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Producers Remain Cautious on Expansion as Risks Outweigh Rewards

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Global pork prices continue to rise, as protein shortfalls intensify competition for a shrinking supply. Pork prices have hit record highs in some regions, while trade barriers continue to limit the upside in the US and Canada (see Figure 1). Rabobank expects ongoing price increases through Q4 2019 and into 2020, as markets work to balance supply and demand. Despite rising economic incentives, we expect a limited global production response, as environmental and regulatory constraints, along with the threat of African swine fever (ASF), constrain the industry’s ability to expand. This imbalance is expected to drive higher and more volatile markets in the coming months, magnifying an already tenuous situation.

China: Prices jump, on holiday-led demand

Retail prices rose 78% MOM in September, as inventories were depleted following the surge in pork demand associated with the fall holidays. Slow herd replenishment, particularly in ASF-affected regions, is contributing to the near-term shortfall and resulting increase in pork prices. Pork consumption has suffered, as high prices limit interest. Even so, efforts to rebuild the herd are underway as the economic incentives are sizable and will promote rapid growth where feasible.

Europe: Global trade drives strong returns, but industry growth is constrained

Europe remains the key supplier of pork to the global markets. Brisk exports of pork to China and other parts of Asia helped support a 31% YOY increase in prices and near-record margins. Reports of ASF in Europe have mostly affected feral swine populations, along with sporadic commercial cases.

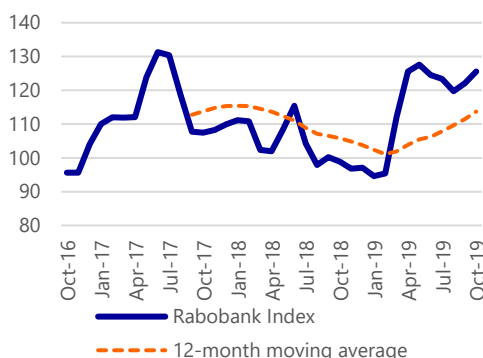
US: Record production more than offsets surge in export demand

Record hog slaughter is weighing on markets, depressing producer returns. Productivity gains continue to outpace expectations, adding further stress to an oversupplied domestic market. Robust exports are absorbing much of the production increase, yet have been unable to fully keep pace. Despite strong exports, Rabobank expects more moderate production growth in 2020.

Brazil: Strong demand boosts production returns

Exports to China continue at a strong pace and are 33% higher than the same period last year through September. Strong demand has driven a 17% improvement in price (USD 2,297/metric ton) and a rebound in margins

Figure 1: Rabobank Five-Nation Hog Price Index, 2016-2019 (Jan 2006 = 100)



Source: national statistics, Rabobank 2019

Figure 2: Rabobank currency forecasts, Oct 2019-Oct 2020

	Oct 22	3M	6M	12M
EUR/USD	1.11	1.07	1.08	1.12
USD/JPY	108.6	107	105	104
USD/CAD	1.31	1.34	1.34	1.36
USD/BRL	4.13	3.9	4.1	4.1
USD/MXN	19.1	19.6	19.8	20.0
USD/CNY	7.08	7.25	7.45	7.75

Source: Rabobank 2019

Feature Story: Global pork taking a wait-and-see approach to growth

African swine fever (ASF) is responsible for an estimated 25% decline in the global hog herd, yet the world remains cautiously optimistic on the potential market demand for pork. The allure of potential record-breaking exports has, thus far, been outdone by the risks. Restrictive trade policies and inconsistent export demand create a degree of uncertainty that makes production increases less compelling. The growing threat of ASF has many producers reluctant to add production, as the risks of herd losses and/or trade disruption mount. Regionally, producers face rising environmental and regulatory challenges that limit growth. Nevertheless, in order to meet the expected 5m to 10m metric ton global pork deficit in 2020, the industry may find adequate economic incentive to grow supply (see *Figure 3*).

China's ability (and that of other Asian countries) to replace lost production is limited in the short run

Industry efforts to replace lost production have, to date, been met with limited success. Without an effective vaccine, it will be challenging for China to quickly replace the 55% of the herd it lost to African swine fever and for herd losses in other parts of Asia to recover. Nevertheless, efforts are underway to expand production, particularly with China's largest operations, as they offer better biosecurity controls. Successful repopulation of large commercial operations could stabilize market losses in 2020, but a full recovery could take several years. Rabobank expects a rebound in production beginning in 2021.

