



African Swine Fever: A Global Update

Rabobank's View on Opportunities and Threats

RaboResearch Food & Agribusiness

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Summary: Covid-19 Overshadows ASF, but ASF's Influence Prevails

African swine fever remains the dominant issue in global animal protein – as it has been since 2018. Covid-19 further distorts the outlook, constraining production, consumption, and trade.



ASF is still the major influence on global pork markets

- *ASF continues to impact pig herds and restrict pork production in China, Vietnam, the Philippines, and parts of eastern Europe.*
- *Current hotspots of ASF activity are in the Philippines and eastern Europe.*
- *Biosecurity measures remain the most effective defense against ASF. We do not anticipate an effective vaccine against ASF to be commercially available in 2020.*

China and Southeast Asia will continue to increase pork imports

- *China's pork production is expected to decline by a further 15% to 20% in 2020, while in Vietnam and the Philippines, the declines are expected to be close to 10%.*
- *Import demand will rise in these countries in 2020.*
- *In China, we expect pork imports to reach record levels, while imports of other species will also be strong.*

Global supply has tightened as a result of Covid-19

- *While we had expected pork production to increase in North America, Brazil, and some parts of Europe in 2020, the impact of Covid-19 means that we now expect constraints in all major producing countries.*
- *We also expect Covid-19 to impact pork consumption, largely via the reduction in foodservice channel operations.*
- *The reduction in consumption will not, in our view, make up for reduced production, resulting in relatively tight pork markets.*

Many uncertainties blur the trade outlook

- *The main uncertainties we see in global pork markets, associated with ASF and influenced by Covid-19, are:*
 - *The loss of production associated with processing plant closures and slowing of operations;*
 - *The possibility that ongoing geopolitical tensions between the US and China will affect pork trade; and*
 - *The risk of an ASF outbreak in a major producing country in Europe, such as Germany.*

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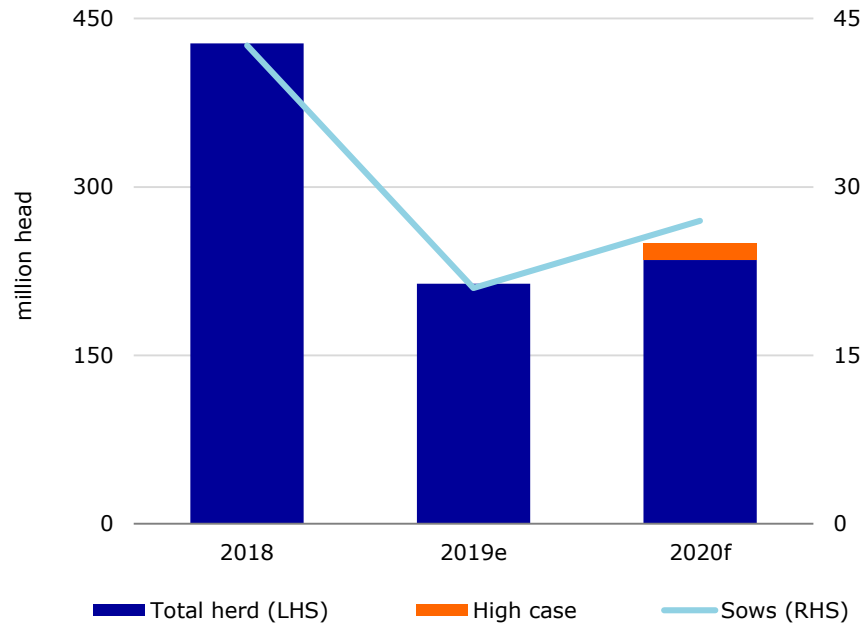
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We Expect China's 2020 Pork Meat Output to Drop by 15% to 20%

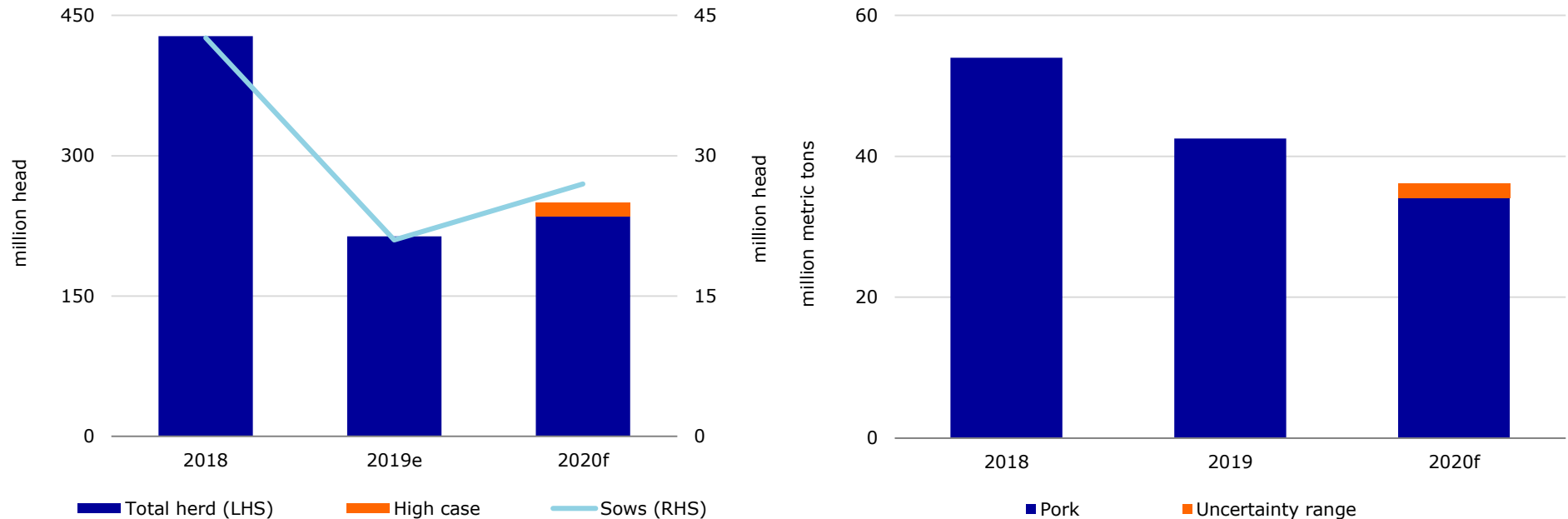
We maintain our view about pork production in 2020. We have changed our view of China's pig herd in 2020, with a faster recovery now expected, due to rapid restocking by large companies.



