

# African Swine Fever

## Understanding the potential impact

18 September 2018

### Overview:

The westward spread of African Swine Fever (ASF) from Eastern Europe is currently generating some concern among the European pig industry. The disease has the potential to slow pork production, particularly if it enters the commercial pig herd. Perhaps more concerning, however, are the threats surrounding international trade flows should an outbreak occur. As such, economic risks to export-dependent countries, such as Germany and Denmark, could be particularly severe. As the European market is highly interconnected, any disruption to these markets would be felt across Europe, including here in the UK.

This document looks at some of the key questions relating to ASF, including its current spread, trade restrictions and implications of the latest outbreak in Belgium. More significantly, it explores the potential effects of ASF on Germany (currently the largest pork producer and exporter in Europe). It underlines the interdependence of the European pork sector, assesses the international opportunities/challenges that may occur and considers the potential downward impact on prices resulting from a shift in supply and demand dynamics.

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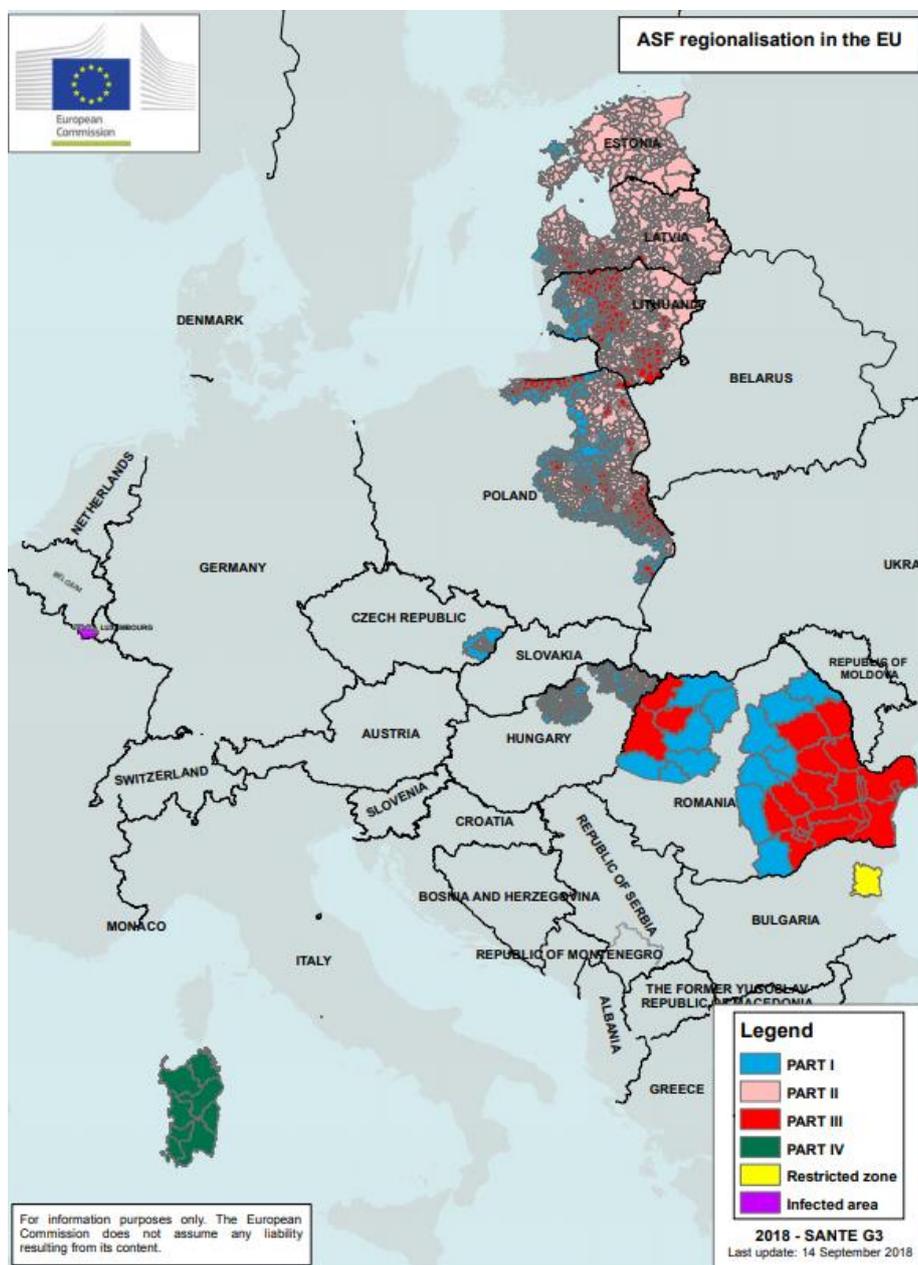
## Part I: Key questions and concerns

### Where is ASF currently found in Europe?

In 2014, ASF spread from Russia, where the disease is present throughout the wild and domestic pig populations, into the wild boar populations of Lithuania, Poland, Latvia and Estonia. The disease has since spread to the domestic pig population and continues to be a problem in Poland, Lithuania and Latvia.

Following the introduction of contaminated food products, ASF was detected in boar in the Czech Republic last year. Outbreaks were also detected in backyard farms in Romania, close to the Ukrainian border. More recently, smallholdings on the other side of Romania have also been affected and there has been further spread to smallholdings inland.