Poor returns and disease risk limit US growth

US producers remain relatively cautious on the outlook for export-led growth, as record production and

unpredictable trade access have yielded disappointing market returns. With record production already straining the available labor supply, particularly at the packer level, there are natural constraints on the industry's ability to expand the sow herd beyond 3% in 2020. Even so, assuming market access to China can be restored and economic incentives are in place, producers will again push for growth. Given labor constraints, however, it is likely future growth will come in heavier weights and not additional head.

Disease and trade disruption limit Canadian pork

The Canadian hog herd has seen limited growth in recent years, as poor returns and regulation have constrained growth. However, a recent PEDv outbreak on the prairies and the ban on pork shipments to China have exacerbated market difficulties. We see little or no growth in the Canadian herd in 2020.

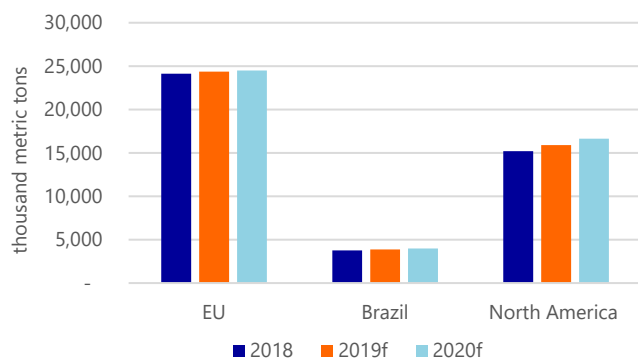
ASF and environmental restrictions are likely to limit the EU response

The risk of ASF spreading in Europe is a major constraint on new production. Further, regulatory initiatives to limit animal-based protein production within the EU are rising and are likely to constrain new production. We have seen some pockets of production growth on the continent in 2019, specifically Spain, but the total increase will be marginal. For 2020, Rabobank is forecasting just over 1% pork production growth in the EU.

Latin America has room to expand

With no immediate threat of ASF and relatively few restrictions on trade, Brazil, Chile, and Mexico are well positioned to add production. Of these, Rabobank expects Brazil to be best suited for growth. Despite earlier volatility, it appears Brazil should increase production by 4% in 2020.

Figure 3: Pork production growth is led by North America, 2018-2020f



Source: EU Commission, USDA, MARA, Rabobank 2019

On Figure 3:

- The US and Brazil are expected to be the leading regions of production growth in 2020.
- Although the US has fewer barriers to increasing production, access to China for exports remains uncertain.
- Brazil has access to China for exports, but its market conditions in 2019 have been uncertain, reducing investment appetite to increase production.
- The EU is expected to increase production in 2020 but faces constraints from ASF and environmental and social pressures.
- Canada could increase production, but, as with the US, access to China for exports remains uncertain.

Dashboard

Legend and units

Production	Exports	Imports	Hog price	Piglet/feeder price	Feed price Kg
1,000 metric tons carcass weight equivalent (CWE)			kg CWE	kg	kg

Δ = year-on-year change

All prices in local currencies

China: Prices are soaring

Herd (May)	Pork meat imports	Hog price	Piglet price
To decline	Rising	Rising	Rising
Hogs: 205.9 Δ -41.00%	Aug: 163 Δ +76%	Sep: 27.3 Δ +89.4%	Sep: 52.4 Δ +104%
Sows: 20.4 Δ -38.95%	Jan-Aug: 1164 Δ +40.4%	Jan-Sep: 16.8 Δ +35.2%	Jan-Sep: 35.5 Δ +33.4%

US: Export growth the key to improving margins

Production	Exports	Hog price	Sow price	Feed price
Stable	Rising	Rising	Rising	Rising
Aug 2019: 1,019 Δ -2.5%	Aug 2019: 231 Δ +16.2%	Sept 2019: 0.93 Δ +9.0%	Sept 2019: 0.71 Δ 24.7%	Sept 2019: 0.62 Δ +7.6%
YTD: 8,093 Δ +3.8%	YTD: 1829 Δ +3.5%	YTD: 1.09 Δ +5.6%	YTD: 0.84 Δ -0.5%	YTD: 0.60 Δ -1.5%