China's pig herd will likely rebound faster in 2H 2020



We forecast a 15% to 20% decline in China's pork production in 2020



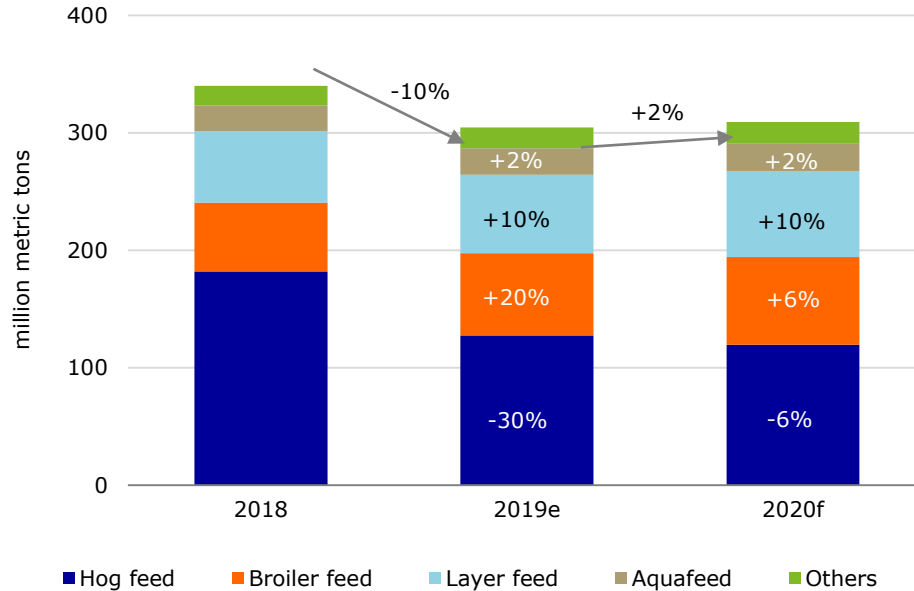
- ASF continues to spread in China, but at a slower pace. There have been a number of new cases in 2020, but no widespread outbreaks. A few factors have contributed to this, including improved biosecurity, lower hog population density, and knowledge and experience accumulated in the past year. Restocking is mainly driven by large players who have heavily invested in greenfield farms and breeder imports.
- The government has released policies to encourage production, and some previous restrictions have been relaxed to give farmers more space to build farms. We expect the herd to rebound strongly in 2H. We adjusted our forecast of the herd to a higher level by end of 2020.
- China's official statistics show that pork meat output dropped by 29% in Q1 YOY. Due to negative market signals in April and May, pork meat output is expected to have a smaller decline in Q2, as producers liquidated overweight hogs to avoid potential losses. However, for the whole year, we maintain our forecast that pork meat will drop 15% to 20% YOY, and pig slaughter numbers will drop more. The average weight in 2020 is estimated to increase by more than 10% YOY.
- Gilt retention for restocking remains the practice across the industry. It is estimated that half of the sow herd is three-line-crossbred female hogs.

Chinese Feed Demand Growth Is Set for a Modest Rebound in 2020

Hog feed will have another year of decline, although at a slower rate, while poultry feed growth will slow down. Soymeal benefits from changes in formulas, while corn is subject to political uncertainties.

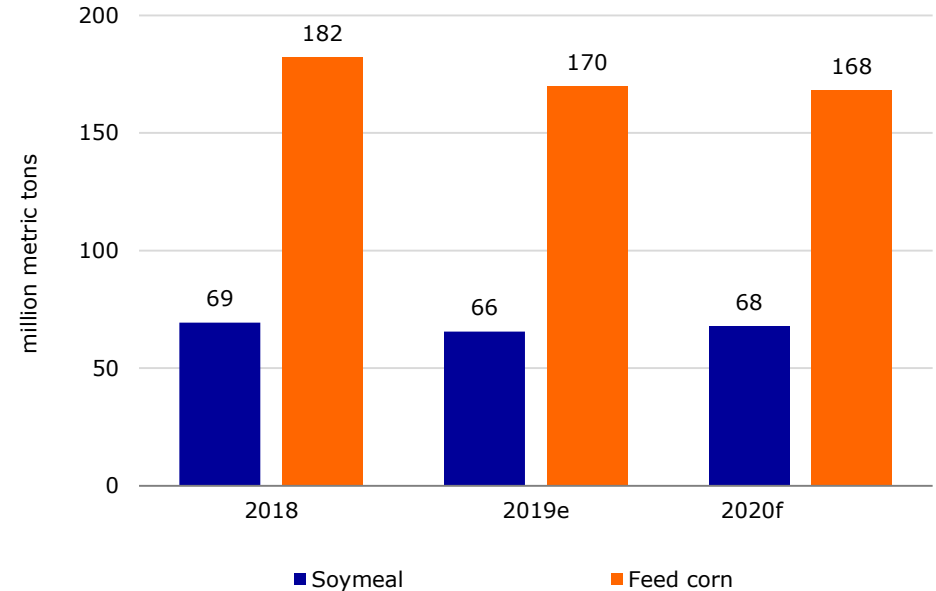


Chinese feed consumption forecast to rise, 2018-2020f



- Driven by positive margins and government support, Chinese pig herd rebuilding is under way. Month-over-month growth in the commercial hog inventory already shows signs of bottoming out, particularly in the north. However, overall hog feed usage will decline again in 2020.
- Chinese hog farms are retaining a large number of gilts for breeding purposes. Due to genetic differences, these sows have inferior productivity, further slowing feed demand.
- We expect average slaughter weights to increase in 2020, by at least 10% YOY. Such an extended fattening period is beneficial for 2020 hog feed use.

Chinese soymeal and feed corn usage, 2018-2020f



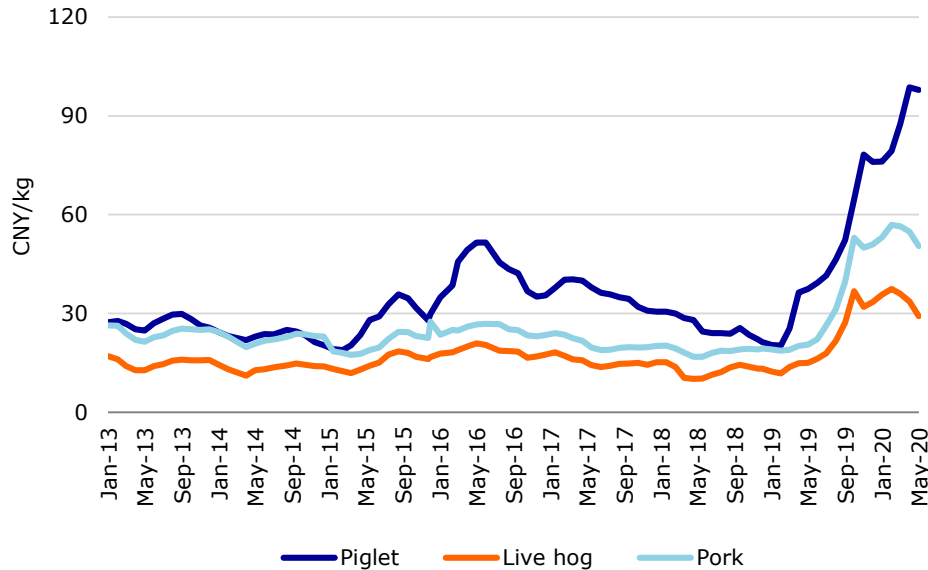
- Confronted with Covid-19, economic turndown, and slow foodservice, 2020 consumption growth of broiler meat, especially yellow-feather birds, will significantly slow down.
- Overall, in our base scenario, we believe that Chinese 2020 feed usage will rebound by 2% YOY. Soymeal use will rise by 3% to 4% YOY. Amid positive margins, hog farms are adopting high-protein feed formulas, to enhance pigs' health. In addition, poultry farms are using more soymeal to replace other protein meals.
- China has been increasingly purchasing US corn and sorghum in recent months. However, escalating tensions between the US and China could affect feed corn usage.

