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Disease and Trade Issues Are Jointly Changing the Global Market

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Chenjun Pan

Senior Analyst – Animal Protein
+852 2103 2430

For a full list of authors, please see the back page.

Rising disease pressures are challenging the global market. Specifically, African swine fever (ASF) continues to threaten the global pork market, not only by causing a production drop in Asian countries, but also adding uncertainty to trade and production prospects in other parts of the world. While China’s pork prices have started to move higher, production responses in the rest of the world appear cautious. Other factors, including disease management and weather, are hindering production in Europe and Brazil. The resumption of Sino-US trade negotiations is a positive development, implying a chance for China to review tariffs on US pork imports. The Rabobank Five-Nation Hog Price Index increased strongly in 2019, in response to the disease impacts (see Figure 1).

China: Pig herd losses growing

ASF continues to spread in China, with new cases mainly reported in South China. Live hog prices are finally moving higher, indicating tight supply. While fresh meat prices are moving, large inventories of frozen meat continue to pressure prices and weigh on market returns. Pork imports in May increased substantially, with more shipments expected in 2H 2019.

Europe: Production not yet responding to price

ASF in eastern Europe remains pressing, discouraging expansion. Summer heat is slowing production growth, contributing to better market prices. Exports have increased from most member states, mainly driven by stronger demand from China.

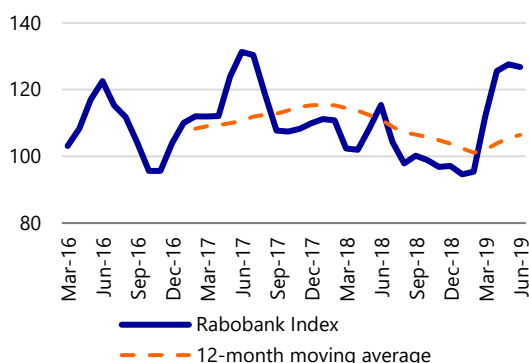
US: Continued production growth in 2H 2019

Pork production in 2H is expected to rise 5.5% YOY, driven by a large breeding herd and improvement in productivity. While pork exports are struggling, due to competitors’ better access to key destinations, the resolution of trade terms with Mexico and Canada should boost exports, and the resumption of trade negotiations with China is a positive. The labor shortage remains a key constraint in 2H 2019.

Brazil: Exports move to new highs

Exports are increasing, driven by Chinese and Russian demand, although pig producers remain skeptical about whether this represents a structural return to growth. Domestic pork prices are rising, as exports are outpacing production growth. If internal consumption picks up in 2H 2019, this will provide further support for prices.

Figure 1: Rabobank Five-Nation Hog Price Index, 2016-2019 (Jan 2015 = 100)



Source: national statistics, Rabobank 2019

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

	July 19	3M	6M	12M
EUR/USD	1.12	1.1	1.12	1.15
USD/JPY	107.7	107	108	108
USD/CAD	1.31	1.33	1.34	1.36
USD/BRL	3.74	3.8	3.7	3.75
USD/MXN	19	19.3	19.7	20.0
USD/CNY	6.88	7.00	7	7.5

Source: Rabobank 2019

Feature Story: ASF Impact Rippling Through the Global Market

Disease pressures are set to be the major change driver in global animal protein in 2019 and 2020 (see Figure 3). In this article, we summarize our current view on ASF impacts and potential implications.

Our current view of African swine fever impacts

Based on the latest developments, we estimate China's current herd loss is 40% YOY, which may expand to over 50% by year-end. Due to the large slaughter in 1H 2019, we expect China's pork production to drop at a slower pace, down 25% for the year. We expect an additional 10% to 15% decline in both herd and pork production in 2020.

ASF is spreading rapidly in Vietnam, Laos, and Cambodia, while new cases were recently detected in North Korea. Neighboring countries are also on high alert. Given its rapid progression, we suspect all Asian pork herds are at risk of ASF within the year. We expect Vietnam's pork production to drop by 15% to 20% YOY in 2019.

Europe remains challenged by ASF outbreaks, but mainly in wild boar populations. Especially in the Baltic states and eastern regions of Poland, ASF has become common among the wild boar populations, while in Romania the domestic pig herd is also affected. Belgium, on the other hand, is cautiously reporting good progress in the management of ASF, based on rigorous surveillance and hunting protocols.

Disease pressures are expected to affect global animal protein production for more than five years. In the case of ASF in China, pork production may take more than five years to recover to prior production levels (see Figure 3). Challenges of restocking include lack of solutions to disease prevention, lack of capital, higher investment

requirements, and other long-term issues, such as limited land access and strict environmental standards.