The spread to other countries has continued, with the first outbreak in wild boar detected in Hungary earlier this year. Backyard pigs in a smallholding in Bulgaria, close to the Romanian border, were then discovered in late August. Most recently, ASF has been detected in four wild boar in Belgium, close to the border with France and Luxembourg.



*The European Commission maintains a map highlighting regions currently affected by ASF.*

## What restrictions does the EU impose on trade from areas in which ASF is present?

Areas within the EU that are affected by ASF are classified under four zones. This classification has an effect on the extent to which pigs can be moved and pork products traded.

- Part I: Higher risk area with no cases or outbreaks of ASF – higher surveillance is applied
- Part II: Occurrence of ASF in wild boar
- Part III: Occurrence of ASF in both domestic pigs and wild boar but the situation is not yet endemic
- Part IV: Occurrence of ASF in both domestic pigs and wild boar and the situation is endemic (eg, Sardinia)

Movement of live pigs is restricted under Parts II–IV. Generally, only movement within the affected area is permitted. However, if certain veterinary and residency conditions are met, pigs may be transported to other uninfected areas of the same member state. Additional residency/veterinary requirements must also be met for export of live pigs to other member states under Part I.

Movement of pig meat products is restricted under Parts III and IV. Generally, meat from pigs based in these areas must remain in the affected area, although holdings not suspected of being infected may be able to obtain derogation for the meat to be traded elsewhere within the same and other member states. Product from pigs transported into these areas for slaughter may still be approved for export to other member states provided that approved slaughter facilities are used.

More detail on these requirements can be found here: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014D0709>

An area can be downgraded from a Part III to a Part II region if ASF is not detected in domestic pigs for 12 months. This can be reduced to three months if all non-commercial holdings are depopulated. If there is an isolated outbreak (in an area with no ASF outbreaks in domestic pigs for the past 12 months), then the region is downgraded three months after disinfection of the infected holding, provided that clinical and laboratory examinations, or an intensive sampling and testing programme, are implemented.

## What restrictions do countries outside the EU impose?

While pig meat trade within the EU can continue reasonably unimpeded from regions/countries unaffected by ASF, or in regions in which it is only present in wild boar, the international market can be more discriminating. Many key importers have previously not accepted regionalisation in countries where an outbreak has occurred and have introduced total bans on all pig meat products from affected countries. These countries include:

- China
- Japan
- South Korea
- Taiwan
- Singapore
- Serbia
- Belarus
- South Africa
- Russia\*

\*Russia introduced a total ban on pig meat products from the EU after ASF was detected in Poland in 2014. This has since been declared illegal, but a wider, politically motivated ban on all agri-food products from the EU remains in place.

There is a degree of risk around all third country trade once ASF has been detected in a country; however, some destinations have previously accepted product from unaffected regions of affected countries. These include:

- Hong Kong
- US
- Canada
- Ivory Coast
- Chile

While it is uncertain how countries would respond to future outbreaks, we would expect that importers that have not previously accepted regionalisation would maintain that stance for future outbreaks – at least initially. Note that, since the Belgium outbreak was announced, 13 countries have introduced partial or total bans on the import of Belgian pig products. These are South Korea, China, Taiwan, Belarus, Mexico, the Philippines, Japan, South Africa, Singapore, Uruguay, Australia and Malaysia. The restrictions vary from country to country, with some only blocking the import of by-products or live pigs. (correct at time of writing)

### What might be the implications of the latest outbreak in Belgium?

Belgium is the eighth largest EU pork producer, with production totalling around 1 million tonnes in 2017. However, it is the fifth biggest exporter within the EU market. Around 600,000 tonnes of fresh/frozen pork were shipped from Belgium to other EU member states in 2017; 10% of the total volume traded within the EU. However, provided ASF can be contained from the commercial pig herd, this trade should be able to continue unimpeded. There are, fortunately, relatively few pig farms in the recently infected region. With indoor pig production and high levels of biosecurity characterising the Belgian industry, there is arguably a reasonable chance of keeping ASF out of the commercial herd.

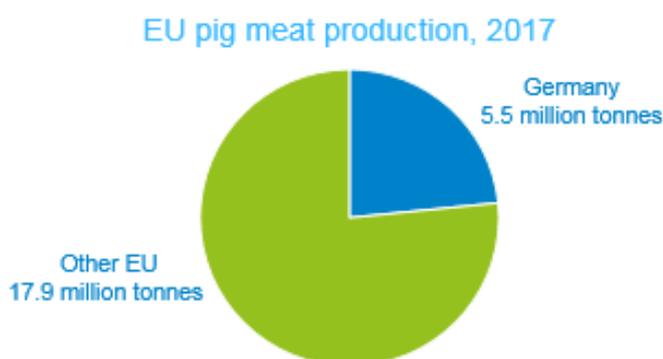
On a global scale, Belgium is a less important exporter. Only around 50,000 tonnes of fresh/frozen pork were shipped to non-EU destinations in 2017; approximately 2% of the EU total. As such, even if restrictions on Belgium were put in place, the wider EU market could likely adjust to compensate.