Prices Across All Animal Proteins in China Softened in Q2

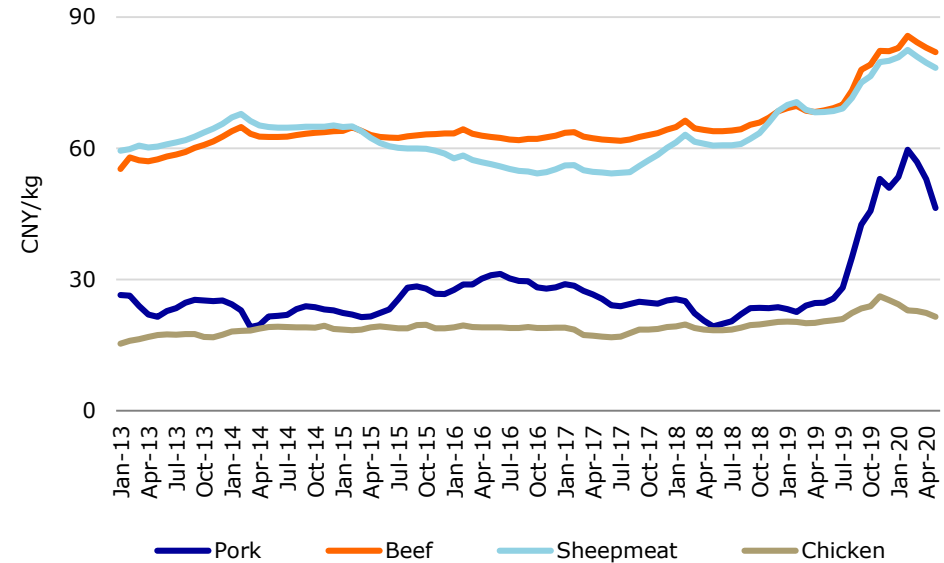
Hog prices have dropped below CNY 30/kg, surprising the market. We expect prices to resume their upward trajectory soon, along with the further recovery of meat consumption.



The decline in pork prices reflects soft demand



Retail prices of other proteins follow pork price movement



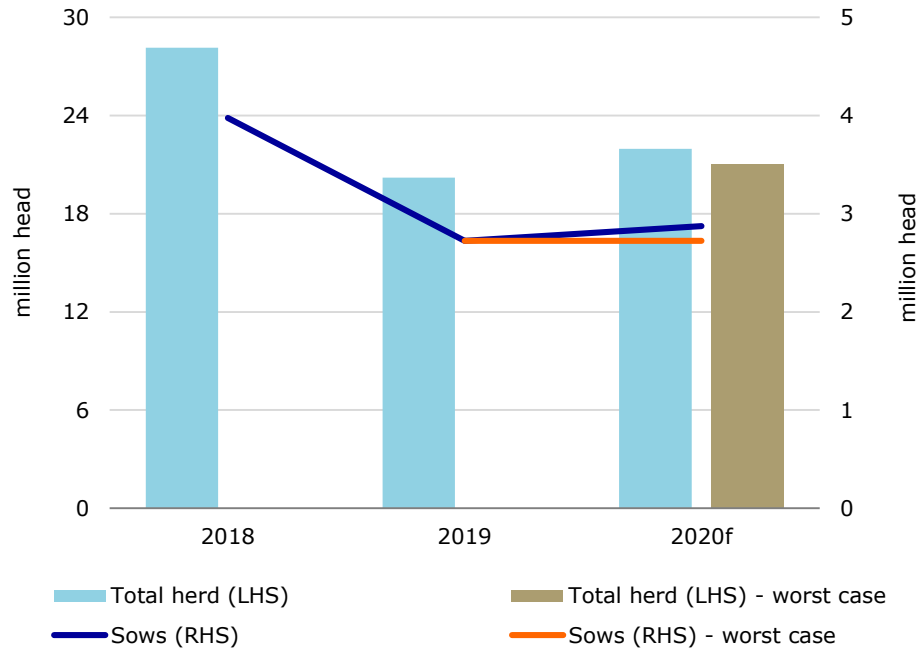
- Prices of live hogs and pork meat dropped from March to May, while prices of piglets have been more resilient. Live hog prices dropped to CNY 25/kg in mid-May, close to the cost of production in some farms, causing panic selling for a short period. Weak price performance mainly reflects weak demand, which only started to recover at the end of May. Government efforts to curb prices, by constantly releasing frozen pork from state reserves, also contributed to the situation.
- Prices are expected to rise in June, as demand recovers further. However, government priorities of ensuring livelihoods and making necessities more affordable mean prices are not expected to increase strongly. In most cases, live hog prices will fluctuate in the range of CNY 28/kg to CNY 32/kg.
- Animal protein consumption has been weak in 1H 2020, due to the closures of foodservice and wet markets. Since March, retail prices of all other proteins have softened, with poultry prices seeing the largest drop.
- Consumption is expected to improve in 2H 2020, as foodservice and institutional consumption recover. Meanwhile, high unemployment, the bankruptcies of many independent restaurants, and lower incomes will restrict the consumption of high-priced proteins. In addition, in the case of poultry, demand will likely be slower to recover than supply. These factors indicate that prices will be under pressure and fluctuate, though they are generally supported by the pork supply shortage and demand recovery.

In Vietnam, Restocking Is Being Hampered by Piglet Shortages

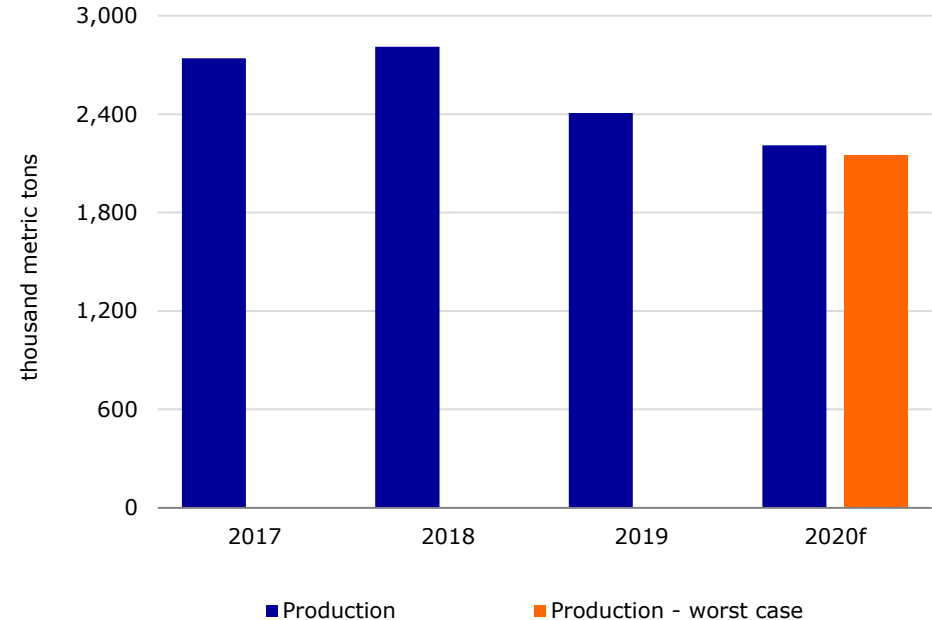
Pork production is expected to decline in 2020, although at a slower pace of 8% to 10% YOY



The herd is expected to stabilize in 2020 after significant losses



2020 pork output may drop 8% (base case) to 10% (worst case)



- ASF outbreaks continue in 19 provinces (of 63), with about 30,000 pigs lost in the first five months of 2020 – about 6m pigs were lost in 2019.
- We anticipate about 14,000 sows to be lost to ASF this year in our base case, a fraction of the 1.25m sows lost in 2019.
- The sow herd is expected to reach about 2.9m by the end of 2020, and total herd to reach about 22m. About half of the herd is held in household farms.