Canada: Export restrictions pressure margins, but supply remains tight

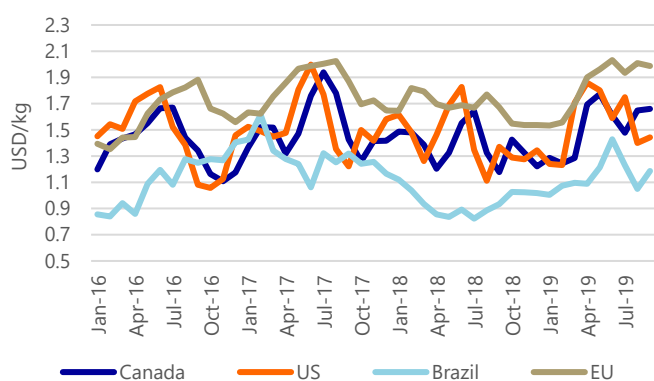
Production	Exports	Hog price	Feeder price	Feed price
Modest growth	Stable	Rising	Decling	Rising
Aug 2019: 201 Δ +5.2%	Aug 2019: 93 Δ 10%	Aug 2019: 1.70 Δ -7.4%	Aug 2019: 0.31 Δ -3.3%	Sept 2019: 0.82 Δ +6.1%
YTD: 1,071 Δ +1.7%	YTD: 833 Δ 0.1%	YTD: 1.99 Δ +7.5%	YTD: 0.45 Δ +34%	YTD: 0.85 Δ -2.2%

Brazil: Exports keep driving positive returns

Production	Exports	Pork price	Hog price	Feed price
Gradual expansion	Rising	Rising	Rising	Rising
Jun 2019: 328.9 Δ +2.5%	Sep 2019: 60.0 Δ +12.8%	Sep 2019: 6.9 Δ +4.7%	Sep 2019: 4.61 Δ +14.7%	Sep 2019: 0.87 Δ +4.1%
Jan-Jun 2019: 992.3 Δ +3.9%	Jan-Sep 2019: 518.0 Δ +12.3%	Jan-Sep 2019: 6.7 Δ +25.7%	Jan-Sep 2019: Δ +33.1%	Jan-Sep 2019: 0.83 Δ -5.9%

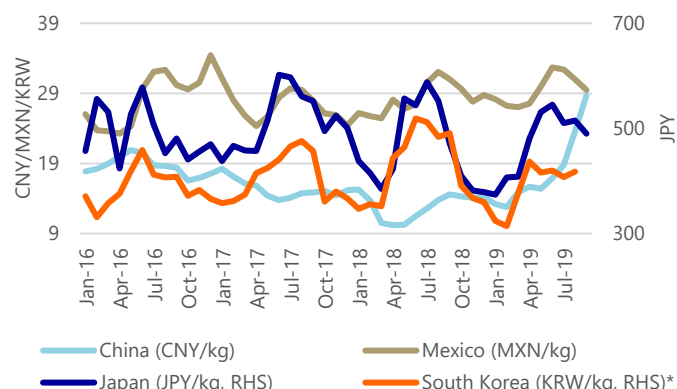
* feed price: 60% corn, 40% soymeal; herd: million head

Figure 4: Pork prices in exporting countries, Jan 2016-Sep 2019



Source: Thomson Reuters Eikon, Macrobond, Rabobank 2019

Figure 5: Pork prices in importing countries, Jan 2016-Jul 2019



*Note: For display purposes, the South Korean won has been divided by 1,000.

Source: Thomson Reuters Eikon, Macrobond, Rabobank 2019

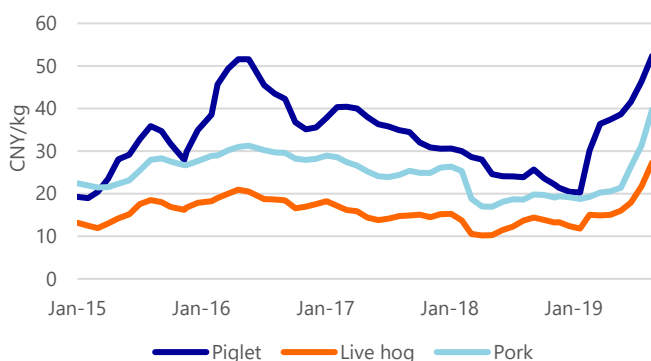
China

Pork prices in China have been breaking records since mid-August. In October, averages reached CNY 40/kg for wholesale pork, CNY 30/kg for live hogs, and CNY 57/kg for piglets. Compared with the same period last year, these represent YOY increases of 130%, 110%, and 100%, respectively. The previous record was seen in 2016 when the pork supply fell over 5% due to environmental policies (see *Figure 6*).

