Cold Storage Capacity in Wales

Bwyd a Diod Cymru
Food & Drink Wales

1. Definitions, market trends and drivers

Summary

- Cold storage capacity should be seen in the context of a 'just-in-time' model of food production and distribution, within which the emphasis is on the efficient movement of chilled and frozen stock across the cold chain
- In this context, demand for cold storage capacity is rising. Over the long term, this is mostly driven by an increasing product range and changing retail patterns, rather than by demand to hold greater volumes of stock
- The market for cold storage is generally very competitive. Costs are high (compared with regular warehousing), and downward pressure on prices by retailers is strong
- In anticipation of Brexit-related disruption, there is strong evidence of manufacturers and retailers booking up additional space. There appears to be almost no spare capacity (although the market does not generally operate with large volumes of spare capacity).

Defining cold storage...

1.1 Broadly, 'cold storage' is defined as *"the storage of any temperature-controlled substance that prevents the substance from decaying, or not adhering to laws and regulations"*[1]. This covers the storage of a wide range of products, to a range of temperatures:

- in the **food** sector (which accounts for the great majority of demand), frozen foods are stored at between -20°C and -29°C and frozen meat at around -10 ; chilled produce (such as cheese) is generally stored at between 2 and 4°C[2], and other food products have a range of different temperature requirements. Cold storage facilities will also generally offer 'blast freezing' for goods that need to be frozen quickly prior to onward distribution
- in the **pharmaceuticals** sector, 'pharmaceutical grade' cold storage is essential to hospitals, research institutes and biopharmaceuticals companies for the storage of blood, vaccines and so on.

1.2 Unsurprisingly, **cold storage is much more highly regulated, and significantly less generic than general warehousing**. It is also important to note **that cold storage is just one part of the wider 'cold chain'**: ensuring temperature control from storage to transportation and final distribution is vital, and much cold storage capacity is operated by integrated cold chain logistics businesses.

1. This definition is taken from Winnesota, a US cold storage and logistics firm (www.winnesota.com); the Valuation Office Agency's Rating Manual uses a similar definition (https://www.gov.uk/guidance/rating-manual-section-6-part-3-valuation-of-all-property-classes/section-280-cold-stores)
2. Valuation Office Agency, Rating Manual Section 6, Part 3, Section 280.

… and sources of cold storage supply

1.3 Cold storage capacity is provided by a wide range of business types, within a fairly complex market. In broad terms, operators of cold storage include:

- **food manufacturers and producers**, operating their own on-site cold storage facilities. Typically, these are attached to the firm's manufacturing plant and will allow it to carry out blast freezing and storage before onward distribution to customers. Part of the food manufacturing sector is accounted for by **foodservice** businesses, which aggregate supplies for the catering market and which include both large firms and smaller regional businesses. For smaller users, there is also a market in the hire and purchase of mobile refrigerated units
- **end-users** (i.e. storage operated by the final product distributor). The main operators in this category are the major supermarket chains running their own warehousing facilities
- **third party logistics (3PL) businesses**, which provide storage and/or transport for a range of manufacturers and end-users, and which include multinational logistics operators as well as smaller local and regional firms. Typically, 3PL stores will tend to consist of a number of chambers operating at different temperatures to accommodate a range of goods. While much of the discussion on shortages in supply has been focused on 3PL operators, it is important to note that they only account for part of overall cold storage capacity.

General market trends

The long term

1.4 A review of industry reports and market intelligence highlights some key long term 'demand side' trends that are impacting the market for cold storage:

- **long term demand for capacity is rising**. The UK frozen food market (worth around £8.1 billion in 2017 according to the British Frozen Food Federation) has grown faster than food retail sales overall in recent years, with much of the increase driven by increased demand for goods with a complex range of ingredients (such as frozen confectionary) and premium products making use of 'locally sourced' ingredients[3]. In consultation, operators have highlighted the increased range of products on the market (including chilled goods that rely on previously-frozen ingredients), which is leading to increased (and more differentiated) demand for storage space.
- **the nature of retail demand is changing**, particularly given consumer preferences for smaller and more frequent purchases and the rise of online retailing. This is leading to an emphasis on shorter delivery times and more complex travel patterns, a trend which is reported as giving larger and more flexible operators a competitive advantage[4]. Across the year, food sector cold storage capacity demand tends to be cyclical, peaking before Christmas and Easter.
- **costs are relatively high**, given stringent regulation, the diversity of product-specific requirements and cold storage types, the need for integration with refrigerated distribution and (in older stock) high energy use. At the same time, food manufacturer and supermarket requirements are driving up standards, with low demand for lower quality supply.