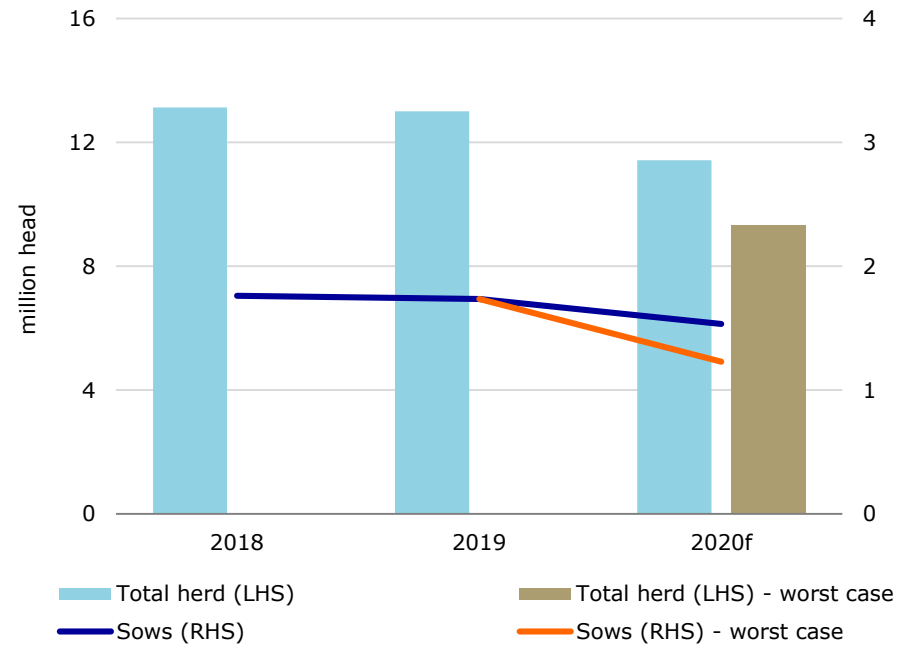
- Vietnam's Q1 2020 pork production reached 592,000 metric tons cwt – 19.3% below the same period last year.
- Despite an expanding sow herd, pork production in 2020 is expected to decline by 8% to 11% YOY, to 2.15m to 2.21m metric tons cwt.
- Increased costs of piglets and biosecurity measures will limit household farms' ability to restock, as earlier losses have depleted capital.
- Investments in new large farms and mechanized slaughterhouses will pick up to cover the supply gap, but new output will not hit the market until 2021 at the earliest.

Herd Losses Continue in the Philippines

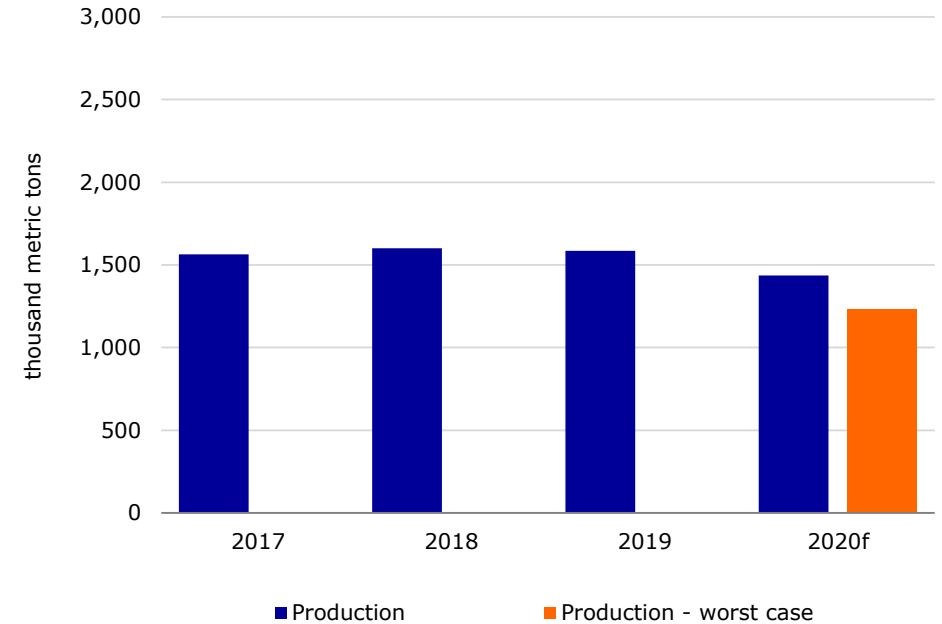
Continuing ASF outbreaks have mainly hit backyard farms in Luzon. It is possible ASF could spread in other areas, and if this happens, the herd and pork production would fall further in 2020.



Restocking delays and sow losses to reduce production this year



A worst-case scenario assumes ASF spreading faster



- OIE disease information showed that ASF outbreaks have continued to spread in Luzon backyard farms at a relatively constant pace this year.
- Up to early April, the reports revealed that close to 98,000 pigs had been lost, on top of 206,000 head lost last year.
- We are maintaining our forecast for a 12% decline in the Philippines' sow and total herds in 2020 (base case).
- In our worst-case scenario, the disease spreads outside Luzon, and the 2020 sow herd drops by as much as 29% and total herd by 28%.

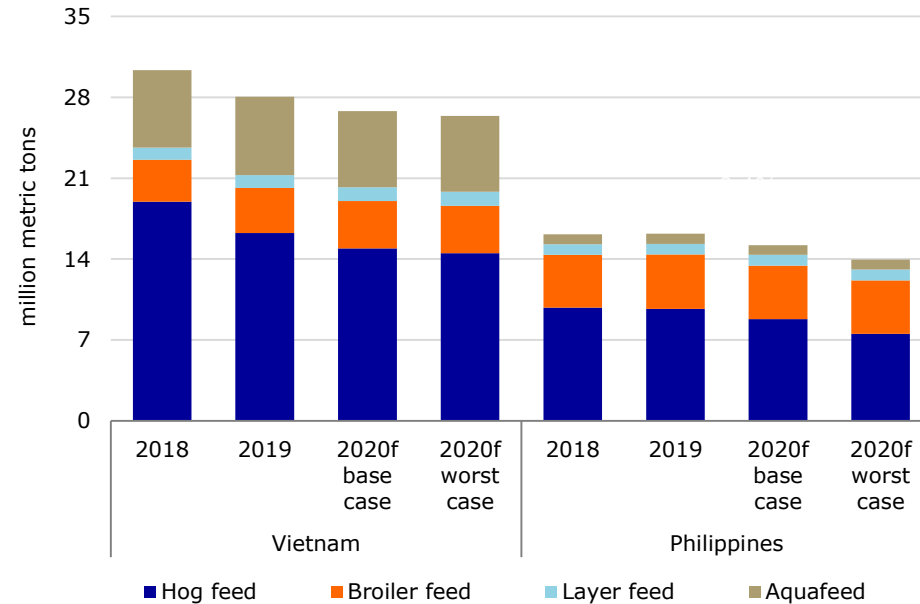
- We expect 2020 pork production to decline by 9% YOY, to 1.44m metric tons cwt (base case).
- Restrictions on live hog and pork product movements between provinces (to contain ASF outbreaks) and fear of contagion may reduce restocking in affected areas, and deter the importation of genetics.
- Enhanced quarantine measures throughout Luzon have reportedly delayed restocking. Unaffected regions may shift supplies to meet demand in Luzon.