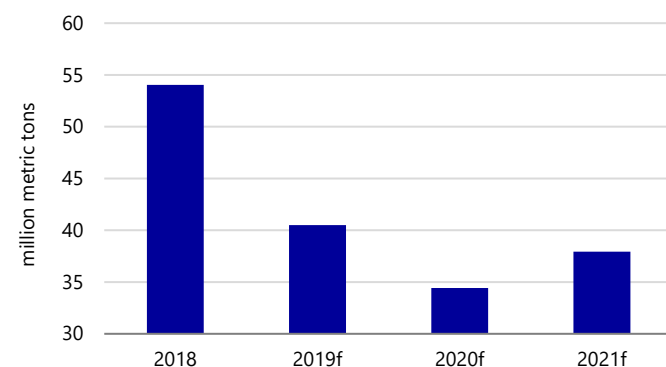
Global trade flow driven by mixed factors

The unprecedented supply loss in China has altered global trade flows and will continue to do so. As the world's largest export destination, China has become even more important for Europeans. In the first five months of 2019, EU exports to China were up 41% YOY. Market speculation has contributed to volatility in international prices. The pressure for further price appreciation will force traditional pork importers, such as Mexico, Japan, and South Korea, to proactively compete for pork supplies, which will result in higher costs long term.

In addition to disease issues, a number of other factors impact trade flows. Changes in market access and trade policies are the major driving forces. Brazilian exports are increasing, driven not only by China but also the return to the Russian market. Conversely, the Philippines has suspended pork imports from Vietnam, Cambodia, Japan, Germany, the Netherlands, France, and Austria, due to concerns over potential ASF contamination. The country reportedly has almost five months of pork stocks, and this stockpile is sufficient to cover a two-month moratorium on imports from all high-risk countries. The other major uncertainty remains the trade relationship between the US and China. We view the chances of China removing some of all tariffs on US pork as rising. If this happens, global trade flows would change again.

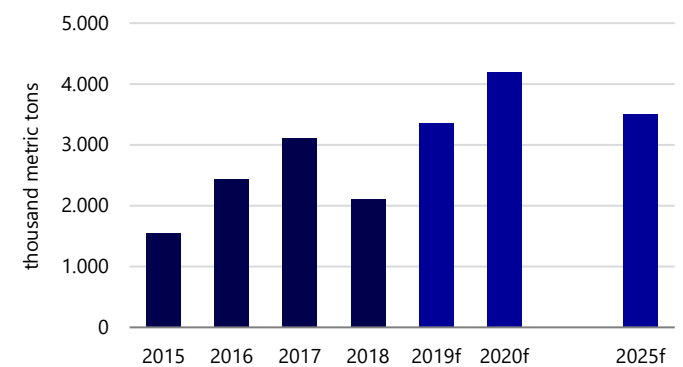
While global trade volumes are rising, pig producers in many exporting countries remain cautious and would rather observe than take concrete steps to expand. As a result, pork production is not yet expanding, with the exception of the US which has seen significant growth, due to previous investments as well as productivity gains. We expect to see a tighter supply and higher price in the global market in 2020.

Figure 3: China's pork production will be impacted for years, 2018-2021f



Source: China Statistics Bureau, Rabobank 2019

Figure 4: China pork imports will move to a higher levels, 2015-2025f



Source: China Customs, Rabobank 2019

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

Europe: Export performance to watch for next quarter

Production	Exports	Class E price	Piglet price	Feed price
Stable	Increasing	Rising	Stabilizing	Increasing
Apr 2019: 1,972 Δ -0.5%	May 2019: 374,3 Δ 0.6%	Jun 2019: 1.77 Δ +2.8%	Dec 2018: 39.5 Δ +10.7%	Dec 2018: 2.63 Δ +0.8%
YTD: 8,122 Δ 0.0%	YTD: 1812,7 Δ 15.5%	YTD: 1.55 Δ +9.2%	YTD: 42.3 Δ +5.6%	YTD: 2.48 Δ +4.7%

China: Prices have started rising – more will come

Herd (May)	Pork meat imports	Hog price	Piglet price	Corn price
To decline	Rising	Rising	Rising	To stabilize
Hogs: 270.5 Δ -25.38%	May: 187 Δ +62.6%	Jul: 17.3 Δ +41%	Jul: 40.7 Δ +69.3%	Jul: 1.91 Δ +7.3%
Sows: 26.5 Δ -26.21%	Jan-May: 658 Δ +19.8%	Jan-Jul: 14.5 Δ +21.2%	Jan-Jul: 31.4 Δ +15.8%	Jan-Jul: 1.86 Δ +2.3%

