Brexit scenarios: Impacts on the UK's milling and malting sectors

Following on from 'Brexit Scenarios – an impact assessment', which focused on how Brexit could impact farmers' profit levels, we now turn to potential implications post-farmgate. In this AHDB-commissioned study, the UK milling wheat and malting barley sectors are put under scrutiny as the impact of various Brexit scenarios on these industries is assessed.

The key messages of this report are:

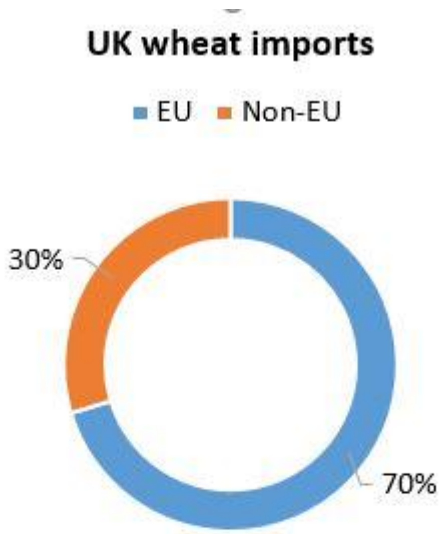
- UK flour trade is likely to experience the most disruption post-Brexit, even if a free-trade agreement is negotiated
- The milling wheat sector is likely to face more challenges than the malting barley industry if no trade deal is negotiated
- There are opportunities for UK malting barley/malt even under a mutual tariff scenario

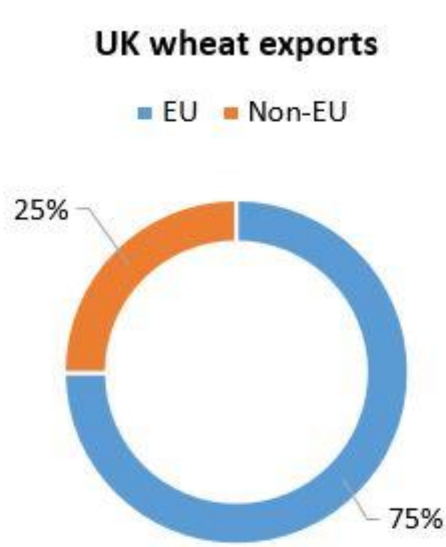
A summary of the main report is provided below. To access the full technical report, click here.

Background/current situation

The UK is, typically, a net importer of milling wheat, while any surplus in feed wheat is exported. However, tighter domestic supplies of wheat, along with increasing global competition, have created a challenge for UK wheat exports lately. In recent years, the UK has been more of a net importer of wheat rather than a net exporter. Since 2013/14, the UK has been a net exporter of wheat in only two seasons (2014/15 and 2015/16).

The graphs below show that the majority of UK wheat imports are from the EU and that the latter is also the main destination for exports.

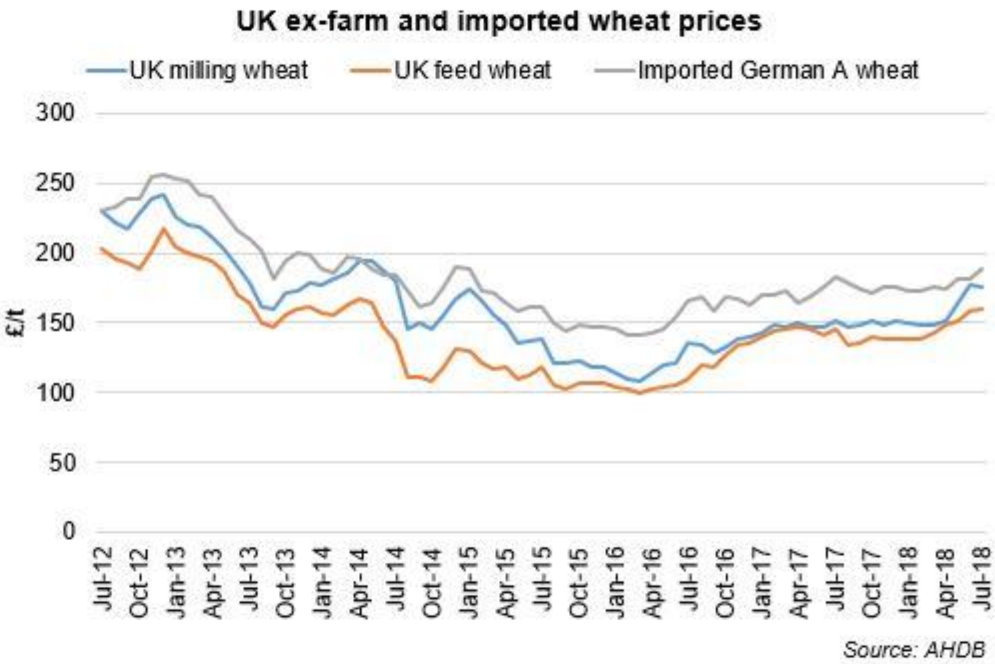




North America is the main origin of high-quality milling wheat imports into the UK, with German and French wheat also favoured. For exports, North Africa is the main destination outside of the EU.