Both the central and local Chinese governments have introduced a series of consumer- and producer-directed programs to curb pork prices, including releasing frozen pork reserves and providing subsidies to low-income consumers. The government is also providing subsidies on equipment purchases and low-cost banking loans, in addition to giving financial support to large farms to boost production. Despite these efforts, pork prices continue to rise, albeit at a slower pace. In response, consumers and other end-users have reduced pork purchases. One of the largest wholesale markets in Beijing reports that pork purchases dropped 25% to 30% after prices soared in mid-August. Foodservice providers and food processors also curbed pork consumption by over 30%, as consumers shifted purchases from supermarkets to wholesale markets, where pork is less expensive.

Year-to-date pork imports are up 40% YOY, with volumes surging since May. Imports in July and August increased by 100% and 76% YOY, respectively. Spain, Germany, Canada, Brazil, and the US remain top suppliers. We expect the pace of imports to continue in Q4 2019 and Q1 2020, as the pork supply gap will likely widen in the coming months. Pork offal imports are picking up from low levels in 1H 2019, with import volumes in the first eight months narrowly exceeding the same period of last year. The proposed removal of punitive tariffs on US pork and approval of new export plants in some countries could help boost imports to China. The latest negotiation between the US and China could boost pork shipments now through Q1 2020.

Figure 6: Live hog, piglet, and pork meat prices in China, Jan 2015-Jan 2019



Source: MARA, Boyar, Rabobank, 2019

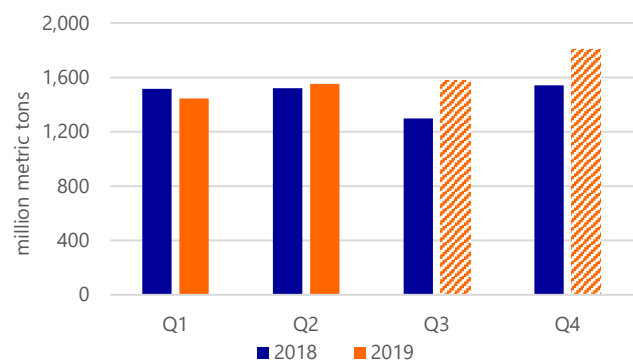
US

Outstanding herd health continues to drive above-average productivity, contributing to strong 5.5% growth in 2H 2019 US pork production. US producers remain cautious on future herd growth, however, as average domestic demand growth and inconsistent trade policy continue to limit future return prospects. The recent withdrawal of ractopamine by producers for two of the nation's largest packers is expected to have a negligible impact on production, but it will qualify more pork for export to China. The USDA's latest Hogs and Pigs inventory report was in-line with our expectations for 3% to 3.5% herd growth, suggesting a more cautious tone moving forward.

Lean hog futures remain elevated on expectations for stronger export demand, particularly to China. Recent progress on trade terms should allow for more rapid growth in exports in Q4 2019 and into 2020. The recently signed trade agreement with Japan should re-establish a level playing field with the nation's second largest export partner, while the soon-to-be-ratified USMCA agreement should ensure access to core markets in Canada and Mexico. Expectations for continued growth in shipments to China also remain supportive to domestic markets, especially as they continue to take split carcasses, which tightens markets for non-traditional export items.

Exports in the latest quarter have been brisk, as demand from several Asian nations surged. For the year, US exports are up 3.3%, driven in large part by a 91% YOY increase in sales to China. The increase in sales to South Korea and the Philippines, who were both recently affected by ASF, rose 36% and 46% YOY, respectively. We expect sales to build into Q4, as supplies remain tight and as importers prepare for New Year's demand. Rabobank expects more favorable trade policy and strong global demand to drive an estimated 14% increase in exports in 2020 (see *Figure 7*).

Figure 7: US quarterly pork exports, 2018-2019



Source: USDA, Rabobank 2019

Europe

EU pork prices remain high, supported by strong export demand, particularly from China (see Figure 8). Average-grade carcass prices are flat, as opposed to the normal seasonal decline. The supply situation in northern Europe has recovered after the hot summer but not sufficiently to place downward pressure on prices. Rabobank expects limited change in prices in Q4 2019, given export strength.