US: Productivity gains weigh on market

Production	Exports	Hog price	Sow price	Feed price
Rising	Expected to increase	Rising	Rising	Rising
May 2019: 1,002 Δ +2.1%	May 2019: 232 Δ -0.8%	Jun 2019: 1.26 Δ 0%	Jun 2019: 1.06 Δ 18.4%	Jun 2019: 0.67 Δ 9.9%
YTD: 5,115 Δ +3.4%	YTD: 1,125 Δ -3.8%	YTD: 1.09 Δ 1.8%	YTD: 0.92 Δ 0.5%	YTD: 0.59 Δ -6.9%

Canada: Export disruption pressures prices

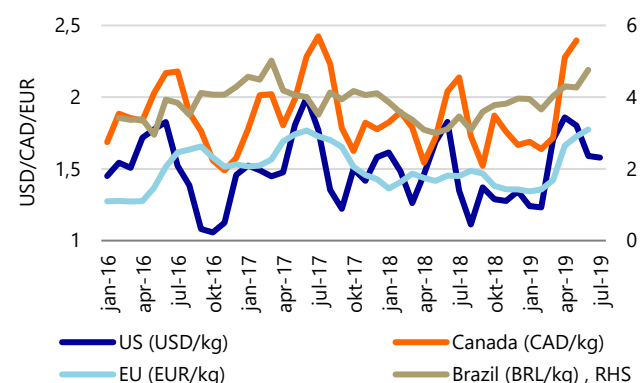
Production	Exports	Hog price	Feeder price	Feed price
Rising	Expected to increase	Expected to increase	Rising	Rising
Jun 2019: 167 Δ 5.2%	May 2019: 115 Δ -1.6%	Jul 2019: 1.96 Δ -11.2%	Jul 2019: 0.32 Δ 80%	Jun 2019: 0.87 Δ 9.8%
YTD: 1,071 Δ 1.7%	YTD: 548 Δ 2.5%	YTD: 2.01 Δ 9.0%	YTD: 0.49 Δ 17.7%	YTD: 0.77 Δ -6.9%

Brazil: Pork exports expected to increase during 2019

Production	Exports	Pork price	Hog price	Feed price
Rising	Increase expected	Increasing	Rising	Stable
Jun 2019: 328.9 Δ +2.5%	Jun 2019: 62.3 Δ -5.9%	Jun 2019: 7.8 Δ +14.3%	Jun 2019: 5.15 Δ +15.2%	Jun 2019: 0.83 Δ +6.4%
YTD 2019: 992.3 Δ +3.9%	YTD 2019: 343.3 Δ +24.6%	YTD 2019: 6.5 Δ +20.4%	YTD 2019: 4.28 Δ +29.7%	YTD 2019: 0.81 Δ -4.7%

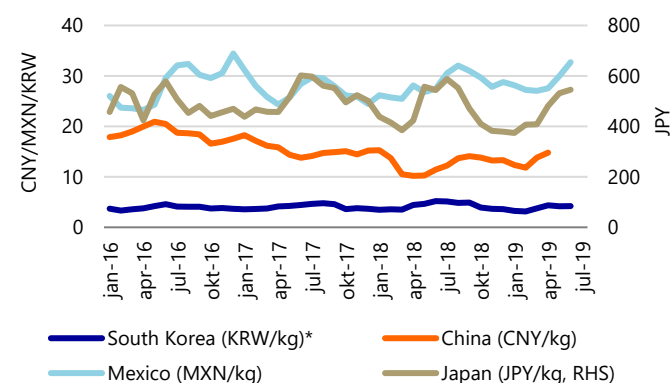
* feed price: 60% corn, 40% soymeal; herd: million head

Figure 5: Pork prices in exporting countries, Jan 2016-Jun 2019



Source: Thomson Reuters Eikon, Macrobond, Porcimex, ALIC, Rabobank 2019

Figure 6: Pork prices in importing countries, Jan 2016-Jun 2019



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

China

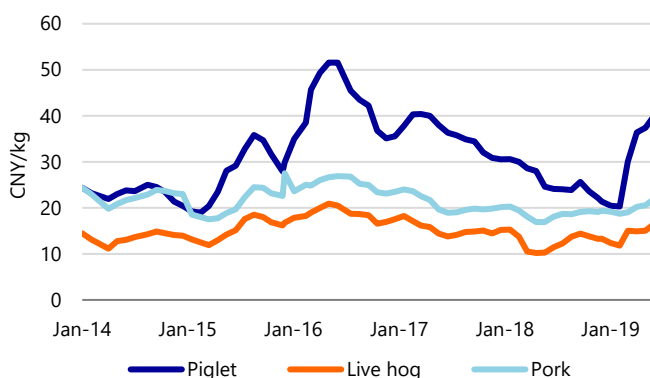
There are some signs that pork prices are finally starting to move up (see Figure 7). Since mid-June, live hog prices moved higher, averaging above CNY 17/kg across the country. This is 15% higher than the previous month, and 40% higher than last year. In some regions, prices hit CNY 20/kg, close to the record high set in 2016. The price increase reflects not only the supply shortage, but also producers holding back pigs to take advantage of anticipated price increases later in the year. Pork meat prices have experienced even stronger growth, rising to CNY 25/kg in early July, up 20% MOM. Piglet prices have steadily increased for months, to CNY 40/kg early July, double the price of January 2019.