In theory, domestic milling wheat prices are capped by the import price – the price at which imports become attractive. As expected, in years where there are tight supplies of domestic milling wheat, the premium would be anticipated to be higher than years of plentiful supply. However, if imports are cheaper, this could limit UK milling wheat price rises.

Additionally, the milling wheat premium depends on the feed wheat price – tight feed wheat supplies would squeeze the milling wheat premium from below, as in 2016/17 (see below).



Apart from the domestic feed wheat supply situation, the feed wheat price will also be influenced by the relative abundance of other feed grains, such as barley and maize.

Maize is increasingly the feed grain of choice. Global production of wheat and, in particular, maize has shown a steady increase, while barley production has declined. This is unsurprising, given that global maize yields are more than twice those of wheat or barley and increasing at twice the rate. Furthermore, maize is preferred over wheat for ethanol production and starch manufacture if the prices are similar.

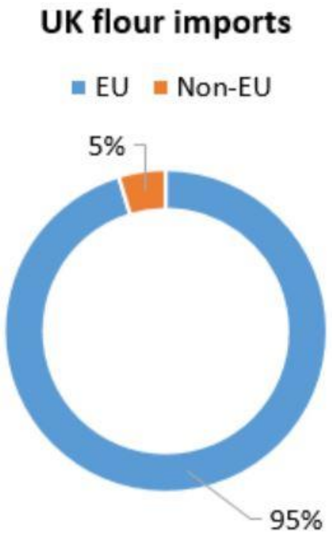
Maize is subject to a variable rate tariff that is only applied if the price falls below a threshold (currently defined as 155 per cent over the EU intervention price of €101). The tariff has rarely been applied and it is unclear how the Euro-based arrangements will change, once the UK leaves the EU. Exchange rate might prove very important. If maize is more competitively priced, compared with feed wheat, it is likely to replace the latter.

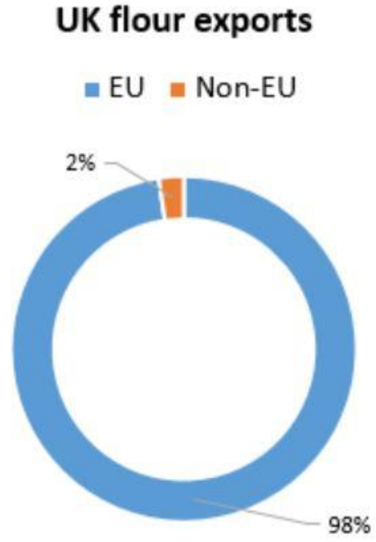
Flour

UK flour is generally considered of average quality and traded almost entirely within the EU. More specifically, UK flour is only exported to any great extent from Northern Ireland (NI) to the Republic of Ireland (RoI).

The RoI is reliant almost entirely on flour milled in NI. The NI mills use both imported wheat and some wheat grown in both NI and RoI. There are a number of bakeries in the RoI and, so, some high-quality goods are also exported back to the UK, following further processing.

UK flour is reliant on blending UK-produced wheat with imported grains from the EU and in particular, North America. Flour produced in the UK could contain up to 30 per cent imported wheat.



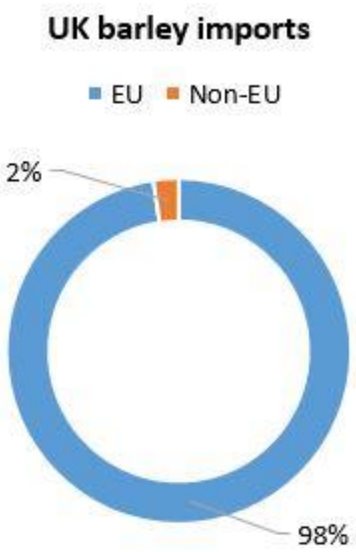


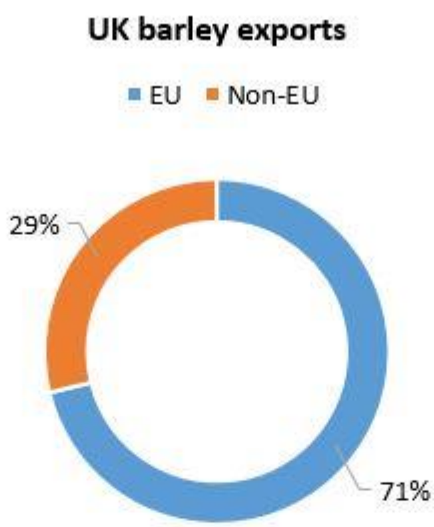
The quantity of flour imported into the UK is on a much smaller scale than for wheat (five-year average of around 130 Kt, compared with 1.8 Mt for grain). Nevertheless, the EU is the main source, with France, Germany, Poland and Italy the main suppliers in recent years.