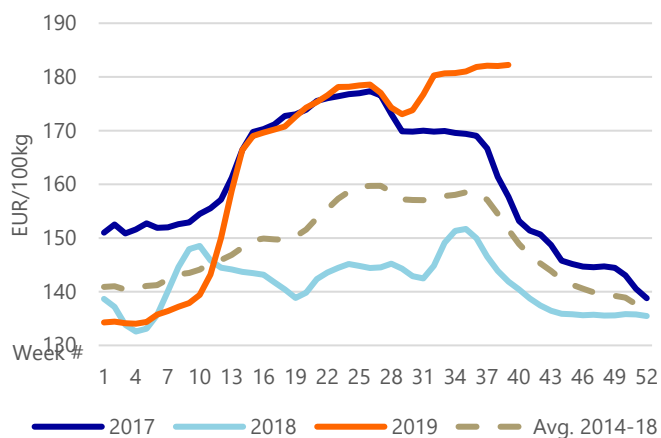
Despite the high prices, Rabobank does not anticipate large-scale investments in production in Europe, with the notable exception of Spain. The ongoing ASF situation in central and eastern Europe and environmental and social restrictions in northern European countries will continue to be the primary constraints on production.

In the most recent herd inventory data, sow herd expansion has been observed in Spain (+1.6% YOY), while declines were reported from eastern European countries affected by ASF. The sow herd in Poland declined by 13% YOY, to 755,000 head, while Romania fell by 10% YOY, to 251,000 head.

Brexit is another area of uncertainty for the European pork industry, as the UK is the largest pork importer in the EU. We maintain our view that any Brexit outcome will have limited impact on the overall European pork market. EU suppliers are best placed to meet UK retailer and foodservice standards. However, potential supply shocks could pressure prices, depending on which Brexit outcome is agreed on and when.

Other political events are overshadowed by the current record prices in European pork markets. For instance, [US tariffs on European pork products will have limited impact in Europe, in Rabobank's view](#). EU exports to the US that are affected by the new tariffs represent just 1% of total pork export volume outside the EU and 2% of export value.

Figure 8: EU weekly carcass price (grade E), 2017-2019



Source: European Commission, Rabobank 2019

Mexico

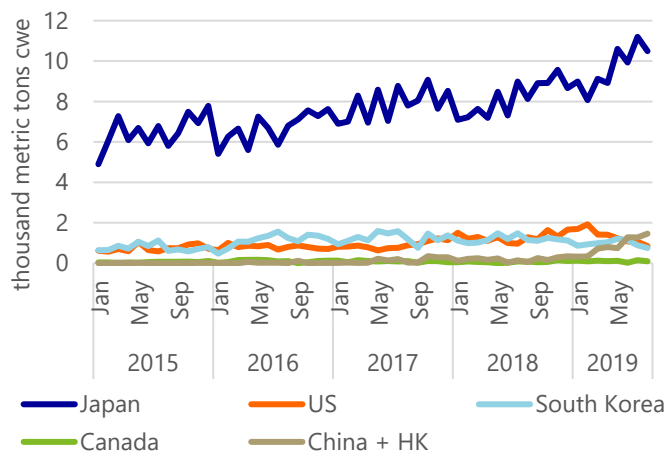
Rising nearly 30% YOY, Mexican pork exports continue to increase and are expected to reach 220,000 metric tons CWE by the end of 2019 (see Figure 9). While traditional export markets remain strong, record exports to China are nearing 7,000 metric tons, or 7% of total Mexican exports YTD. For comparison, exports to China for all of 2018 were only 2,230 metric tons, or 2% of total shipments. Sharp declines in YOY exports to South Korea and the US in August (down 35% and 34%, respectively) reflect currently oversupplied markets. Earlier in the year, US markets were good. Consequently, exports to the US for the full year are up 10% YOY. However, demand in South Korea has been weak all year due to ASF concerns and plentiful supplies. As such, South Korean exports are down 19% YTD.

Domestic pork production in 2019 is expected at 1.384m metric tons (CWE), an increase of 4.8% compared to 2018. Our full year production estimate is revised up from an initial 1.360m metric tons (CWE), as new plants increased capacity and demand for domestic product grew in response to slower imports. Based on our current outlook, we are expecting another sizable increase in 2020.

Pork imports declined by 7% over the first half of the year, compared to the same period in 2018. Imports grew over the summer, however, increasing by 8% from June to August compared to 2018. Cumulative imports YTD are 775,000 metric tons (CWE), just 1.5% behind the same period last year. Import prices from Canada and the US have increased, reaching nearly USD 2.00/kg in the first half of the year.