New cases of ASF have been continuously reported, with the latest outbreaks concentrated in the south and southwest. China Agriculture and Rural Affairs data showed the sow inventory dropped 26.7% YOY by the end of June, and hog inventory dropped 25.8%. Herd losses in specific regions are believed to be much worse, down by 40% to 60% since last August when the first case was reported. We estimate the herd loss across the country is over 40% as of now. For the whole year, the herd loss could exceed 50% on a year-on-year basis. Driven by the prospects of strong prices in 2020, farmers and companies have started restocking in small scale in some regions, but very few of these efforts have been successful. However, we expect more companies will accelerate restocking by holding back gilts for reproduction.

Due to large liquidation in previous months, pork meat output in 1H 2019 has not dropped at the same pace as the herd loss. We may, though, see a big drop in meat production in 2H. Overall, pork production in 2019 will likely drop by 25% YOY, and drop further by 10% to 15% in 2020.

Pork meat imports in May are sharply higher, up 62% YOY. This makes the first five months' imports up 20% YOY, despite the sluggish imports earlier in the year. Almost all traditional exporting countries have increased shipments to China, except the US. Pork offal imports increased 29% in May YOY, while the total imports in the first five months are still lower, up by 8% over the same period last year. With the new action taken by the US in terms of tariff relief on 110 Chinese goods, we expect China's government could take similar steps towards tariff relief on agricultural products, including pork.

Figure 7: Pork prices are moving up quickly, Jan 2014-Jun 2019



Source: Boyar, Rabobank 2019

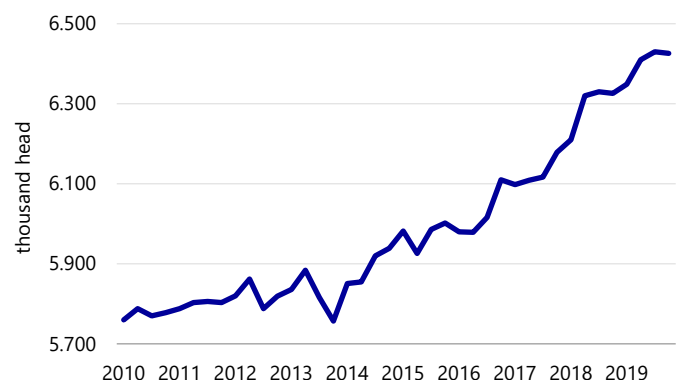
US

Production gains due to favorable growing weather and better herd health contributed to a record breeding herd in the USDA's June *Hogs & Pigs* report (see Figure 8). Not only are weights higher (+2% YOY), but pigs saved per litter are also a record 3.5% higher. Weights will moderate with summer heat, but we are raising our estimate of 2H 2019 hog production to 5.3% to reflect improved productivity. Much like the gains we have seen after tightening up biosecurity in previous health challenges, the latest improvement in herd health appears sustainable and will compound the oversupply of pork expected to weigh on the market this fall. A record slaughter this fall will, in our view, challenge not only available shackles space, but also packers' ability to find sufficient labor to absorb the increase. An effort by packers to convert a portion of their volume to carcass exports could alleviate some of the labor constraints.

Export volumes remain anaemic, in part tied to the ongoing trade dispute with China, but also due to rising competition for core markets in Japan (down 4.5% YOY) and Mexico (down 23% YOY). Pork exports to China have jumped to near record levels on a weekly basis, but remain well below their potential given an ongoing 62% tariff, which makes US pork uncompetitive. We are hopeful that at least some of the tariffs could be lifted in 2H 2019, which would clear the way for larger exports. In the absence of a free trade agreement with Japan, the US pork industry continues to lose market share to the EU and Canada. Japan remains at the top of US lawmakers' trade agenda, and we are hopeful an agreement can be reached by year-end. Exports to Mexico remain a disappointment. Shipments have picked up since lifting the restrictive tariffs on US imports but are well below historic levels, as demand remains lackluster and competition stiff.

A lack of retail pork features in the early summer was a direct reflection of availability concerns, while challenging weather hurt grilling demand. Attractive pork pricing has helped pork buy back some of that ad activity, but retail interest remains inconsistent. We are watching with great interest to see whether new pork items, like Burger King's introduction of a pulled pork sandwich, can move the needle on foodservice demand.