As discussed above, restrictions on trade in live pigs within the EU can be implemented in regions in which ASF is present in only the wild boar population. Belgium exported over one million live pigs for slaughter last year and nearly 100,000 weaners for finishing. Most of these were destined for the Netherlands and, to a lesser extent, Germany. This trade could therefore be at risk if ASF were to spread further in the country's wild boar population, disrupting supply chains.

### What are the broader implications?

Perhaps more concerning is the proximity of the latest outbreak to key EU exporters; in particular, Germany. Germany is the largest pork producer and exporter in Europe, so the repercussions of an ASF outbreak could be severe.

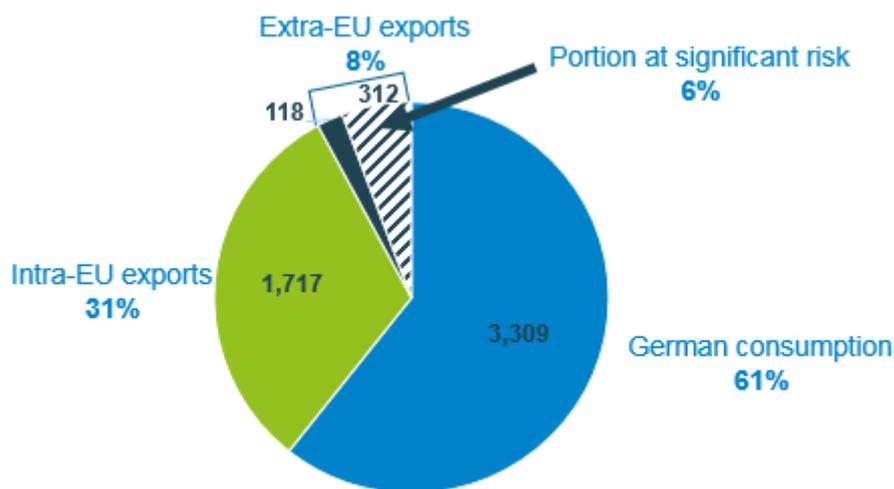
Even with an outbreak constrained to the wild boar population, disruption caused by the potential interruption to international exports could be serious. Recent analysis has suggested ASF can be expected within the German wild boar population within four years. The rest of this document considers the potential impact and knock-on effects of ASF on German trade.



## Part II: Understanding the potential impact of ASF in German wild boar

### Germany: trade headlines

In 2017, over 300,000 tonnes of pork were exported from Germany to destinations that have previously introduced a total ban on product from countries with ASF. This is equivalent to 1.5% of total EU production, or 6% of German production. The value of this trade stood at €750 million. If offal exports are also included, this value climbs to €980 million.

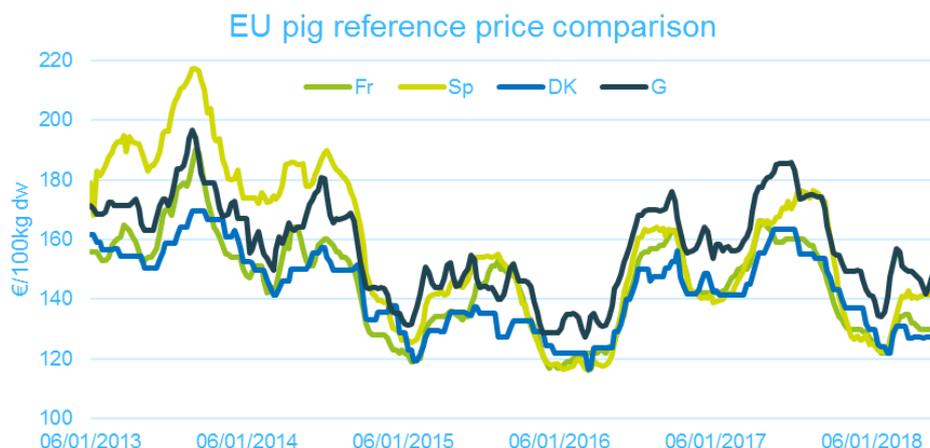


German pig meat destinations, 2017  
000 tonnes

### Why does what happens in Germany matter?

The EU pig market is highly interconnected, with much trade occurring between member states. In comparison to countries that have previously experienced ASF in recent years (eg Hungary and Czech Republic), the volume of displaced product would be much larger if Germany's exports to non-EU markets were to face any future restrictions and would be expected to cause disruption to the EU market.

Movements in pig prices in EU member states tend to be highly correlated with each other, with Germany particularly leading the market because it is the largest pork producer. As such, any drop in the German price would be expected to drag on prices in the rest of Europe.



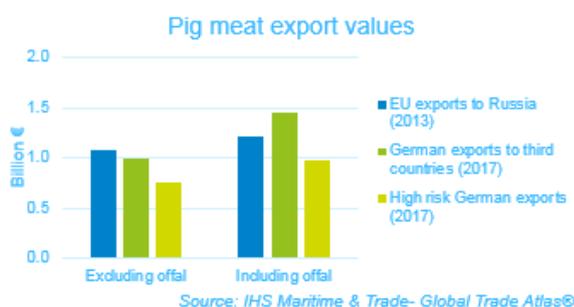
Source: Eurostat

## What might happen if/when Germany detects ASF in its wild boar population?

If we continue to assume that international importers will behave in the same manner as with previous outbreaks, around 300,000 tonnes of pork exports might be disrupted if Germany were to discover ASF in its wild boar population.