As countries demand higher volumes of pork and other proteins, due to the effects of ASF, Mexican prices are likely to increase. Import prices from the US in 1H 2019 increased by 2% compared to last year, and in Canada, they were 12% higher vs. a year ago. With increasing competition for imported product from other parts of the world, Mexican markets will remain costly in 2020.

Figure 9: Mexican pork exports, 2015-2019



Source: Secretaría de Economía, Rabobank 2019

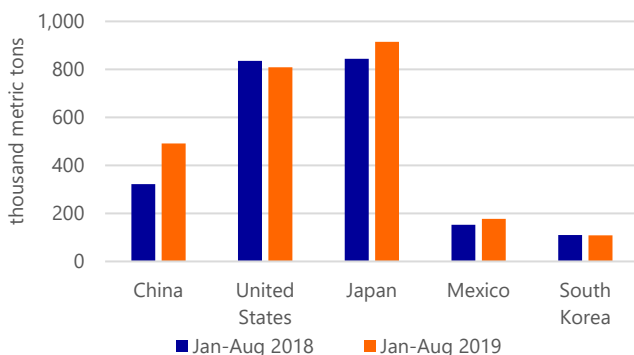
Canada

Canadian hog prices have largely mirrored the volatility of the US market. A recently introduced Quebec program to tie Canadian hog prices to the US market will enforce this relationship. Limited herd growth means the local market is not burdened with excess product, but after exports to China were shut down due to a dispute over improperly documented shipments in June, domestic prices have struggled to recover.

With August pork exports to China approaching zero, other markets have worked to offset the loss. Shipments to several other key markets moved higher in August, with a 15% YOY increase in shipments to Mexico the most significant. Big increases to other Asian markets also helped to offset the loss of China. Notably, the Philippines and Hong Kong recorded YOY increases of 58% and 168%, respectively. For the year, however, Canadian export volumes are flat but are up 9% in value from year-ago levels (see Figure 10). Aside from China, shipments to South Korea and Australia are both down by double digits YOY.

Herd growth remains limited, particularly as a severe PEDv outbreak in the prairies this summer has reduced supply. The latest hog inventories from Statistics Canada were pegged at 14m, with a 1.23m head sow herd. The pig crop of 14.1m was up 1% from year-ago levels but is expected to trend lower. Poor demand for weaned pigs in the US resulting from a lack of barn capacity has reduced returns and dampened producer incentives for growth. Slaughter in Canada is currently running 1% ahead of year-ago levels, and weights have moved up a similar amount. We expect little change in slaughter or weights for 2020.

Figure 10: Canadian pork exports by volume, 2018-2019



Source: Statistics Canada, Rabobank 2019

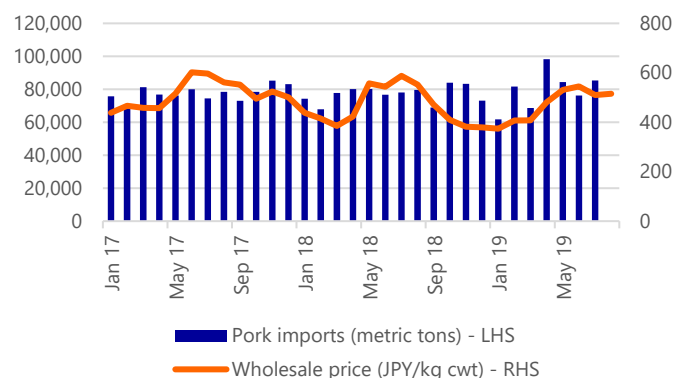
Japan

Following outbreaks in Saitama prefecture (a major pork producing area) on September 13th, Japan started vaccinating all pigs against classical swine fever (CSF) in areas where infection is deemed a threat. The vaccination program covers nine prefectures: Saitama, Toyama, Ishikawa, Fukui, Nagano, Gifu, Aichi, Mie, and Shiga. Vaccinated pigs are to be registered and marked, and their transport is generally limited to slaughterhouses in inoculated areas (except where cross-contamination prevention is undertaken). With this vaccination program, Japan will lose its CSF-free status under World Organization for Animal Health (OIE) guidelines, which will potentially restrict exports (though relatively small).