Figure 8: US breeding herd, 2010-2019



Source: USDA, Rabobank 2019

Europe

Summer is having its full effect on European pork markets, with prices reaching seasonal highs. At the same time, export performance has been relatively positive, given the continent's own ASF situation.

Record temperatures in western Europe have led to lower pork production in recent weeks. Not only did the heat cause hogs to grow more slowly, but consumers were reluctant to purchase pork, according to industry sources.

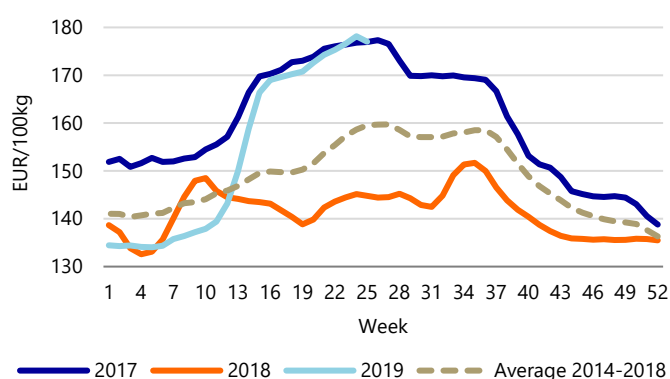
Local feed commodity prices have been relatively unaffected by the heat wave in June. France, the largest wheat producer of the EU, is reporting an 8.5% YOY increase in soft wheat production for this year.

Carcass prices have been moving sideways in recent weeks, after a steady rise through Q2 2019 (see Figure 9). At the same time, piglet prices have now started to trend downwards but remain well above the five-year average. According to industry sources, import demand from China has been slow in recent weeks but is expected to pick-up again over the next quarter. This should maintain upward pressure on prices for most of the next quarter and partially nullify the price declines usually seen in September.

Despite strong prices, most European producers are not expanding their herds. Recent figures published by German authorities show a 2.9% YOY decline of total sows in the May 2019 livestock census. A similar trend was reported in Denmark, where the sow herd declined by 4.7% YOY in Q2 2019. Together, these countries account for 36% of the total EU sow herd.

The ongoing ASF risks in Europe are likely the cause of this producer pessimism in northern Europe. The outbreak situation in eastern member states remains pressing. Areas already affected are reporting new cases, including in domestic herds. Developments in Belgium, on the other hand, are more positive. For the first time since September 2019, a week has passed without a new case of affected wild boars being reported.

Figure 9: EU weekly carcass price (grade E), 2017-2019



Source: Eurostat, Rabobank 2019

Mexico

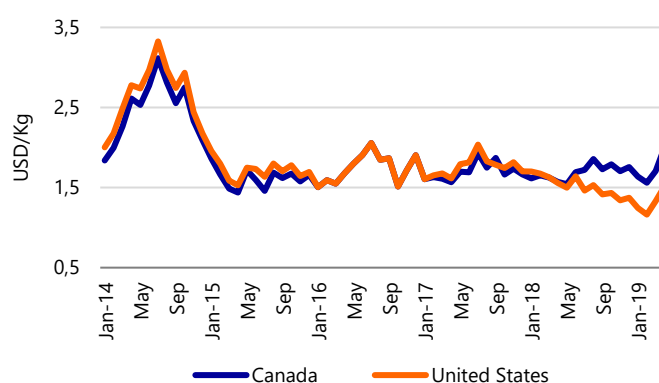
While imports from the US have been gaining momentum since the tariffs were removed, they continue to be well below year-ago levels. In the meantime, Canadian imports started stronger this year, compared to the same period last year. However, despite a strong start of the year, the pace of imports is slowly beginning to fall back to last year's levels. Overall, import volumes (Jan-Apr) are 5% lower in 2019, compared to 2018. Two factors are affecting imports for Mexico. First, import prices have increased since April, making it more expensive for Mexico to import. Second, ASF is beginning to affect international prices (see Figure 10).

In the meantime exports are increasing at a record pace, with Japan seeing the largest growth. Mexico has good access under the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), as the gate price system has been lowered for CPTPP members. In addition, China continues to import more Mexican pork, given the ASF situation. Mexico's export volumes to China from January to April reached the same amount as total exports (Jan-Dec) in 2018. Total exports from Mexico are up 22% YOY, with exports to Japan (20% YOY) and China (203% YOY) expected to increase further in the coming months.

While exports have been performing well, with added capacity in Mexico to export to Asian markets, production might face some challenges in the coming months. Planting delays and an expected lower yield in the US due to bad weather have pressured corn prices upward, and prices are expected to be more volatile as lower production has been forecast. Corn imports are essential for Mexico to meet its demand for feeder hogs and other animal proteins. As a result, producer margins will be under pressure as operating costs increase over the coming months.