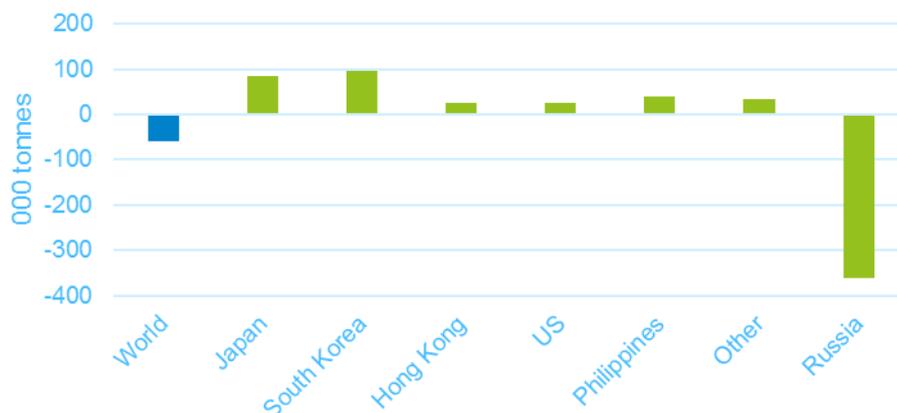
## Looking for parallels: the Russian import ban

It is clearly difficult to anticipate how the market might respond to this; however, comparison with the Russian ban on EU pig meat imports in 2014 may offer some insight. With a key export destination effectively closed to EU imports, the volume of product displaced by the Russian ban was around 400,000 tonnes. This is comparable to the volume Germany exports to non-EU markets; albeit somewhat larger than the 300,000 tonnes at significant risk. When comparing trade flows to Russia prior to the ban and Germany's current exports to non-EU countries, a similar pattern is evident in value terms. However, offal is a more important component of Germany's extra-EU trade than EU exports to Russia prior to 2014.



When the Russian import ban came into place, the EU market was able to respond fairly quickly by redirecting product into alternative markets. In 2014, pig meat exports (excluding offal) only declined by 3% year-on-year (-60,000 tonnes), despite a decline of over 350,000 tonnes shipped to Russia, as shipments to other destinations increased to compensate. The value of this trade declined in line with volume.

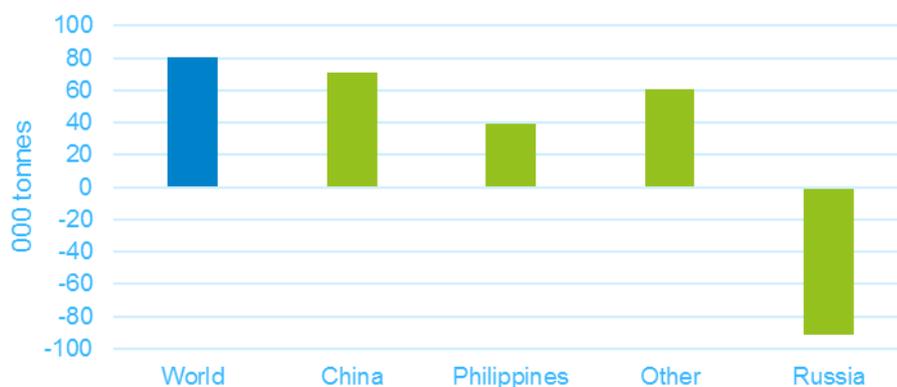
### Year-on-year change in EU pig meat exports, 2014 (excluding offal)



Source: IHS Maritime & Trade- Global Trade Atlas®, Eurostat

Offal exports were actually able to increase, even despite the loss of the Russian market, because demand from China, in particular, was growing at that time. This helped protect the value of the pig meat export market, which consequentially only averaged 1.5% lower (–€100 million) than year earlier levels in 2014. Subsequently, China has become less reliant on imports, so can probably not be relied upon to provide an alternative outlet for exports in the future. However, with China now also battling ASF, there is some level of uncertainty around its future import demand levels.

### Year-on-year change in EU pig offal exports, 2014



Source: IHS Maritime & Trade- Global Trade Atlas®, Eurostat

However, following the Russian import ban, even with the benefit of China's increased demand, not every product could be diverted to the same extent. There was a 40% (–150,000 tonnes) drop in pig fat exports, for example, reflecting the lack of alternative markets for this product. The value of this market halved (–£200 million).

During 2014, EU pig meat production increased by 1%. Combined with the drop in export volumes, approximately 250,000 tonnes of additional pig meat was available for domestic consumption compared to the previous year. On a per capita basis, this translates into approximately 0.6kg more meat per person. This growth clearly outstripped any EU demand growth, which has been broadly stagnant in recent years. On top of this, there was a decline in markets for pig fat, devaluing this product, which counteracted the improvement in markets for offal. Altogether, this meant that across 2014, EU pig reference prices dropped by around 20%.

### **Could the initial reaction be similar if Germany contracts ASF in its wild boar population?**

As has been illustrated above, the ability of the European market to find alternative destinations for product previously exported to Russia somewhat mitigated the economic impact of the ban. If Germany contracts ASF in its boar population, the trade position would become more complex because the export opportunities for Germany itself are considerably more limited.