Japan reportedly has a vaccine stockpile of approximately 1.5m doses (vs. 782,000 pigs within mandated vaccination areas) and has asked pharmaceutical companies to increase production of CSF vaccines, as new cases are expected. Since September 2018, over 132,000 pigs have reportedly been culled in Gifu, Aichi, Mie, Fukui, Saitama, Nagano, Osaka, and Shiga in an effort to control the disease.

Japan's pork imports in the first seven months of the year increased 3.9% YOY, to 556,126 metric tons (see Figure 11). Year-to-date imported volumes from Mexico and Canada saw the biggest YOY increases of 8,034 metric tons (+10.3% YOY) and 6,045 metric tons (+23.4% YOY), respectively. Any potential shortfall in Japanese pork production will shift demand onto other proteins, particularly beef, ahead of the 2020 Olympics and the anticipated boost from tourism. For the first seven months of this year, Japanese beef imports were down by 1% YOY, to 158,695 metric tons.

Figure 11: Japan pork imports vs. wholesale prices, 2017-2019



Source: Alic, Rabobank 2019

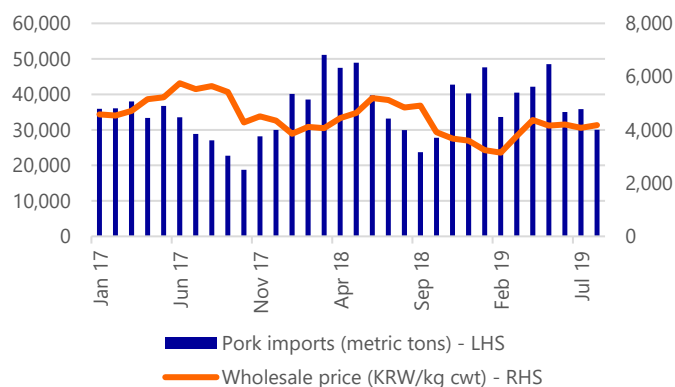
South Korea

Since the first reported outbreak of ASF on September 17th, a total of 14 outbreaks have been confirmed within Gyeonggi province and Incheon Metropolitan City. Culling was reported to have reached over 153,000 pigs, or 1.3% of the national herd of 11.3m. As of Q2 2019, 1.96m pigs in Gyeonggi-do accounted for 18% of the total herd. Together with Chungcheongnam-do, both provinces account for 38% of South Korea's pig herd. The Ministry of Agriculture, Food, and Rural Affairs ordered elimination of all pigs raised and sold in the outbreak areas of Paju and Gimpo, to prevent further spread. The government will purchase finished pigs (older than five months) outside a 3km radius for stockpiling and/or distribution to the market as safe pork. Pigs culled within 3km of an ASF outbreak are not eligible for purchase.

Wholesale pork prices eased to KRW 3,418 to KRW 3,449/kg cwt on October 10, 2019, from an initial jump to KRW 6,395/kg cwt on September 18th following the first reports of the outbreak. Pork demand is seasonally low at the moment. However, we anticipate pork prices to progressively increase ahead of next year's peak demand season (late June to early August), based on South Korea's limited ability to expand.

South Korea's pork imports in the first eight months of the year declined 5% YOY, to 313,424 metric tons (see Figure 12). We expect imports to increase from October 2019, as demand seasonally recovers. US pork imports were the largest, accounting for 40% of South Korea's total imports YTD. Conversely, beef and chicken imports rose by 7% and 14% YOY, respectively, over the same period.

Figure 12: South Korean pork imports vs. wholesale prices, 2017-2019



Source: KMTA, Rabobank 2019

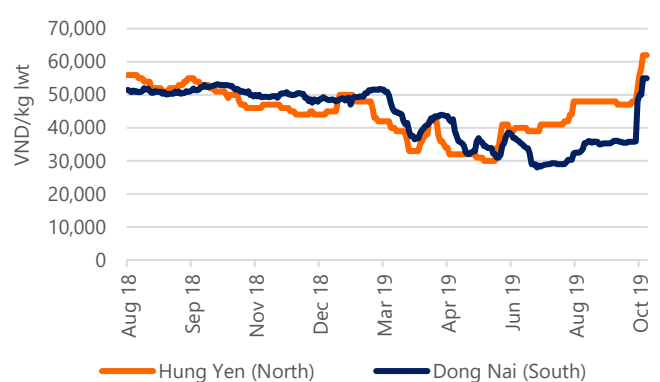
Vietnam

As of early October 2019, approximately 5.47m pigs, or 19% of Vietnam's swine herd, had been lost to ASF. We expect Vietnam's pork production to decline by 0.55m metric tons cwt (-20% YOY) this year. Re-herding efforts by household farms in northern Vietnam to increase supplies for the Têt holiday suffered some setbacks with the re-emergence of ASF in areas previously declared free of outbreaks for more than 30 days. Pork consumption is also projected to decline to 2.47m metric tons cwt this year (-15% YOY), due to supply shortages during the high demand period (Q4 2019). As a result, we have seen prices hit record highs, and we have noted some substitution of other, cheaper proteins.