Feed Demand in Vietnam and the Philippines to Decline in 2020

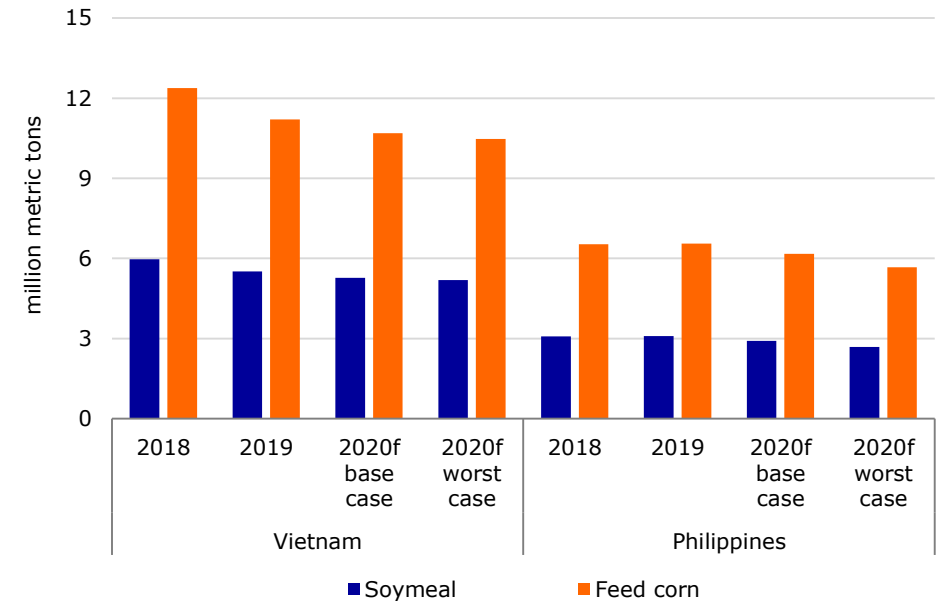
Slowing economic growth, in addition to the impacts of ASF, negatively impacts domestic animal feed consumption



Vietnamese and Philippine feed consumption forecast, 2018-2020f



Vietnamese and Philippine soymeal and feed corn usage, 2018-2020f



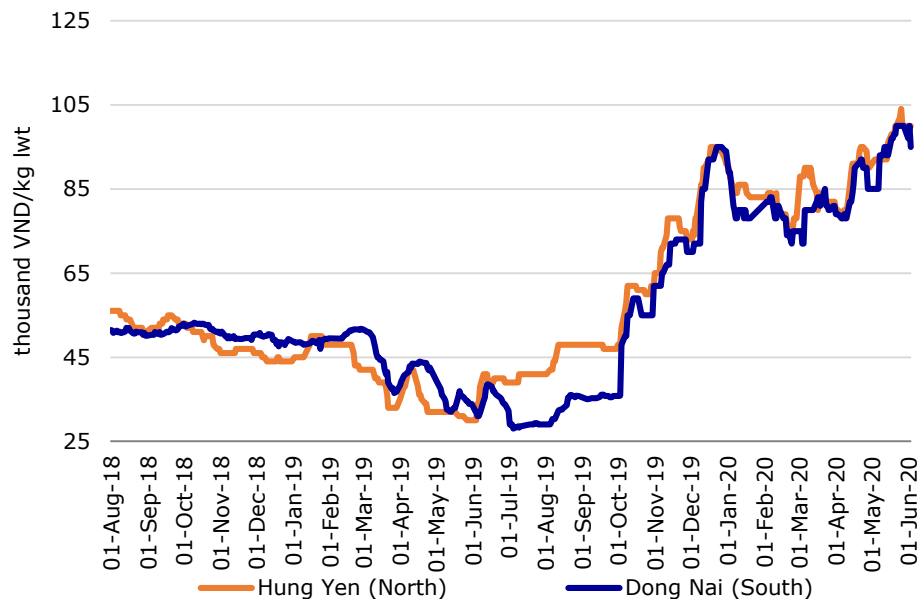
- In our base case, Vietnamese and Philippine hog feed consumption is expected to decrease by 8.2% and 9.3%, respectively, in 2020 due to the effects of ASF and slowing economic growth.
- Slowing economic growth also negatively affects consumption of broiler feed, layer feed, and aquafeed. Total consumption of broiler feed, layer feed, and aquafeed in Vietnam is expected to be flat YOY in 2020, while total consumption of these animal feeds in the Philippines is expected to decrease by 1.2% in 2020.
- Overall, in our base case, total animal feed consumption in Vietnam and the Philippines will decrease by 4.4% and 6.0%, respectively, in 2020.
- Vietnam's corn and soymeal demand for animal feed is expected to decrease by 4.6% and 4.4% YOY, respectively, in our base case for 2020.
- Philippine corn and soymeal demand for animal feed is expected to decrease by 5.9% and 5.8% YOY, respectively, in 2020.
- In our base case, Vietnamese and Philippine imports of corn and soymeal are expected to be flat YOY in 2020, despite the decrease in animal feed consumption. We expect the relatively low price environment for grains & oilseeds in 2020 will result in the procurement of corn and soymeal for stockpiling purposes.

Live Hog Prices to Remain High in Vietnam and the Philippines

Higher demand in Vietnam and the Philippines and slow production recoveries have led to a surge in hog prices. Vietnam is allowing live pig imports to place some downward pressure on local prices.

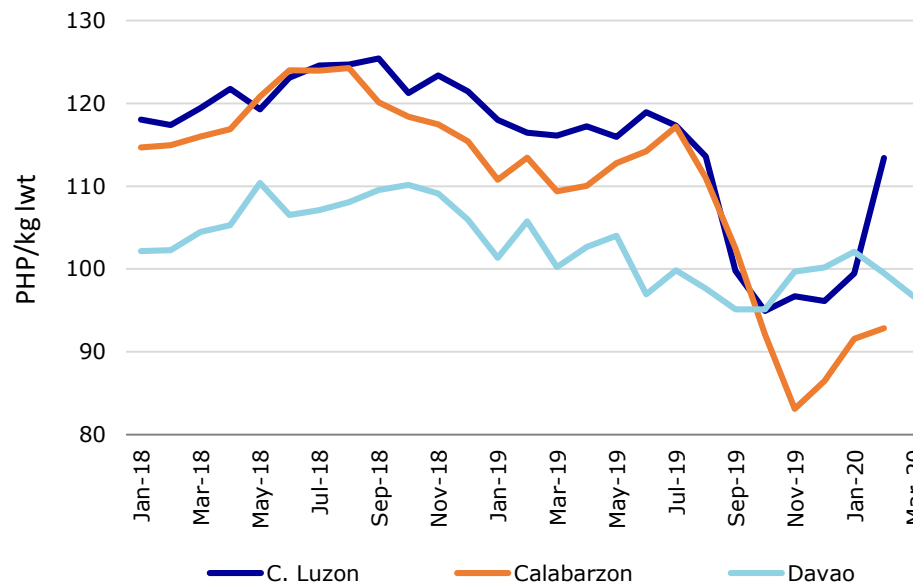


Hog prices may stabilize in 2H 2020, but stay above VND 70,000/kg lwt



- Live hog prices have stayed in a narrow range of VND 90,000 to VND 100,000/kg since Covid-19 quarantine measures were lifted in early May.
- To stabilize domestic pork prices, Vietnam will import live hogs from Thailand for the first time. We estimate the required volumes – expected by the end of June – to range between 4,000 and 5,000 hogs per day.
- Vietnam’s imports will alleviate Thailand’s slower domestic demand, partly divert hog exports destined for Laos, Cambodia, and Myanmar, and could bid up prices of Thai-exported live hogs. Thai pork consumption is expected to decline by 6% this year, due to the impacts of Covid-19 on tourism and foodservice.