> "The industry has been very price pressured, and this has scared people off from investing, especially in smaller markets like Wales"
>
> Food manufacturer

- **despite these high costs, there is very strong downward pressure on prices** from retailers in a very competitive consumer market. On the one hand, this has led to investment in automation and greater energy efficiency[5]. On the other, there is a view from operators and food manufacturers that relatively small margins impede a willingness (and ability) to invest.
- **there is a trend for food manufacturers to invest in their own cold storage space**, partly to enable them to take greater control of their own stock (rather than outsourcing it to 3PL operators)[6].

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3. *Food Manufacturer* (30 July 2017), 'Retail frozen food sales grow to £5.8 billion' (https://www.foodmanufacture.co.uk/Article/2017/07/28/British-frozen-food-sales-grow). Foodservice sales accounted for a further £2.4 billion.
4. Global Cold Chain News (February 2016), 'State of the UK Market' (http://www.globalcoldchainnews.com/wp-content/uploads/2016/02/Special-Report-State-of-UK-market-2014.pdf)
5. Cold Chain News (15 January 2016), 'Lack of warehousing drives demand for handling technology' (http://www.globalcoldchainnews.com/lack-of-warehousing-drives-demand-for-handling-technology/)
6. CRS Mobile Cold Storage (2017) (https://www.crscoldstorage.co.uk/latest-news/cold-storage-2017.html)

1.5 Overarching all of the above, it is also important to note that the cold storage market operates in the context of a **'just in time' model of production and distribution**, within which the supply chains have become increasingly complex and geographically distributed and reliant on 'movement' rather than storage. According to Defra's Food Statistics Pocketbook, over half of the UK's food suppliers reduced their distribution centre stock levels in the five years to 2015, noting that "*as retail supply chains become more responsive, lead times are reducing and order frequencies increasing*"[7]. The tightening balance between immediately available food supply and demand has been recognised for several years, as the system relies on sophisticated logistics management: while cold storage demand has risen recently, the rise has been driven by increased product range and turnover of stock, not by increased inventory.

The shorter term challenge

1.6 Against this backdrop, **capacity pressures linked with Brexit preparations** have received widespread publicity with supermarkets increasing their stock of refrigerated units to accommodate additional stock[8], and evidence of suppliers' spare storage capacity taken as manufacturers have booked ahead[9].

1.7 These capacity constraints are unsurprising in the light of the basic food distribution model, given that it is not designed to hold stock for lengthy periods. While Brexit has brought into focus the reliance of the system on just-in-time production and logistics, it appears that the supply side of the market regards Brexit as a 'one-off' disruption. However, some operators have identified potential for growth in UK-based cold storage in the event that the storage in (for example) France and Belgium of goods bound for the UK market becomes less competitive.