Consumer confidence is beginning to show signs of weakness, since its peak in February 2019, and a recession could be possible, as growth expectations continue to decline. While we continue to see consumption grow by 4% in 2019, there is potential for lower growth if consumer confidence softens.

Figure 10: Mexican import prices, 2014-2018



Source: Secretaría de Economía, Rabobank 2019

Canada

Hog slaughter remains in-line with year-ago levels (0.3% YOY), as earlier health challenges (Porcine Epidemic Diarrhea virus, in Alberta) are being offset by improved herd health in other provinces. Like their US peers, Canadian pork producers are tightening biosecurity and beginning to see productivity gains as a result. Assuming these efforts result in improved liveability, 2H 2019 and 2020 inventories could move above our estimates. Hog weights for 2019 are up modestly and consistent with our outlook for 1% YOY pork production increases. We continue to expect limited growth in the sow herd in 2019 (less than 1%), given ongoing labor issues, but note that dramatically improved profitability (above CAD 20/head) could force producers to reconsider growth plans in 2020.

Canadian pork exports posted a significant shift during the quarter, with a 72% YOY gain in volumes to China and 23% growth in exports to the EU (see Figure 11). At the same time, exports to other markets were down double-digits in the latest month. Exports to the US, which had been Canada's largest market historically, were down 23% in May and are now only half of Chinese volumes. From a value perspective, Canadian exports were up 142% YOY, but are only modestly larger than total shipments to the US. In total, Canadian exports to China accounted for 36% of total pork volumes, and 38% of total pork values. As important as China had become, Canada's pork exports to China came to an abrupt halt in late June, as fraudulent export certificates were discovered in Canadian pork. A pork shipment containing trace amounts of ractopamine was also discovered earlier in the quarter, further complicating China-Canada pork trade.

The impact of export disruption with China has been severe, as excess pork is now weighing on pork values and, therefore, hog prices. Canadian hog producers remain profitable, but until export markets are reopened, returns

will remain under pressure. We continue to believe the ongoing political tensions between Canada and China are a contributor to the ban, and we do not expect substantial change until those issues are resolved. As a signatory to the CPTPP, Canada is benefiting from even lower tariffs in Japan, beginning in April, and will continue to gain share in this market.

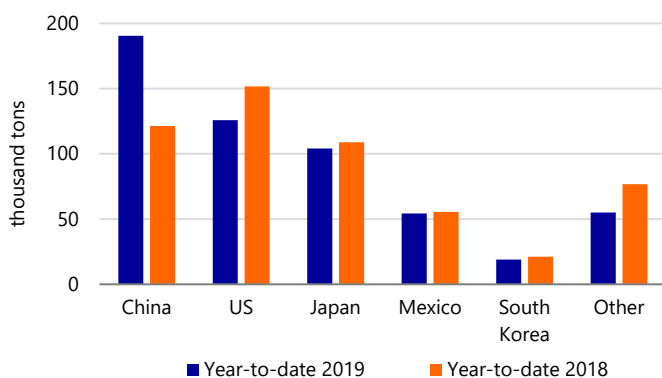
Japan

Japan's pork imports in the first five months of the year increased 3.8% YOY, to 394,575 metric tons (see Figure 12), as tariffs on pork have been reduced by 2.2% since CPTPP came into force on December 30, 2018. Over the same period, imported volumes from Mexico and Denmark saw the biggest YOY increases of 4,494 metric tons (+12.7% YOY) and 4,295 metric tons (+9.6% YOY), respectively.

We anticipate rising global pork prices to outweigh the benefits of reduced tariffs from free trade agreements, as global pork supply shifts to cover China's shortfall. Due in part to the fallout from ASF outbreaks in China, imported chicken prices in Japan have also increased 7% YOY in May, reflecting a shift in Chinese protein consumption and its consequences on poultry import prices.

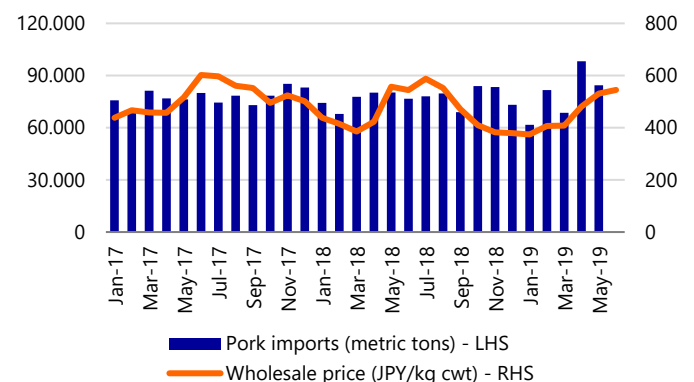
To date 13,600 farmed pigs have been lost due to 74 Classical swine fever (CSF) outbreaks across the Gifu, Aichi, and Mie prefectures. Notwithstanding the insignificant impact (pork production is expected to stay flat this year), imports are anticipated to increase 2% YOY in 2019, driven by expected higher consumption.