Philippine live hog prices to continue increasing in 2H 2020



- Central Luzon and Calabarzon hog prices have increased 11% to 17% between November 2019 and February 2020. Nationwide, hog prices have increased by 19% since the low in November 2019.
- Price escalation is not yet as steep as seen in Vietnam, as demand has only started to return. We expect the price recovery to strengthen in 2H 2020.
- Based on the combined impacts of ASF and Covid-19, overall pork consumption in the Philippines is forecast to decline by 8% YOY this year.

In Europe, Concerns Over ASF Remain High

The potential of ASF spreading further is high, as disease pressure has not yet eased in Poland and eastern Europe. Belgium, on the other hand, continues to make good progress.

The ASF situation at the Polish-German border remains tense

- ASF entered two commercial pig farms in western Poland in late March and early April, leading to the eradication of over 30,000 pigs. A third case on a commercial farm was confirmed on June 5 in eastern Poland
- In the first five months of 2020, 2,487 outbreaks among wild boars were reported in Poland, which is already more than in 2019.
- Defense at the Poland-Germany border is at high levels
 - In the German state of Saxony, hunters must report every wild boar that has been found dead or been killed.
 - Hunters are granted an expense allowance of EUR 30 per wild boar to support control measures (labeling, sampling, etc.).

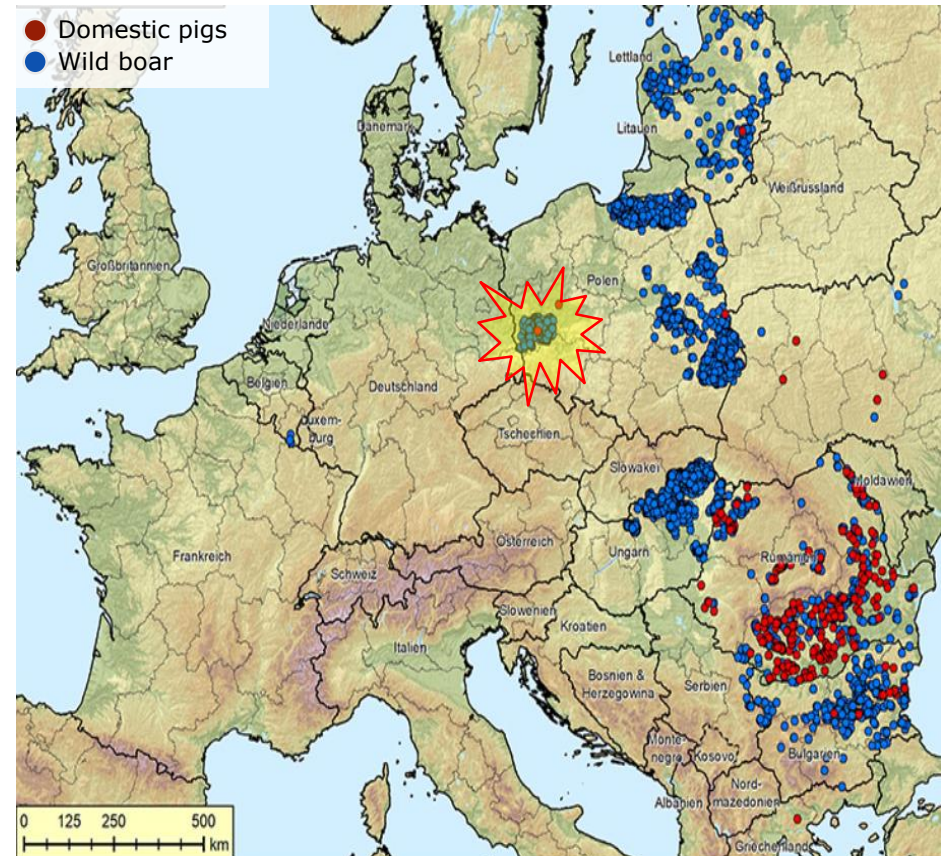
Germany increases its efforts for the acceptance of zoning

- The state of North Rhine-Westphalia, home to 30% of German pig businesses, has announced a voluntary program to assess ASF status at the farm level. This structure could decrease disruptions, if ASF is found in Germany, by providing a reliable basis for trade partners to accept sub-national regionalization.

Belgium to reduce the ASF-infected zone

- Belgium's proposal to reduce the ASF-infected zone was approved in May 2020, as signs of disease activity have been absent for months.
- The last positive wild boar carcass was discovered in August 2019.
- Infected wild animal remains have been found on six occasions after August 2019. No remains have been discovered since March 10, 2020.
- If no new cases are discovered, Belgium could regain its ASF-free status in October 2020, at the earliest.

In Poland, the wild boar population is still heavily affected by ASF, while the impact on domestic pigs is limited.



Covid-19 Complicates the Situation with ASF

Covid-19 has affected near-term pork production and consumption, and could also affect production, consumption, and trade over the longer term. This uncertainty further complicates the pork outlook.

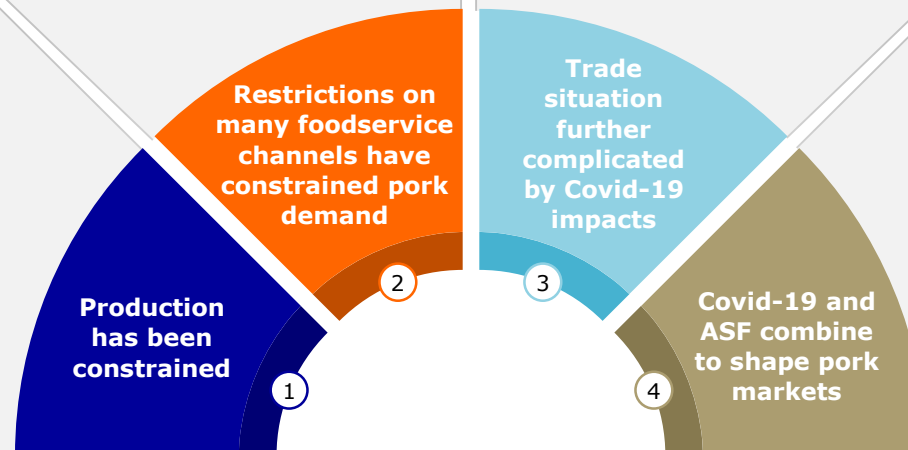


- **The temporary closure of pork processing plants** in many countries, due to Covid-19 infections among workers, has been widely reported.
- **The slowdown of production in all plants** to reduce Covid-19 transmission risks has, though, had a greater impact on pork production.
- **Some of the changes made within processing plants** will become part of the 'new normal', and it is likely the cost of processing will increase as a result.

- **The closure of many foodservice channels** in many countries has impacted overall pork demand, and demand for certain products that rely heavily on foodservice.
- While foodservice is now reopening in most parts of the world, and lifting demand as a result, **a return of 2019 demand levels is unlikely in 2020.**
- **The economic slowdown triggered by the Covid-19 pandemic** has reduced consumer confidence, and we expect prices will need to adjust to enable consumption to match availability.