In this situation, for the EU market as a whole to rebalance, other exporters would need to increase their shipments to destinations that no longer receive product from Germany.

## Opportunities and challenges for fresh/frozen pork:

The following markets have the largest potential opportunity for other pork exporters (with 2017 imports from Germany shown in brackets):

- China (150,000 tonnes)
- South Korea (95,000 tonnes)
- Japan (30,000 tonnes)
- South Africa (10,000 tonnes)

Most of the product sent to these markets is in frozen form.

With the sudden nature of an ASF-driven ban on imports, it is reasonable to expect that suppliers that already have a sizeable market share will be best placed to capitalise on any opportunity. These suppliers have the necessary contacts, approved plants and the infrastructure required to increase export volumes at short notice.

Below, we consider the potential for other EU exporters to compensate for the loss of German product in more detail.

### Potential for China

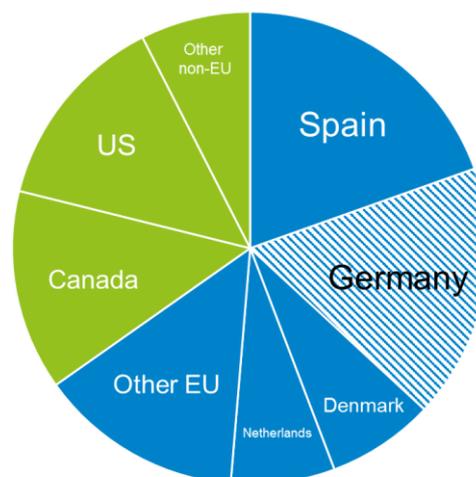
Germany provides around 17% of the 150,000 tonnes of pork shipped directly into China. Overall, the EU is dominant on this market, holding about two-thirds of the total market share. There are three other large suppliers within Europe: Spain, Denmark and the Netherlands. Clearly, if Germany were to lose direct access into China, this would open up an opportunity for these other exporters.

In 2016, when Chinese demand was higher, Spain, Denmark and the Netherlands shipped an additional 120,000 tonnes of pork to China. This indicates the ability to supply the market in higher volumes and a return to these figures would largely compensate for the loss of German product. Of course, whether this is possible would also depend on the relative competitiveness of US and Canadian product at the time.

However, the US and Canada have limited ability to expand shipments to China because they use the growth hormone ractopamine in much of their production, which is banned in China. Politics are also interfering with US access at the moment.

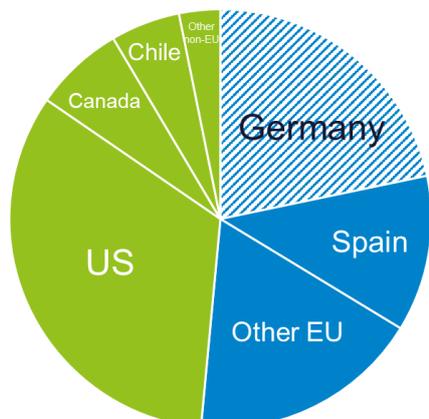
Note there may also be some compensation through increased German shipments through Hong Kong, which does allow regionalisation of ASF infected countries (see German opportunities). The behaviour of China is also more difficult to predict at the moment because of the recent detection of ASF in its own pig herd.

Chinese pork imports by origin



## Potential for South Korea

South Korean pig meat imports by origin



Germany occupies around 21% of the 95,000 tonne South Korean pork import market. The EU supplies around half of South Korean pork imports, with almost half of this coming from Germany. Spain also has a sizeable share of the market (12%), with the rest of EU shipments being made up by smaller suppliers, including Denmark and the Netherlands. The US is by far the largest single country supplier, shipping around a third of the total.

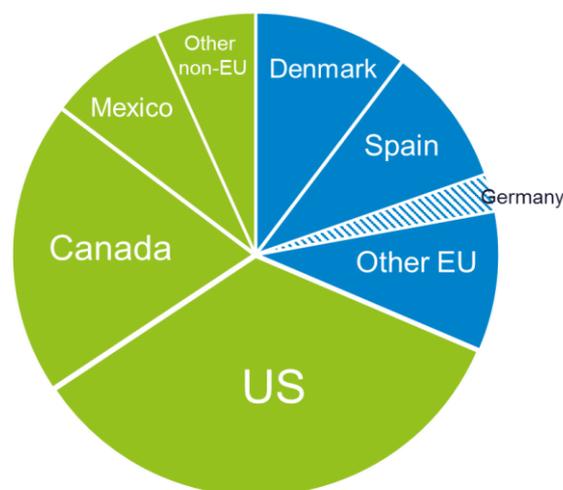
The US has more favourable access conditions than the EU for pork shipments to South Korea, thanks to the KORUS agreement. If Germany were removed from the market, the remaining EU suppliers might experience tough competition from the US for the available market share.

This would especially be the case if US access to Mexico and China remains compromised. Based on figures supplied in the past, it seems feasible that Spain, the Netherlands and Denmark may be able to achieve some expansion. However, based on growth rates in recent years, it seems unlikely that trade would be able to fully compensate.