Malting barley/malt

The trade situation for UK barley is more clear-cut than for wheat, with the UK a consistent net exporter of the commodity. The agronomic challenges presented by black-grass have contributed to an increase in both the barley area and production, which have led to maintaining an exportable surplus.

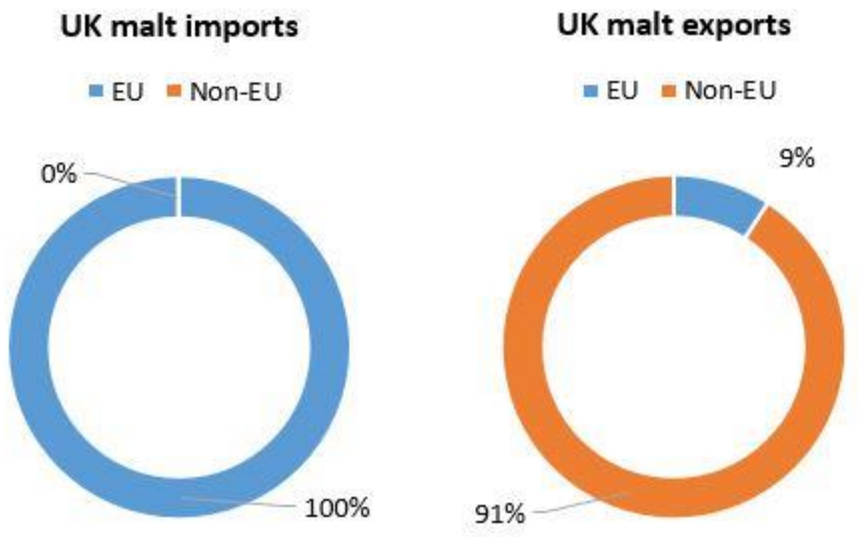
A considerable proportion of UK barley imports are from the EU (see below), with the RoI a key supplier. For exports, the EU is once again the main destination, with Spain and Portugal as important customers. Nevertheless, a sizeable proportion is also shipped to non-EU markets such as Algeria, Tunisia and Saudi Arabia as feed grain.





It is estimated that only about 200–300 Kt of malting barley is exported from the UK, largely from the south coast and a small quantity from NI to the RoI. The majority of barley exported is feed grade.

The UK is a net exporter of malt. While virtually all malt imports into the UK are from the EU, the UK export market is dominated by non-EU trade, with Japan, the US, Thailand and Vietnam key customers.



In contrast to the situation with wheat and flour, RoI is self-sufficient in malting barley, and the major maltsters in RoI supply NI.

UK malt is a premium product. There are differences in production and UK malt is ‘finished’, making it easier for brewers and distillers to use. However, the real advantage is the UK brand. Scotch whisky is one of the few internationally recognised products. British ale is also distinct compared with a lager and, for artisan brewers, the genuine article requires UK malt.

The similarity between flour and malt is that they both comprise only a small part of the retail value of the end products and, consequently, demand is relatively price insensitive. Thus, a modest change in grain price is unlikely to affect demand. Millers and maltsters are conscious that any price change in the domestic market would apply to all processors and the low price elasticity would allow any increase in price to be passed to the consumer. This would not be true for cross-border trade, such as in Ireland, where there are competitive providers.

Post-Brexit options

Once the UK formally leaves the EU, there are various outcomes regarding future trade between the two. To estimate the extent of the economic impacts, the various scenarios are compared with the current situation – i.e. a free trade zone where there are no tariffs or non-tariff barriers.

Scenarios

1. **Free trade agreement (FTA)** – potential to agree to zero tariffs but non-trade barriers, such as Rules of Origin, will be a factor and there will be further costs associated with customs control.
2. **Unilateral** – The UK retains tariff-free imports but exports are subject to tariffs.
3. **Mutual** application of tariffs – tariffs are placed on both UK imports and exports in alignment with WTO rules.

This analysis defines the boundaries of the most likely economic outcomes. It is recognised that these scenarios may not be implemented as simply as described above. For example, tariff rate quotas (TRQs) – see below – could be used or a zero-tariff FTA may not be possible.

Rules of Origin (RoO)

Each FTA is subject to specific Rules of Origin (RoO). These rules are complex but fundamentally define the proportion of goods in a manufactured product that may be included from a third party. It is possible that, even if there were an FTA agreement between the UK and EU, exports of flour and bakery products from NI (and the rest of the UK) may be reduced. The reduction depends on too many decisions yet to be made to give a clear estimate but there could be a reduction in exports of 30 per cent.

Only products that are deemed to be 'originating' can benefit from the trade preferences in the trade agreement, and there are two ways by which a product can acquire originating status.

A product is said to be 'originating' if: 1) it is made wholly within one of the FTA markets; that it contains no inputs imported from outside the free trade area. Or, 2) it needs to show there has been 'sufficient transformation' to confer originating status, and benefit from the trade preferences.