- **Shipping movements have already declined as a result of Covid-19**, pushing up costs for pork trade, and we do not anticipate these recovering in 2020.
- **The economic slowdown has also caused relative currency movements**, with an initial trend of the US dollar strengthening against other currencies, changing competitiveness in trade.
- While the value of the US dollar has been easing, **we expect ongoing volatility in FX markets to affect trade through 2020.**

- **Both Covid-19 and ASF are important** in driving global pork markets.
- **It is our view that ASF will have more profound and longer-lasting impacts** on global animal protein markets than Covid-19.



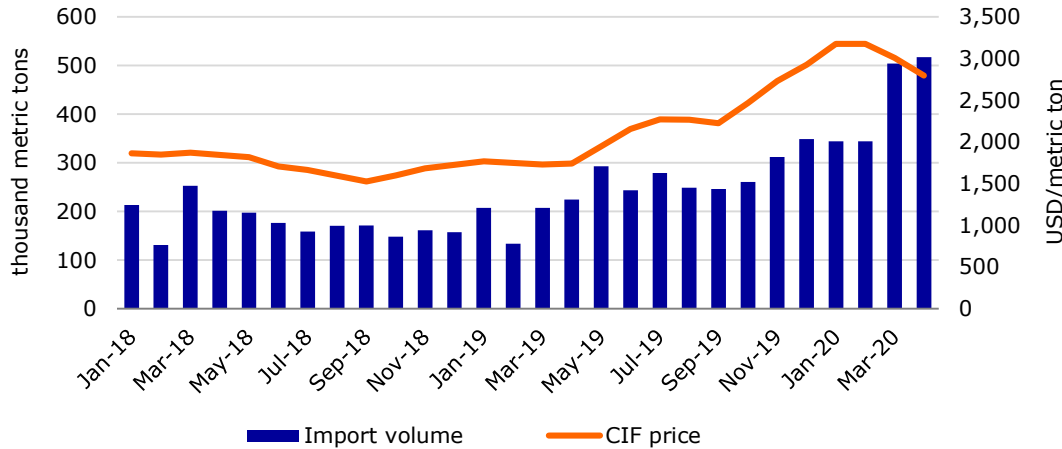
China's Pork Imports Are Expected to Increase Further in 2020

China's pork imports increased significantly in the first four months of 2020. We maintain our view that imports will set a new record in 2020, easing in the coming months and picking up toward Q4.



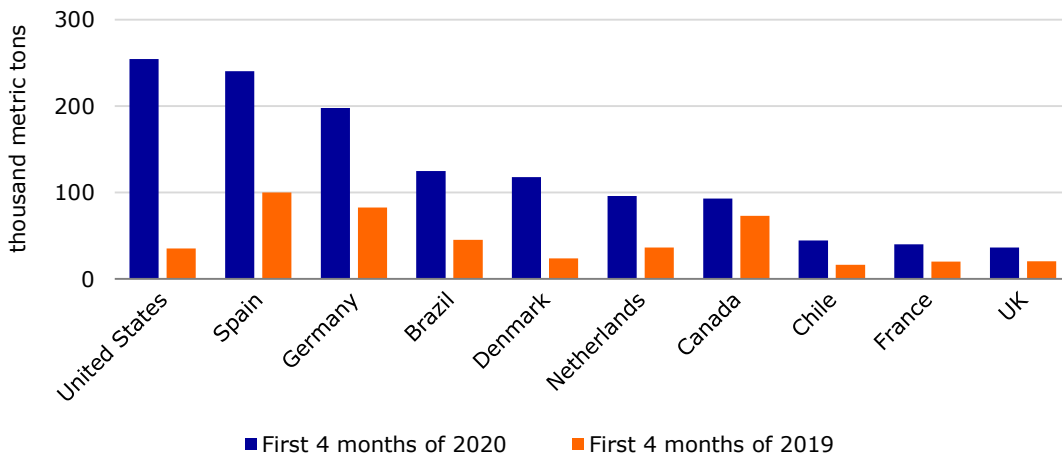
China's total pork imports increased 120% YOY in the first four months of 2020

China's pork imports have surged entering 2020



- China's pork import growth has accelerated in the first four months of 2020, with meat imports up 180% YOY and variety meat imports up 29% YOY. While this is compared with relatively low import levels in early 2019, even compared with the four months of September to December 2019, the increase is still impressive, with meat imports up 58% and variety meats up 16%.
- Rankings of top suppliers to China have changed greatly in 2020. The US has become the largest supplier, given the 'phase-one' deal. Imports from the US increased sixfold over 2019 levels.
- We maintain our view that China's pork imports will reach a record level of about 3.5m metric tons in 2020.
- Surging imports have created high inventories of frozen pork, while domestic demand for frozen pork – mainly from processing and foodservice – has failed to keep pace. With foodservice expected to further recover entering June, the inventory is expected to reduce gradually.
- Imports for the rest of 2020 are full of uncertainty, subject to the disruptions to pork production and logistics in exporting countries, as well as China's domestic pork prices. Imports will likely ease in the coming months and pick up again in late Q3 and Q4, assuming the Covid-19-related supply restrictions in exporting countries have improved by then.

China's top-ten pork meat import origins, first four months 2020 vs. 2019



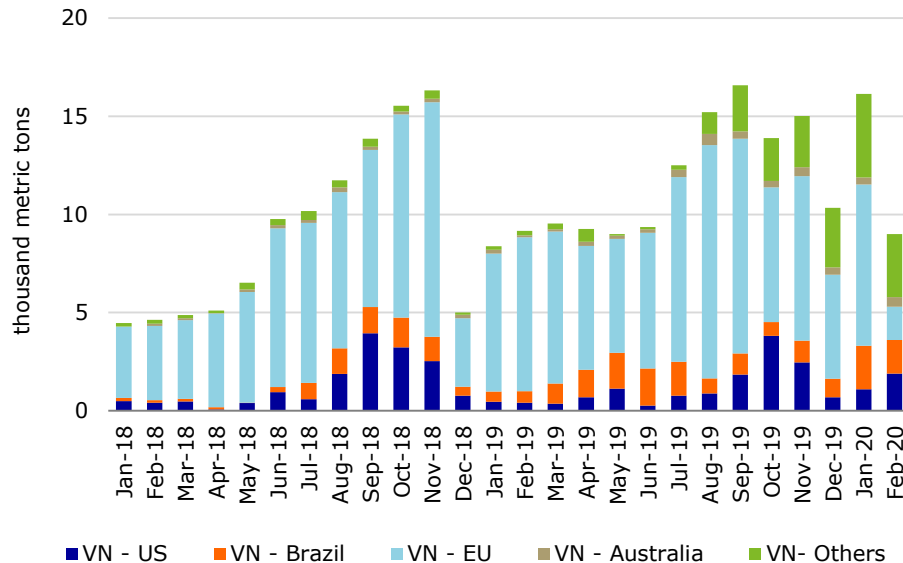
Southeast Asia to Adjust Policies to Ensure Access to Imports

Slower-than-expected recoveries in domestic production to prompt more imports into Vietnam and the Philippines in 2020