## Potential for Japan

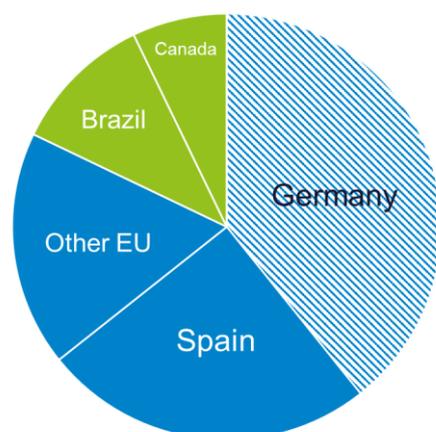
Germany only holds a small share of the 30,000 tonne Japanese pig meat import market, at around 3%. Over half of supplies are provided by the US and Canada, which – because of their geographical proximity – primarily supply fresh/chilled product. Most German exports to Japan consist of frozen pork cuts, which are used in processing. In general, the EU focuses on supplying frozen cuts, which may aid the other EU suppliers in compensating for the lost German market share, over the US and Canada. As the volumes involved are relatively small, other EU exporters, particularly Denmark and Spain, should be able to absorb much of the German market

Japanese pig meat imports



## Potential for South Africa

South African pig meat imports by origin



Germany is by far the largest supplier of pork to South Africa, which is a relatively small importer (10,000 tonnes from all sources), with around 40% of the market. German volumes account for around 4% of pork consumption in South Africa. The product primarily consists of frozen ribs, which are not produced in sufficient quantities in the domestic market.

A total ban on German pork imports would be disruptive to the South African pork industry and it is questionable whether the region would continue its stance in not accepting regionalisation in ASF infected countries. ASF is also already present in South Africa. Nonetheless, if a total ban were to be implemented, it may be challenging for the other EU exporters to absorb the entire deficit.

Brazilian exports have been growing strongly in recent years (+82%, +1,000 tonnes) and Canada has been a much larger supplier in the past (7,500 tonnes were shipped in 2015, compared with 2,000 tonnes in 2017). This suggests that these countries may be in a position to take some of the available market share.

### What would the impact be on other EU exporters?

Clearly, the ability of Spain, Denmark and the Netherlands to increase export volumes to destinations previously supplied by Germany is particularly important for EU market rebalancing. These are the largest global exporters in the EU, aside from Germany. In 2017, these countries shipped 800,000 tonnes of pig meat (excluding offal) to the countries at high risk of imposing an import ban on Germany if ASF were to be contracted. These shipments would need to increase by over a third to fully compensate. As previously discussed, this is perhaps unlikely; however, some increase would be anticipated.

### Where might the supplies that are needed come from?

Spain, Denmark and the Netherlands are all net exporters, so product is unlikely to be substituted from the domestic market. Looking at their current frozen pork exports (with frozen product making up the majority of the German trade at risk), France, Italy and the UK, in particular, receive frozen pork from Spain, Denmark and the Netherlands. These shipments might therefore be expected to reduce as the product is redirected out of the EU. This would then create a gap for the displaced German product (see below).

Germany is also an important EU pork importer from the Netherlands and Denmark, in particular, and it might be anticipated that these shipments could also reduce. However, Germany is a key processor of European pork, so the impact is unlikely to be this straightforward. Limitations on processing capacity in the origin country may mean shipments to Germany will be maintained – at least in the short term – despite the increased supply of domestically produced German pork.

## What might happen to the displaced German pork?

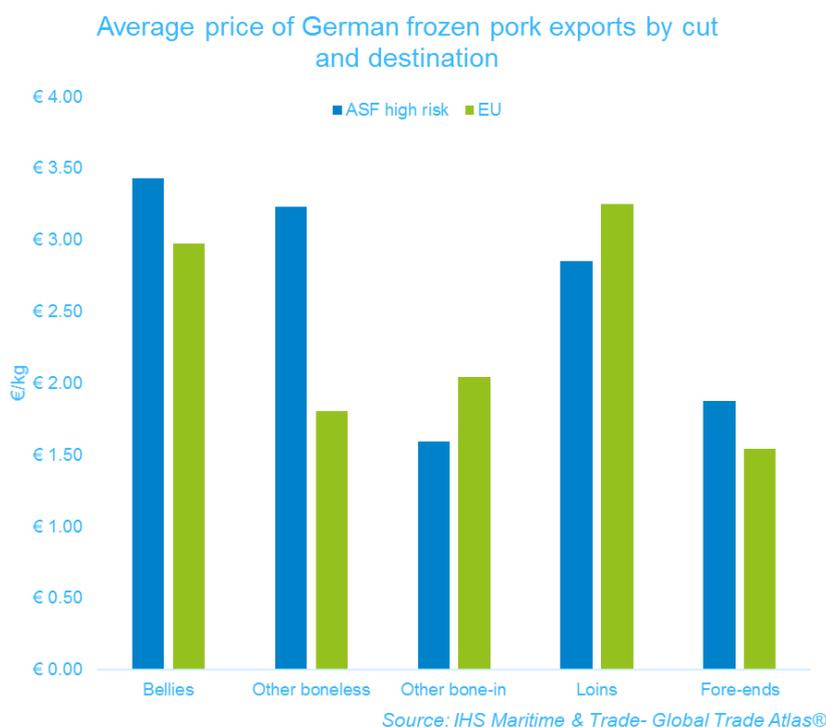
With other EU member states increasing trade outside of the EU, there should be opportunities for Germany to increase its shipments to other EU member states. Italy, France and the UK, all previously identified as likely to receive fewer shipments from Denmark, the Netherlands and Spain, could be key targets, although there would need to be increase in all intra-EU trade routes. Note that there is a risk around the UK market, which, after Brexit, may no longer be able to trade freely with the EU.