There are broadly three tests to determine if the products have undergone sufficient transformation:

- A change in tariff heading[1]
- Meeting specified domestic content requirements by value
- Meeting specified domestic content requirements by weight

This means that UK products, such as flour, that use imported grains, may not qualify for preferential access to the EU market. Similarly, EU products that use UK cereals and/or cereals products.

Other key non-tariff issues, such as EU customs checks, labelling, sanitary and phytosanitary measures, are discussed in the full technical report.

Tariff rate quotas (TRQs)

Tariff rate quotas (TRQs) could play an important role if tariffs are placed on UK exports/imports to and from the EU. A TRQ allows a certain amount of product to be imported at a lower tariff but once the quota has been reached, tariffs are applied at the higher rate.

EU trade seldom relies on the WTO agreed bound tariffs as these are usually high for agricultural goods and generally designed to prevent trade. This is where TRQs can be used. Some TRQ agreements are available to all trading parties, while some are available only to specific trading countries.

There are TRQs for grain but not for flour and malt. Furthermore, the TRQs will be divided between the EU and the UK. Both shares have importance for the UK, since the EU share will determine the tariff applied to UK exports to the EU, and the UK share will establish the volume of low-tariff imports into the UK.

The proposed division has been published, although agreement requires input from third parties affected by the decision. In the event that a better agreement between the UK and EU is not reached, the division of these tariffs will determine the trade between the UK and EU.

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[1] A tariff code is a product-specific code as documented in the Harmonized System (HS) maintained by the World Customs Organization (WCO.) Tariff codes exist for almost every product involved in global commerce. Required on official shipping documents for tax assessment purposes, a tariff code ensures uniformity of product classification worldwide.

The table below shows the out-of-quota (bound tariff) and in-quota tariffs for the main commodities investigated in this report. For example, EU barley imports have a fixed tariff of €93/t, but a non-country-specific TRQ means that 307,105 tonnes can be imported at a lower rate of €16/t. For malting barley, with specific characteristics, there is a TRQ for 50,890t at a tariff of €8/t, although the average utilisation of this quota has been 0 per cent over the past five years.

	Bound Tariff	Tariff Rate Quotas			Comments
		Tonnage			
		UK	EU	Tariff	
Feed Wheat	€95/t	0	129,577	€12/t	There is also a number of country-specific favoured tariffs, for example, with Ukraine and North America.
Top Quality Wheat	Variable tariff but rarely applied	0	300,000		The tariff applies to wheat types not generally grown in the EU. The tariff is strictly variable but, since it is applied only when the wheat price is below €155/t, it has been rarely imposed.
Feed Barley	€93/t	293	306,812	€16/t	See comments for feed wheat.
Malting Barley	€93/t	30,101	20,789	€8/t	

The tariff for maize is at a variable rate and generally zero.

Even the low tariffs are likely to dissuade trade in most feed grains. However, the tariffs are not sufficient to prevent trade in most of the quality grain. It is likely the cost of the tariff would be shared between the parties, with the share paid by the buyer increasing as the quality attribute becomes less freely available.

There is further discussion of TRQs in the main report, but the main point to keep in mind is that access to TRQS will have a considerable impact on wheat and barley imports if tariffs are imposed.

Farm subsidy

There may be some concern that supplies of milling wheat and malting barley could decline as a result of the loss of subsidy. While there are likely to be negative impacts arising, they are unlikely to be significant for supplies, as the farm subsidy is decoupled from production.

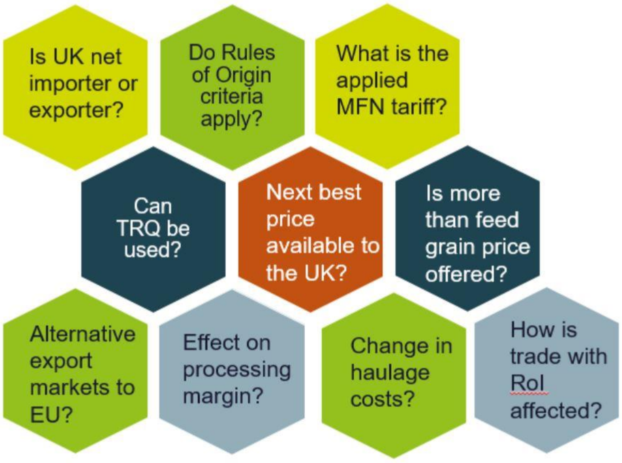
Nevertheless, any loss of subsidy may influence farm structure, land occupation costs and farm employment. There may also be considerable disruption depending on the period allowed for phasing the removal of the subsidy, as well as some land loss to more market-related production.

Removal or reduction of subsidy should have little influence on relative crop production: all crops receive the same level of subsidy and, thus, removal of subsidy leaves relative profitability unchanged, albeit lower.

Further details on farm subsidy, as well as the impact of Brexit on labour in the milling wheat and malting barley sectors, are available in the main report.

