining these benchmark price points exclusive of VAT gives a more comparable benchmark. The value of animals for slaughter exclusive of VAT was €2,170,323,282.

The value of the sale of beef products from Ireland was €2,922,927,000. This value consists of €228 million of prepared or preserved products. A proportion of these prepared or preserved products may be double accounted for in the total value as they have been sold into secondary processing/manufacturing and captured as an Irish sale and captured again as an export from the secondary processors. Data to determine the proportion that falls into this category wasn't available. The value of the sale of beef products excluding prepared or preserved products was €2,694,228,000.

When all beef products are accounted for (commodities listed on page 10), including prepared or preserved products Ireland produces 672,072 tonnes. The average price per kilo across all markets was €4.35 a kilo.

Data to determine the final value of Irish beef as paid by the consumer was not available. To determine this the data would have to be sourced from customers of Irish beef directly. While a number of customers provided data sets, these did not constitute a representative sample. The potential to utilise secondary data to support this analysis was examined. A number of barriers exist to using secondary data. While, for some markets there is good retail level data, it is often not categorised by country of origin. Therefore the retail price within certain markets will be distorted by domestic production and imports from other jurisdictions and not reflect an accurate price for Irish beef. There is little or no

5. Conclusion

data available on the valuation of beef prices within the food services sector. For example, it is impossible to determine without accurate data the value of beef from the price of a burger. While beef may be the primary component the seller will also factor in other components such as the bun, the dressing etc.

Products sold into manufacturing face a similar challenge to food service. Beef products often make up a component part of a value add product and in the absence of data it is impossible to accurately apportion the value of beef from the total price of the product.

Product that is sold into trading can be traded multiple times before it reaches the consumer. During this process the product can be fundamentally altered or subjected to changing market conditions which will materially impact its value.

The absence of data on the final price paid for Irish beef by consumers globally makes it impossible to accurately allocate price points along the supply chain. The data presented accounts for only a proportion of the final supply chain for Irish beef.

To ensure a representative sample of data was utilised, and to ensure the confidentiality of commercially sensitive data, data was collected in the most consistent format. As a consequence some data was not available at more granular levels of detail than those presented within the report.

The beef supply chain is complex. The analysis within this report reflects a point in time. Market and customer volatility are likely to lead to changes in demand and pricing over time and the contents of this report will need to be regularly updated to maintain relevance to the sector.



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