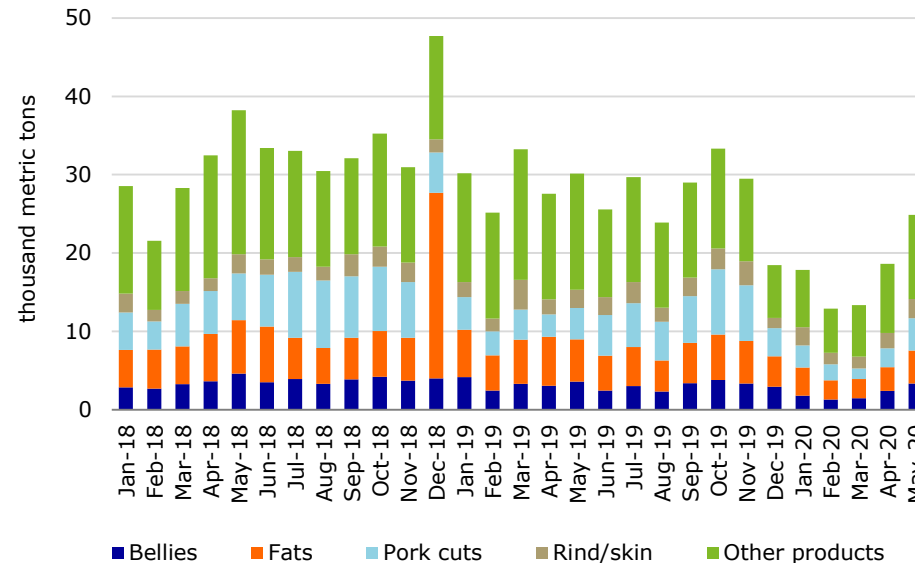


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More imports needed in Vietnam



Imports have rebounded since April 2020



- Vietnam's pork imports surged 53% YOY in the first two months of 2020 and are expected to remain strong. The EU has given up share of imports in favor of Russia, Brazil, and the US.
- To help lower prices this year, frozen pork import tariffs are due to be temporarily reduced from 15% to 10% (comparable to 9.3% under CPTPP). Tariffs will revert back to 15% on January 1, 2021.
- We expect frozen pork imports to reach 240,000 to 250,000 metric tons in 2020, up from 149,000 metric tons in 2019. Live hog imports would reduce demand for frozen pork shipments; if live hog imports go ahead, Vietnam's frozen pork imports may reach only 172,000 to 176,000 metric tons (+15% to 18% YOY).

- Through May 2020, pork imports declined 39% YOY, as ASF outbreaks prompted consumer avoidance of pork and farm liquidation boosted local supply. Imports have, though, rebounded since April. Spain accounts for 37% of all pork imports.
- The government recently granted system-wide accreditation for Spanish pork and beef imports (including meats shipped from foreign meat establishments) through to May 2023.
- We expect pork imports to rebound in 2H 2020, as demand returns after enhanced quarantine measures are lifted. Imports for 2020 are forecast to reach 296,000 metric tons (+5% YOY), even as consumption may ease 8% YOY.

Strong Import Demand and Constrained Supply to Support Prices

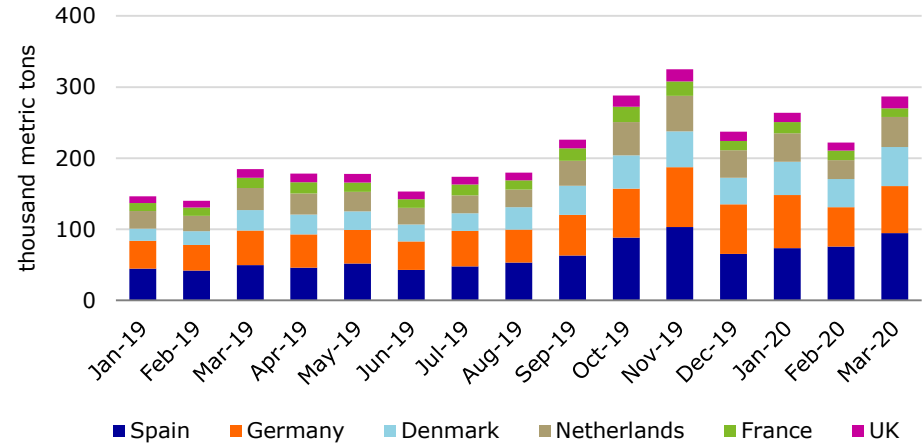
All exporting countries should see strong demand in 2020, although several important risk factors will affect trade



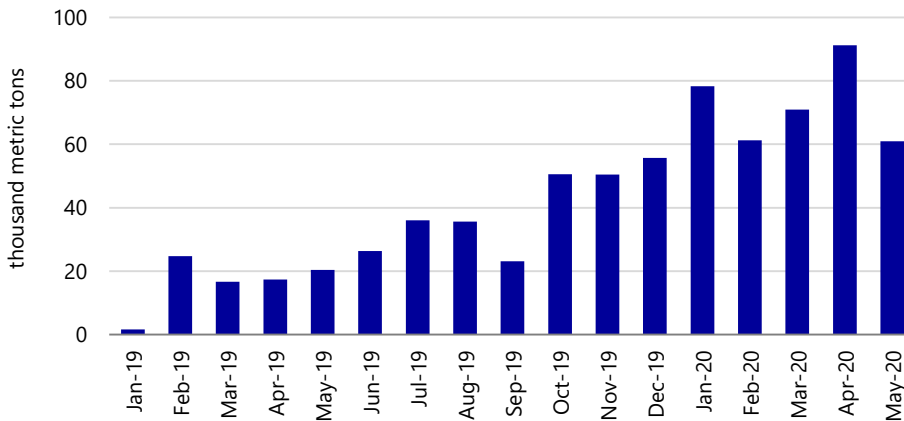
Europe continues to lead pork exports, with opportunities and risks

- US, and to a lesser extent Brazilian and European, exporters have benefited from China's strong import demand in early 2020.
- All exporting countries will expect demand from China and the rest of Asia to remain strong in 2020 and to test the level of exportable surpluses, given constraints on production in all exporting countries.
- Firm demand from importers and constrained supply will keep prices at elevated levels in 2020.
- Geopolitical tensions between the US and China, tariff levels, and currency movements in response to the economic slowdown will create opportunities for some exporters and risks for others.
- Absent these risk factors, we expect the strongest export growth in 2020 to come from the US.

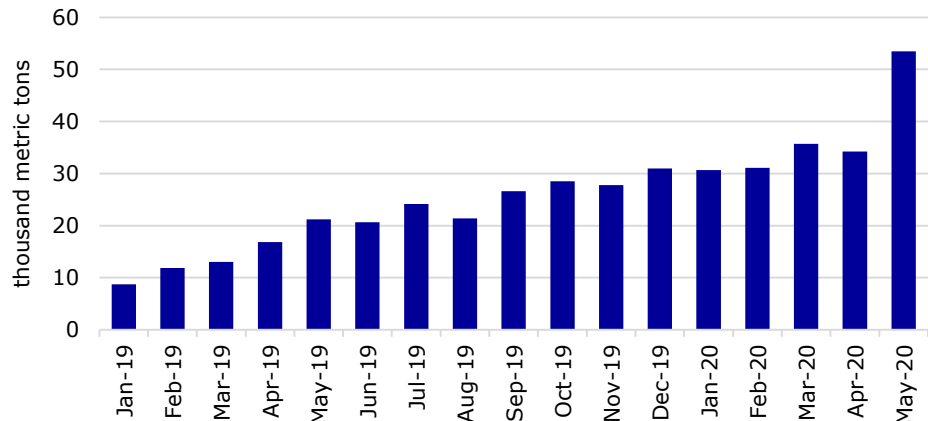
EU-27 + UK pork exports to China and Hong Kong remain strong



US pork exports to China have grown markedly in recent months



Monthly Brazilian pork exports to China, 2018-2020f



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