Methodology

A detailed discussion of the factors considered when modelling the economic impact of the various Brexit scenarios on the milling wheat and malting barley sectors is provided in the main report. Below is a summary of the key questions taken into account.



All the four products covered in this report may be assumed to have reached a price and production equilibrium under the current economic conditions. If Brexit results in a change in the economic conditions, a new equilibrium will eventually be reached.

Results

Free trade agreement (FTA)

While tariffs will be removed on both imports and exports, there could be a varying impact via the non-tariff issue of the RoO criteria. Quantitative analysis of the cost impact of the RoO criteria was outside the scope of this analysis and, so, requires further investigation.

Customs costs will be incurred but are likely to be small for wheat and barley, due to the large volumes traded.

Milling wheat	• Possible indirect impact via new constraints imposed on flour trade. The effects are more likely to be felt in years when the UK has to import a higher proportion of wheat due to issues with domestic wheat quality
Flour	• Likely to impede the flow in Ireland where at least some flours or goods would include higher levels of non-EU and UK flour than permitted (10 per cent) • Supply chain traceability would need to increase, and segregation more carefully controlled – perhaps even separate processing for the domestic and export market • Northern Ireland's competitive advantage to supply the RoI export market could be eroded in favour of the EU • Cost impact on consumers likely to be small • The impact on flour processing margins could be significant
Malting barley	• Likely to be little disruption to trade. RoO have no direct impact and virtually no indirect impact
Malt	• Likely to have no material impact • Little change in trade with RoI

2. **Unilateral – No tariffs on UK imports, but tariffs on UK exports**

Milling wheat	• No substantial increase in the cost of importing milling wheat – millers and consumers retain level of choice • Feed wheat prices expected to fall by about 3 per cent, due to imposed export tariffs. Generally, expect feed wheat prices to fall more in

	exporting years as cost of export increases but price fall would be limited by the €12/t TRQ tariff • Potential to export more feed wheat to North Africa, at the expense of the EU, means higher use of deep water ports, resulting in lower price received by producer
Flour	• Oversupply of flour of around 240 Kt, with biggest impact in NI • Initial price collapse due to the oversupply would persist until reduction in production capacity (potentially 2–3 years) • Mills with associated bakeries expected to fare better in these conditions compared with individual mills • Reduced flour exports from mainland UK and NI could pressure supply in RoI
Malting barley	• Retain malting barley supply suitable for specialist malts and brands, due to no import tariff • Export tariff highly likely to reduce feed barley exports to EU; potential for higher exports to North Africa – so shipping from deep water ports means lower price for producer • Export price and domestic price of malting barley could fall by 7–8 per cent as lose market share in higher priced EU market • The low TRQ tariff of €8/t on specific malting barley and brewing processes would be sufficient for most UK malting barley exports, if the specifications can be met
Malt	• Little effect on malt imports • Expect price to fall by 5 per cent as greater proportion would need to be exported to lowest value markets • Overall, very small negative impact on maltsters and growers • Oversupply of malt in RoI would be relieved and RoI would have a slight tightening of supply because imports from UK would be lost. This is likely to have a small negative impact on growers but malting margins should improve with the reduction in competition