Figure 11: Canadian pork exports, 2017-2018



Source: Statistics Canada, Rabobank 2019

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



Source: Alic, Rabobank 2019

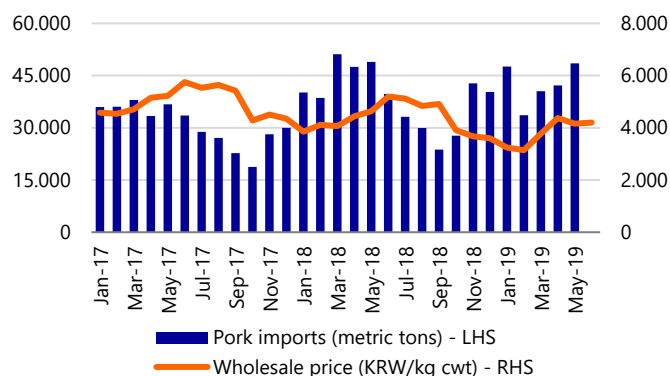
South Korea

Pork consumption is expected to reach 2.08 million metric tons cwt (+4% YOY) this year – much of it coming from 2% YOY growth in local production to 1.36 million metric tons cwt. Pork prices, however, are expected to remain subdued. ASF outbreaks in neighboring countries have had a negative impact on consumption, causing pork prices to seasonally decline further from 2018 levels. More downside is expected in 2H 2019 as increased domestic hog output comes to the market.

South Korea's pork imports in the first five months of the year declined 6.1% YOY to 212,418 metric tons (see Figure 13), as local inventories were on the rise. Pork imports from the US took the lion's share with a cumulative share of 42.7%. South Korea had temporarily suspended German pork imports from July 1 after a shipment of pork to the Philippines was found mixed with pork from Poland. Conversely, beef and chicken imports rose by 12.5% and 6.5%, respectively, over the same period.

Government monitoring for ASF has picked up in June due to concerns over the spread through wild boars from North Korea and processed pork brought in from countries with ASF outbreaks. This includes spot inspection of pork imported from Germany, quarantine, and suspension of the release of frozen German pork stored in cold storage. The government is also in the process of undertaking testing of 4,900 swine farms nationwide. To date, test results from household farms, intensive farms, and other farms have come in negative.

Figure 13: South Korean pork imports vs. wholesale price, 2017-2019



Source: KMTA, Rabobank 2019

Vietnam

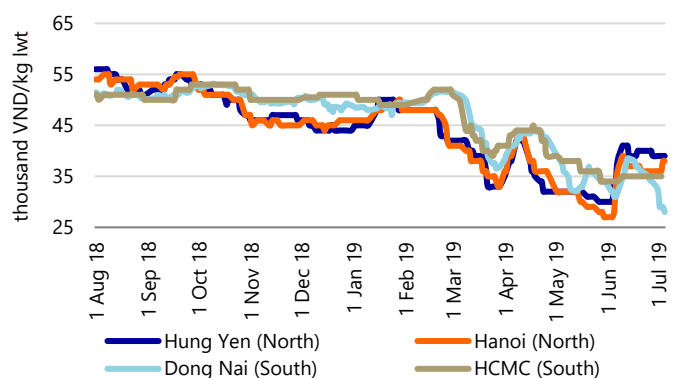
Live hog prices have strengthened since early June, although prices in Dong Nai dropped again after 20,000 pigs in a state-owned breeding farm in Phu Son were infected with ASF and had to be culled on June 24 (see Figure 14). Higher prices reflect reduced live hog production in provinces that have seen widespread outbreaks, as affected farms are not re-herding. Pig transport restrictions also remain in place, which creates oversupply in some areas and undersupply in many others.

Encouraged by higher prices, some household farms are re-herding (taking risks based on government support), while others temporarily switch to rearing water fowls and chicken. Based on current prices, fattening farm margins are generally positive in the North but negative in the South.

The government recently changed its support policy for culled pigs. Whereas previously the support price for household farms was VND 38,000/kg lwt, it has now been lowered to VND 25,000/kg lwt for hogs and piglets and VND 30,000/kg lwt for sows and boars. For small- and medium-sized enterprises (as stipulated in law no. 04/2017/QH14), the support price is VND 8,000/kg lwt for hogs and piglets and VND 10,000/kg lwt for sows and boars. Some illegal slaughterhouses (i.e. stricter documentation, as per guideline 3708/HD-BNN-TY issued May 28) have also been closed.