Outside the EU, opportunities will be more restricted. Shipments to Hong Kong will probably increase, partly as a gateway to the Chinese market. A number of German plants temporarily lost approval to directly supply China in early 2017 and shipments to Hong Kong more than trebled during the year, to 17,500 tonnes. However, this trade is unlikely to be able to absorb much more German pork, especially as the Chinese market has recently been much better supplied. Between January and May of this year, Hong Kong pork imports declined by almost 25%. Ultimately, the success of this market will depend on overall supply levels in China at the time, which may depend on the development of ASF in China.

The US is another large market that has previously accepted regionalisation in EU countries with ASF. However, currently, Germany has virtually no presence in the US market, suggesting that it is unlikely to be a viable growth opportunity in the short term. However, over a longer period of time, growth may be possible. Shipments from Poland increased from only around 1,500 tonnes in 2012 to 60,000 tonnes in 2017.

## What might all this mean for EU pork prices?

Price will, of course, be key to instigating these changes. Note that frozen pork exports have a higher average unit price outside the EU market. This reflects the fact that cuts with a lower value on the EU market can be more popular internationally, thus having a higher value. As such, being able to sell more “low-value” cuts outside the EU adds value to the carcass. If Germany loses this ability, carcass prices will have to fall as this less desirable product is traded on the EU market. In 2017, the average value per kg of Germany’s frozen pork exports within the EU was 30% lower than the trade at risk outside the EU.



If other EU countries are able to sell more outside the EU, this could help support their carcass prices. However, if we anticipate that other EU exporters may be unable to fully capture the market share previously held by Germany, their domestic prices are still likely to fall overall. This would be attributed to additional supplies of low-cost German product devaluing the EU market, which would, of course, still be the largest destination for EU-produced pork. Exporters trying to increase exports outside the EU may also lower prices to increase their competitiveness on the international market.

### What about the live trade?

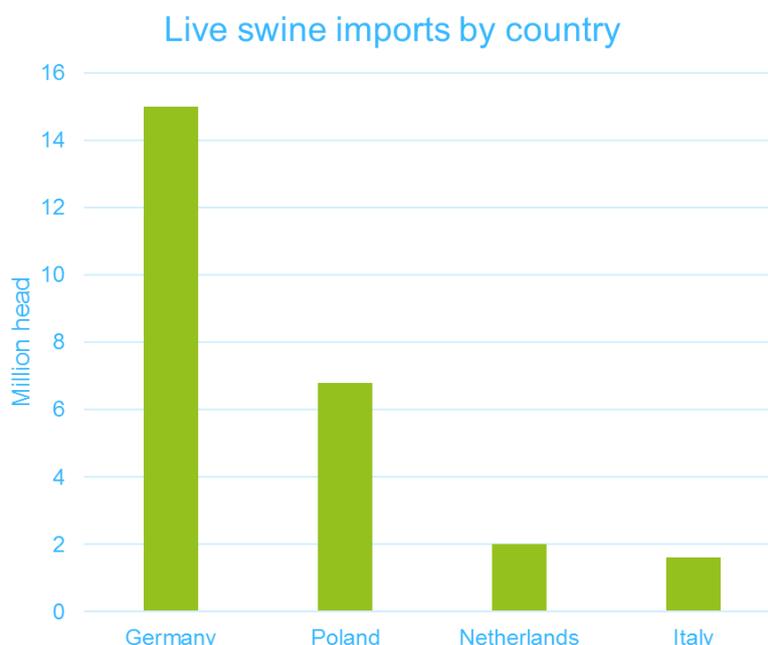
Germany is also a large importer of live pigs, from the Netherlands and Denmark in particular. In 2017, around 11 million weaner pigs were imported, as well as around 4 million pigs for slaughter.

In the face of restricted export opportunities in Germany and concerns about future ASF developments, the demand for weaners is likely to contract. As Germany is such a large importer of these animals, this may lead to a significant oversupply and therefore reduction in the price. Weaner prices may be hit harder than finished pig prices in the short term because alternative markets will more limited.

There may be a move towards finishing more of these pigs within their domestic markets where possible, which would make the meat more marketable. However, lack of finishing space in Denmark and the Netherlands means this change would take time to implement. Environmental regulations may also make this expansion challenging, particularly in the Netherlands.

An anticipated large drop in weaner prices would perhaps also encourage other EU markets to import more. For example, Spanish production has been increasing and, with growing export opportunities on the back of the removal of competition from Germany, this might encourage growth in weaner imports.

Ultimately, a contraction in German demand is likely to signal a reduction in the production of weaner pigs, to bring supply back in line with demand. This would lead to the eventual scaling back of EU production, which would be price supportive.