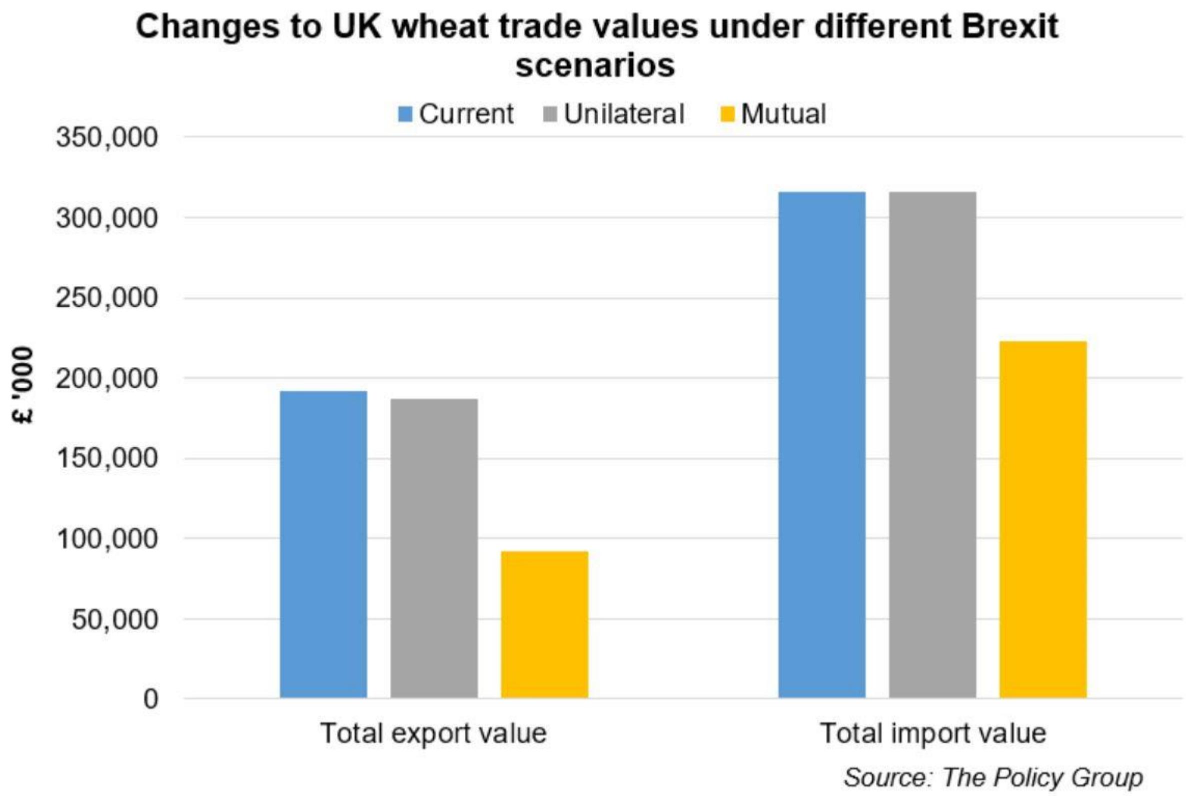
Mutual application of tariffs

Milling wheat	• Zero tariff applied to top-quality wheat imports, so these are likely to continue and potentially increase • EU unlikely to provide wheat of sufficient quality to qualify for the zero tariff – likely that EU quality wheat would enter the UK subject to the non-country-specific €12/t TRQ for all wheat • Potential increase in UK milling premiums as the price of imported wheat likely to be higher • Wheat import price likely to increase by around 15 per cent, assuming no reduction in flour production • Tougher competition for EU export markets but net price of feed wheat is unlikely to fall by more than 3 per cent • Assumed that some feed wheat will continue to be exported from NI to RoI, with the additional cost shared
Flour	• Flour production expected to be severely hit – expected loss of 235 Kt of exports to the EU, of which 188 Kt are currently exported to the RoI • Likely that one or two mills would be forced to close, with at least one of these being in NI • Until mills shut, over-capacity likely to cause major problems across the industry – mills linked with bakeries will be more protected • Potential import substitution of bakery products

Malting barley	• Barley imports into UK likely to cease, once small share of the TRQs is exhausted with non-feed varieties, so opportunity for import substitution by growing six-row barley in the UK. • Impact of supply of barley from within the UK likely to be negligible • Barley trade between the EU and UK would be hit, with UK feed barley exports outpriced by other EU suppliers • UK malting barley exports likely to continue for specialty malts, due to proposed allocation of TRQs between UK and EU • Exports of malting barley from mainland UK to RoI likely to decline, due to competition from EU suppliers • The imposition of tariffs is unlikely to reduce the price of malting barley and feed by more than £5/t • Potential to increase exports to North Africa following reduction in exports to the EU • Estimated that feed barley prices would fall by 1 per cent, with largest impact felt in the South of England
Malt	• Most malt exported outside of EU so not affected by tariffs. In any case, trade with EU would almost entirely cease, following the imposition of the €152/t tariff on malt • Unlikely that market share to the premium US market would increase in the short term • Estimated additional net barley supply of 250 Kt – most of this would go to NI to replace imports from RoI • Potential growth in less valuable export markets, e.g. Thailand and Vietnam • Potential to replace non-specialist malt imports into Scotland at a slightly higher cost, due to lack of competition from EU imports • RoI has potential to compete with the UK in export markets through supply of a similar product with a strong brand • Export tariffs would reduce malting barley price by around 5 per cent