Year to date, pigs lost have reached close to 3 million, accounting for about 11% of total herd, spread over 62 provinces (out of 63). At the current pace, we estimate that total pigs lost to ASF by year-end may reach between 5.5 million (base case) and 6.8 million (high case). Based on this range, we forecast Vietnam's 2019 hog production to decline by 15% to 19% YOY. Domestic pork shortage would be partly relieved by increased pork imports and substitution by other proteins. However, higher anticipated prices would likely result in at least a 12% reduction in Vietnam's per capita pork consumption this year.

Figure 14: Vietnamese pork prices, 2018-2019



Source: Anova Feed, Rabobank 2019

Brazil

Brazilian pork exports accelerated in 1H 2019, with a 25% rise in export volume, driven by Chinese and Russian demand. Brazilian pork exports to China rose 29% in the first semester, and exports to Russia are returning to their pre-embargo levels. This increased demand has boosted domestic prices, which are 21% higher in 1H 2019 than they were in 1H 2018 (see Figure 15).

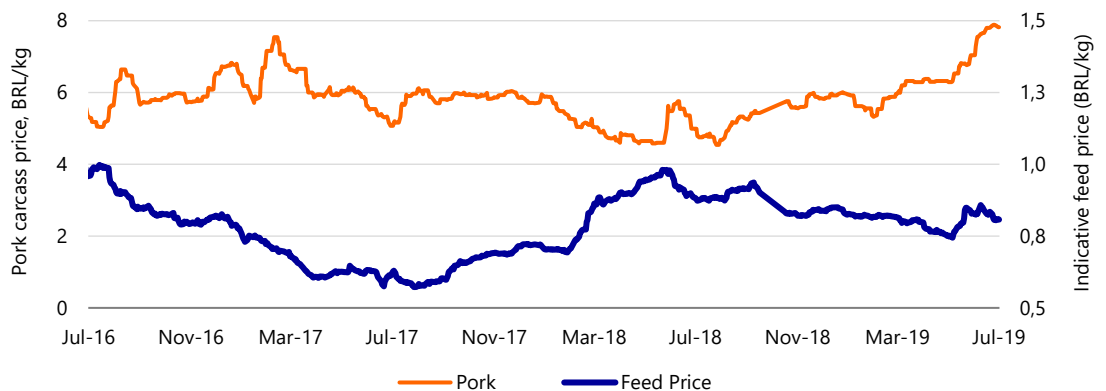
On the other hand, Brazilian pork production costs have trended sideways, despite a sharp uptick in international corn prices. This is because ideal planting and growing conditions have resulted in the Brazilian 'safrinha' corn crop reaching record levels, reducing feed costs. This, combined with the sharp increase in pig prices, has significantly improved producers' margins.

Improved margins have led to a 3.5% YOY increase in pork production for the first quarter of the year. However, not all farmers are increasing their production, and many independent pig producers are still recovering from last year's low pork prices, which were largely caused by the Russian embargo.

For the coming months, further gains in Brazilian pork exports are expected to be limited. Independent farmers are still very skeptical about whether the current situation really represents a structural increase in demand and access to China's market. In addition, many pig producers do not have spare capital to invest in order to boost pork output, and this may limit the production response to current high pork prices.

Meanwhile, there are hopes that domestic consumption may improve in the coming months, given the progress of structural economic reforms in Brazil. Increased consumer spending would stimulate internal meat consumption, helping to sustain high local pork prices during 2H 2019.

Figure 15: Brazilian feed and pork prices, 2010-2018



Source: CEPEA, Rabobank 2019

Imprint

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far.rabobank.com

Justin Sherrard	Global Strategist	justin.sherrard@rabobank.com
Chenjun Pan	China	chenjun.pan@rabobank.com
Matz Beuchel	Europe	matz.beuchel@rabobank.com
Andrick Payen	Mexico	andrick.payen@rabobank.com
Ben Santoso	Southeast Asia	ben.santoso@rabobank.com
Christine McCracken	North America	christine.mccracken@rabobank.com
Fernando Gomes	Brazil	fernando.gomes@rabobank.com
Angus Gidley-Baird	Australia	angus.gidley-baird@rabobank.com
Beyhan de Jong	Europe	beyhan.de.jong@rabobank.com
Blake Holgate	New Zealand	blake.holgate@rabobank.com
Don Close	North America	don.close@rabobank.com
Gorjan Nikolik	Europe	gorjan.nikolik@rabobank.com
Nan-Dirk Mulder	Europe	nan-dirk.mulder@rabobank.com

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