Live hog prices have rebounded strongly since June, although there remains a small gap between northern and southern Vietnam. Average hog prices in the second week of October had risen to VND 59,000 to VND 62,000/kg live weight in northern Vietnam and to VND 45,000 to VND 55,000/kg live weight in southern Vietnam from the August average of VND 47,000 and VND 35,000, respectively (see Figure 13). Prices in northern Vietnam recovered more quickly, reflecting the impact from earlier ASF outbreaks and, to some extent, a trickle of product to China. While the substitution of chicken may have seen some uptick, prices in early October have nevertheless dropped significantly for both colored birds (to VND 25,000/kg live weight) and broilers (to VND 18,000/kg live weight) – both below production cost – signaling over-production and speculative imports.

We expect pork imports to pick up in Q4 2019, ahead of peak seasonal demand during the Lunar New Year. Vietnam's pork imports in 1H 2019 have primarily originated in the EU (67%), while the US accounted for 8% of total imports.

Figure 13: Vietnamese live hog prices, Aug 2018-Sep 2019



Source: Anova Feed, Rabobank 2019

Brazil

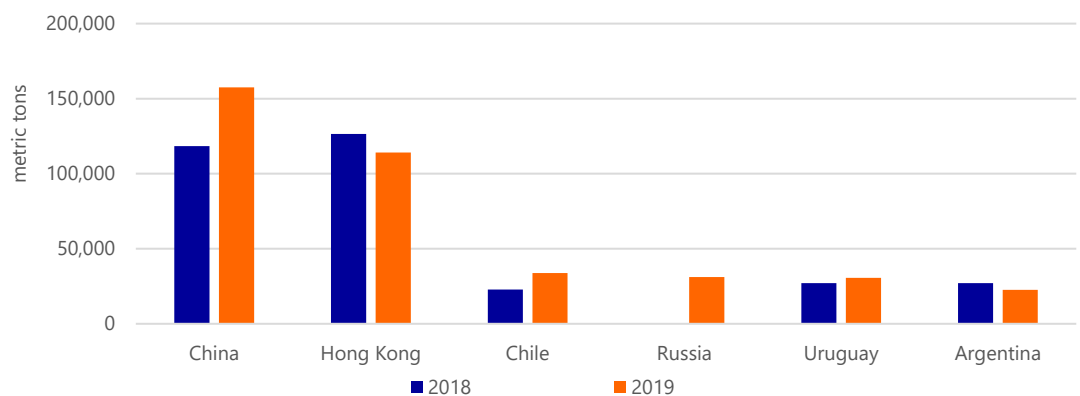
Brazilian pork exports were 12% higher YOY through September, with China surpassing Hong Kong as the leading importer. Brazil continues to be an important supplier to China in light of the ASF crisis, with the value of pork exports up 9% YOY. Shipments were also significantly higher to Chile, Uruguay, and Russia (see Figure 14). The recent approval of six additional pork plants for export to China was supportive of exports in the quarter, and Rabobank expects an additional increase of 17% this year in exports.

Strong export sales, coupled with improved domestic pork demand, have helped support record high prices in the Brazilian market. The last Brazilian Supermarket Association (ABRAS) report, which measures domestic consumption, showed that, in the first seven months of 2019, there was a 3.4% improvement, the strongest increase in the last five years. Industry optimism has been buoyed by the improvement in consumer purchasing power.

Producer margins have strengthened considerably, given the increase in prices and a drop in production costs. Feed costs have fallen 6% YOY on favorable crop results. Conversely, average live hog prices in September in the state of São Paulo closed 33% higher YOY. Current market dynamics support herd growth, although producers remain restrained in their responses.

For the coming months, international demand should continue to boost Brazilian pork prices and support margin recovery.

Figure 14: Brazilian pork exports have been growing, 2018-2019 (YTD)



Source: CEPEA, Rabobank 2019

Imprint

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