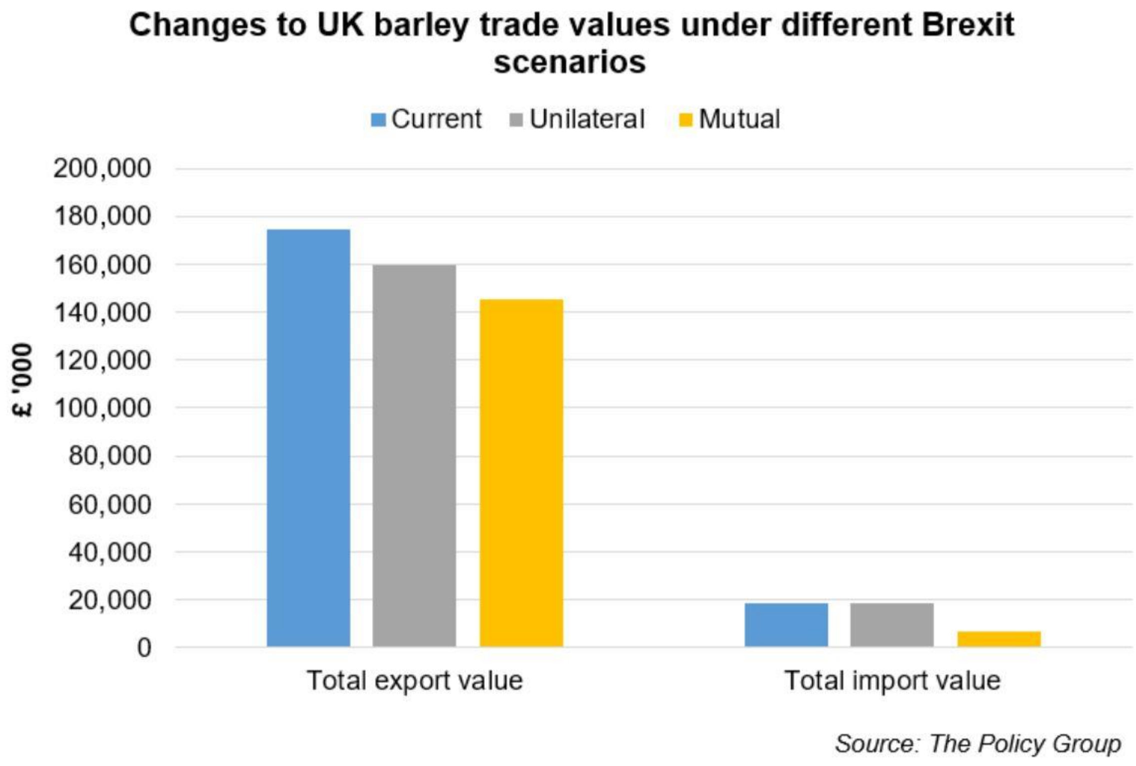
Impacts of various scenarios

The graph below compares the estimated impact on UK wheat trade values under the unilateral and mutual tariff scenarios with the current situation. Data illustrating the current situation is based on the previous five-year average trade data.



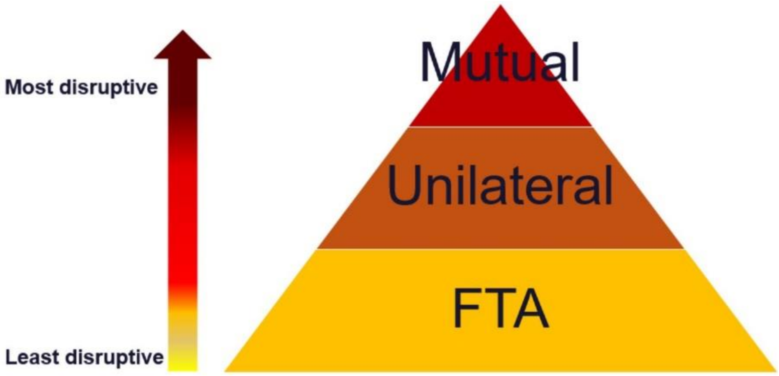
Under the unilateral scenario, the total export value of UK wheat is expected to decline by around 2.5 per cent, whereas the import value will stay the same. Under the mutual tariff scenario, the export value is expected to decline by more than 50 per cent, while the import value is predicted to drop by a lesser extent (30 per cent).

For UK barley trade, the unilateral tariff scenario is estimated to cause a 9 per cent drop in the export value. Under the mutual tariff scenario, the drop is greater (17 per cent). The value of barley imports is estimated at more than 65 per cent lower than the current situation under the application of mutual tariffs, although, in absolute terms, this fall is lower than the decline in export value.



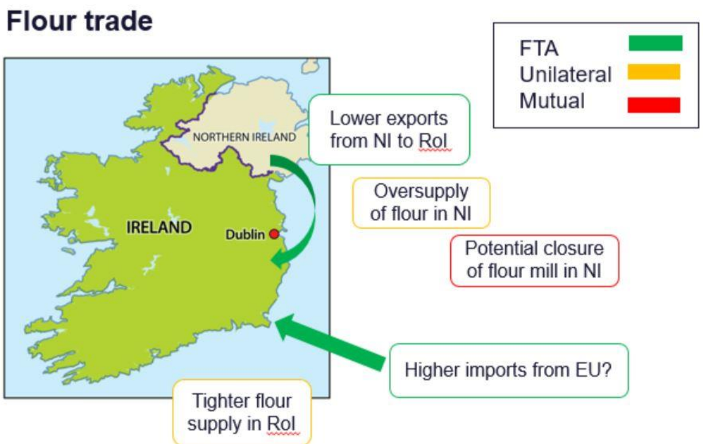
Conclusions

The results of this analysis suggest that the mutual tariff scenario will be most disruptive for both the milling and malting sectors, which will not come as a surprise.