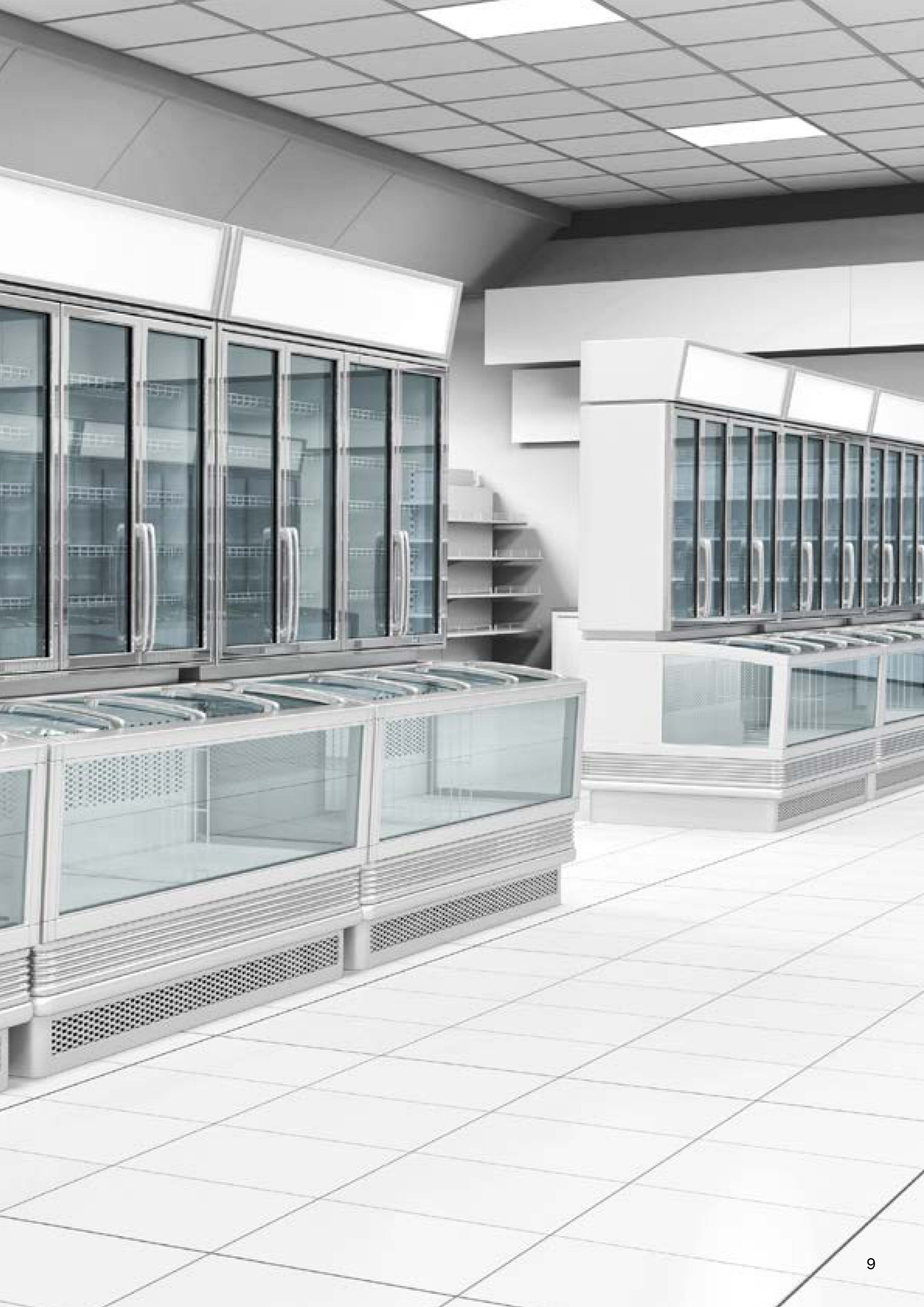
7. Defra (2018), *Food Statistics in Your Pocket 2017*, retailer/ warehouse stock levels (https://www.gov.uk/government/publications/food-statistics-pocketbook-2017/food-statistics-in-your-pocket-2017-global-and-uk-supply#retailer-warehouse-stock-levels---5-year-change). Previous versions of the Pocket Book reported stock levels by grocery category: these have been discontinued, but the Pocket Book reported that in 2010, average retailer warehouse stock levels for frozen goods were around 9.5 days' supply (compared with around 12 days' supply in 1996).
8. *Financial Times* (16 January 2019), 'Tesco braces for Brexit by renting frozen food containers' (https://www.ft.com/content/56421ec2-1982-11e9-b93e-f4351a53f1c3)
9. Tim Lang, Erik Millstone, Tony Lewis and Gary McFarlane (November 2018), Food Research Collaboration Food Policy Briefing, City University Centre for Food Policy

2. Conclusion

Some conclusions on capacity...

2.1 There are some general conclusions that can be drawn on cold storage capacity in Wales:

- **in the short term, there is clearly a lack of spare capacity**, at least within the 3PL sector. This applies to the UK as a whole, and Wales reflects this. However, two points are worth noting in relation to constraints driven by Brexit stockpiling:
  - first, Brexit-related capacity constraints are policy-driven, rather than a 'market failure': there is a lack of capacity for stockpiling because conventionally the market operates on the basis of rapid turnover
  - second, the scope for addressing short-term capacity constraints is limited. While increased storage has captured the headlines, food manufacturers and retailers recognise this, and have adopted a number of other 'hedging' strategies (such as securing ingredients from a more diverse range of sources).
- **in the longer term, the costs of bringing forward new capacity are relatively high**: due to the diverse range of temperature and handling requirements and the need for high levels of energy efficiency, cold storage is more expensive than general warehousing (estimated development costs from around £5 million to upwards of £100 million for a national 'super-hub), with lead-in times of 5–10 years, and the market is demanding higher standards.
- **from the perspective of manufacturers, the market appears to operate as a 'mixed economy' across the different segments of cold storage provision**. Many food manufacturers operate their own cold storage: there is increasing demand for this, and it is likely that reduced capacity (and consequently higher costs) in the 3PL sector strengthens the business case for in-house investment. However, external cold storage remains important to many manufacturers.
- **finally, while Wales has a relatively small presence in the cold storage market (and indeed the logistics market generally), this should be seen in the context of a cold chain that is highly integrated across the UK**. The system relies on 'movement', rather than 'storage', and distribution networks are complex. In that context, Wales is less of a distinct 'market' in itself, and more an integrated part of a larger system.



2.2 **In the context of the above, there does not seem to be a strong case for Welsh Government intervention to increase capacity *per se***, within the context of the way in which the market works at the moment. There is limited cold storage provision in Wales, but within the UK system overall, the market is responding with new investment (albeit that in a land and transport constrained country, major new operations are time-consuming and expensive to bring forward.

2.3 However, Wales has an important food manufacturing sector, with a large number of smaller firms, and there is rising demand for locally-sourced, higher quality ingredients. In that context, smaller cold storage operators able to accommodate smaller pallet loads could form an important part of the local food manufacturing ecosystem (as could those regional foodservice businesses that source a substantial proportion of their inputs locally).