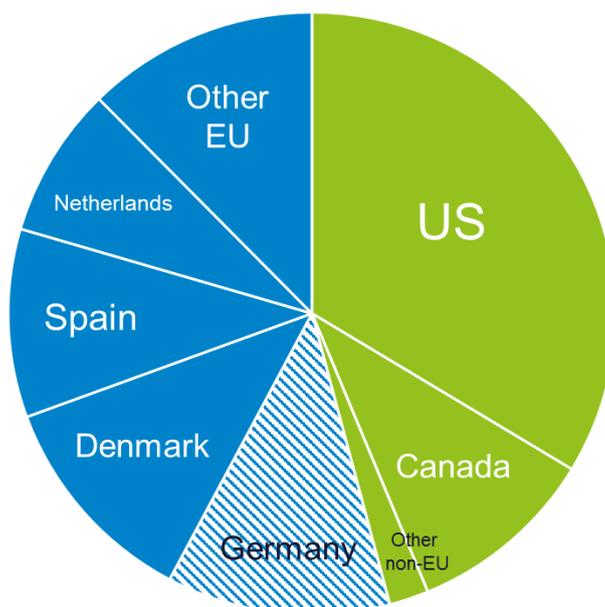
*Source: IHS Maritime & Trade- Global Trade Atlas®*

It is also likely that slaughter capacity would need to increase in Denmark and the Netherlands to reduce the export of animals for slaughter in Germany. It is uncertain whether meat from animals reared outside Germany would be acceptable to countries implementing a total ASF-induced ban on German pork.

## What about offal?

Germany exports around 200,000 tonnes of offal to countries at risk of introducing a total ban if ASF were to be contracted each year. China is by far the largest recipient, with volumes totalling around 180,000 tonnes in 2017. This is around 12% of Chinese offal imports.

Chinese pig offal imports



It may be challenging for other EU countries to compensate for this trade in terms of supply availability. Around half of offal exports from Spain, Denmark and the Netherlands are already destined for China (350,000 tonnes). Hong Kong receives a further 7%, but this comes from plants without Chinese approval, which may make it more difficult to switch to directly supplying the Chinese market. Offal exports to China would need to increase by 60% to compensate for the absence of the German supply. Supply availability may make this difficult to achieve – the volume required is virtually on a par with total EU offal shipments from Spain, Denmark and the Netherlands.

If Chinese demand was to remain constant, more product may need to come through Hong Kong. This could come directly from Germany. Direct US shipments to China, which hold around a third of the Chinese pig offal import market, are also under threat at the moment. Hence, China would need to import more offal from Hong Kong in general. However, the level of import demand in future years remains uncertain, as production has been increasing but may now be challenged by ASF.

## Overall outlook

If Germany contracts ASF in its boar population, a decline in pig prices on the EU market seems inevitable. Supplies on the EU market would be expected to rise somewhat and, even though other EU countries can be expected to pick up on Germany's lost trade, this will depress the domestic market. The urgency of new suppliers needing to compete on the international market could also mean that export prices fall. At the same time, EU pig production is currently on a slight upward trend, but with consumption stagnating. This could add to the additional supply and downward price pressure.

Pig prices fell by 20% when the Russian import ban came into effect in 2014 and a similar degree of decline might be anticipated if Germany contracts ASF in its wild boar population. A greater degree of decline would be expected on the German market because of limited market opportunities compared to the rest of Europe.

Compared to the Russian ban, the offal market would not be expected to grow. In fact, it may even shrink depending on demand in China/Hong Kong. This could amplify the market decline. However, in contrast to the 2014 situation, a devaluation of pig fat would not be expected because this is not such an important part of the affected trade.

Because of the importance of Germany as a destination for weaner pigs, and limited alternative, the weaner market would be expected to fall ahead of the finished pig market. Continuing low prices would be expected until supply can decline in line with demand, or the export situation improves.

### UK outlook

Lower EU prices would no doubt weaken the UK pig price. UK prices are typically less volatile than prices on the EU market and, based on the past five years, typically a decline of €1 in the EU average pig price translates into around a 50p decline in the UK price.

The UK is a net importer of pig meat from the EU and, assuming trade is unimpeded when ASF hits (ie no change to trading relations as a result of Brexit), we can expect to import more pig meat from Germany and perhaps less from Denmark.

It may be possible for the UK to pick up on some of the lost German trade after ASF detection; however, as a small supplier compared to Germany, it is doubtful that volumes will remove much surplus from the EU market as a whole.

Another factor to bear in mind will be the cull sow trade. The UK currently exports 30,000 tonnes of pork to Germany every year, which is predominantly cull sow carcasses. There is a lack of capacity to process these carcasses in the UK, so export will need to continue, albeit at a reduced price. Volumes going to Belgium (the only other noteworthy market for these carcasses) may also be compromised now ASF has been detected there. However, cull sow meat is commonly used for manufacturing and processed pig meat products, not products generally exported outside the EU. As a more internal market, this trade and these prices may be less affected than the finished pig market.

### Further forwards

Here, we have discussed how the market might respond to the initial detection of ASF in wild boar in Germany. Clearly, there is much uncertainty around the reaction. This is not intended as a forecast, but is merely a starting point for considering the possible wider market repercussions.

Looking further forward, the outlook would be even more uncertain. ASF may be detected in the German commercial pig population, disrupting production and internal market trade. Equally, wild boar with ASF may be found in Denmark or the Netherlands – a further blow to EU exports that may be more difficult to accommodate.

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