As the UK is predominantly a net importer of milling wheat, at face value, there is likely to be minimal disruption unless tariffs are applied to imports (i.e. under the mutual tariff scenario). Depending on how TRQs are allocated, the import price ceiling and, therefore, milling wheat price, is likely to rise. On the other hand, feed wheat prices are likely to be depressed by around 3 per cent, due to increased challenges for exports. This means a higher milling premium, which could, in turn, incentivise increased domestic production of milling wheat. German wheat varieties might be grown, although, to date, it has not been possible to reliably obtain sufficiently high nitrogen content.

UK flour trade could face considerable hurdles even if a free trade agreement is negotiated. RoI criteria could mean that the industry would need to invest in increased traceability or even have separate processing for the domestic and export market if it is to hold onto net-exporter status. Trade between NI and RoI would be impacted the most, with the possibility that the UK could lose some of its share in the RoI market to the EU.



Under the unilateral and mutual-tariff scenarios, the UK is likely to have an oversupply of flour, and an initial price collapse, followed by some consolidation of flour mills, is estimated. It may be that some of the oversupply could be taken up by increased domestic production of bakery products, which could then be exported. Analysis of the impact of the Brexit scenarios on this next stage of processing was outside the scope of this project, but details of tariffs applied to bakery products are provided in the appendices of the main report.

Malting barley prices are unlikely to experience considerable changes in the FTA scenario but could fall by 7–8 per cent under the Unilateral scenario, due to the higher-value EU export market being lost. Instead, exports may be directed to the lower-priced markets of Thailand and Vietnam. Domestic feed barley prices are estimated to drop by only a small amount, as exports to the EU could be redirected to North Africa. The cost to transport grain to deep-water ports for most UK feed barley producers would be relatively small. As a result, the malting barley premium is likely to be squeezed.

If mutual tariffs apply on malting barley, imports of quality malting barley would be economically unfeasible, once the TRQ was exhausted. Maltsters may then struggle to obtain these supplies and, so, there may be an incentive to produce six-row barley in the UK.

Export tariffs are estimated to reduce malting barley prices by around 5 per cent and exports to the EU are likely to decline. As a result, malting barley producers would have the following options:

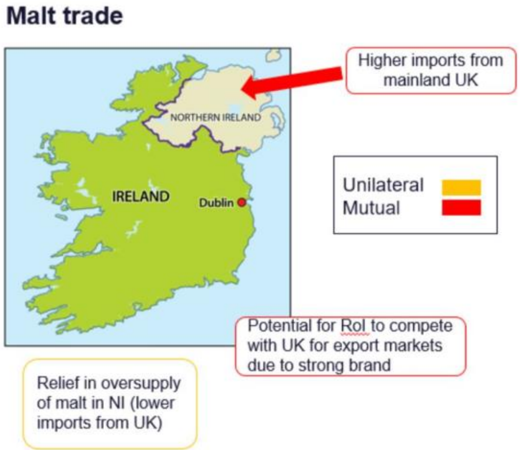
- Sell malting barley on to the feed market (but incur an average penalty of £18/t)
- Use non-country-specific TRQs to the EU, albeit at a higher (general) tariff rate
- Sell barley domestically to maltsters in East Anglia, albeit at a higher transport cost compared with haulage to a port in the South
- Sell barley to Scottish market to replace EU imports (tariffs would make EU imports more expensive)

Of all the products discussed in this analysis, UK malt is arguably in the best position to weather the impact of the various scenarios. Under the mutual application of tariffs scenario, imports from the EU would cease, due to the prohibitive €152/t tariff. This would cause supply issues for processors. More English malt could also be sold into the Scottish market as there would be less competition from EU imports, if tariffs apply. The lack of competition could even result in Scottish maltsters purchasing English malt at a higher price.

Exports should experience less of an impact, given that the majority of UK malt is exported to non-EU destinations. In the short term, there is more opportunity for growth in low-value markets such as Vietnam and Thailand, rather than the US.

Nevertheless, there could be the opportunity to build a new large-scale malting facility in the South of England, near the deep-sea port of Southampton. This would open up supply potential to valuable US and Japanese markets. Although it is unlikely that the UK's market share in the premium US market will increase in the short term, there is more of a possibility to achieve this in the longer term as the artisan/micro-brewing markets in the US gather steam. It is also worth bearing in mind that UK barley production is now higher than that in the USA.

Malt trade between NI and RoI will see changes post-Brexit in the event of tariff applications, but to a lesser extent than those seen for flour.



NI would need to rely on a higher level of imports from mainland UK to replace supplies previously obtained from the RoI if mutual tariffs are enforced.

While both sectors potentially face considerable challenges following Brexit, this study suggests that the milling wheat industry will be affected more than the malting barley industry, due to the current trade situations. There are also more post-Brexit opportunities for the malting barley than milling wheat, based on the findings of this study.

A risk for the milling industry is that decisions in plant closures will be taken too slowly, leaving all mills struggling and consuming capital in the hope that things will get better – as they will for some.

For both processors, there are economies of scale, although, particularly in the milling industry, there is not a strong relationship between profit and scale. However, labour and capital costs show a strong negative correlation with scale for both maltsters and millers, suggesting there is at least potential for cost savings.