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More Uncertainties Ahead

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Covid-19 brings many uncertainties to the global pork market. With various disruptions to the supply chain, we have revised down pork production for 2020 in major producing countries. Labor shortages, operational suspensions, soft demand, and channel shifting will force industry players to increase automation, adopt digitalization, improve plant working conditions, streamline processing, and integrate along the supply chain to optimize operations and secure margins. Global trading is challenged by more uncertainties, due to rising geopolitical tensions, unsettled regional negotiations, and Covid-19 situations. The Rabobank Five-Nation Hog Price Index has dropped in 2020 in response to these uncertainties (see Figure 1).

China: Imports slowing down

The new wave of Covid-19 cases in Beijing in June triggered strict inspections of global sourcing and bans on a number of exporters. Domestic pork prices have soared, driven by low hog supply following liquidation in May. Prices will likely stay at high levels, given the expectation of slowing imports and rising ASF outbreaks due to heavy rain and flooding. Recovering consumption will impose additional upward pressure on market prices.

Europe: Lower production outlook

With a decline of 1.3% in the first four months, EU-27+UK pork production is expected to decline 0.5% in 2020. Despite the disruptions by Covid-19, exports have been strong. However, uncertainties are rising, with some temporary suspensions in trade with China, which has taken up over 60% of total exports from EU-27+UK.

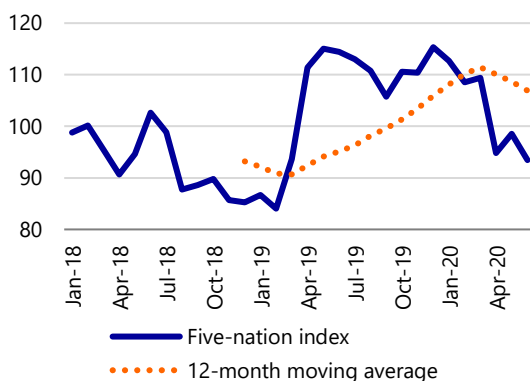
US: High hog inventories pressure prices

US live hog prices dropped to multi-year lows in early July, as limited shackles space and ample inventories continue to weigh on the market. The deterioration in hog values suggests a further decline in sow herd will be necessary. Labor shortages continue to limit carcass conversion and packer margins. Despite domestic issues, exports remain robust, with the largest growth coming from shipments to China. Exports for the year are expected to be up 18% YOY.

Brazil: Exports in 1H were 37% higher

Even with the risk of a second wave of Covid-19 impacting Chinese demand, Brazil's pork exports in Q2 registered even greater volumes. This is in contrast to soft local demand, which is dragging down production. The pace of the price rise in corn futures in Q4 in recent weeks will squeeze margins, making production even more challenging in the coming months.

Figure 1: Rabobank Five-Nation Hog Price Index, 2018-2020 (Jan 2015 = 100)



Source: CME Group, CANSIM, CEPEA, EU Commission, Macrobond, Rabobank 2020

Figure 2: Rabobank currency forecasts, Jul 2020-Jul 2021

	Jul 10	3M	6M	12M
EUR/USD	1.13	1.13	1.09	1.14
USD/JPY	106.7	106.0	105.0	111.0
USD/CAD	1.36	1.42	1.42	1.42
USD/BRL	5.34	5.55	5.45	5.20
USD/MXN	22.6	24.5	24.5	25.0
USD/CNY	7.00	7.07	7.30	7.60

Source: Rabobank 2020

Feature Story: Uncertainties Surround Global Pork Markets

The impact of the Covid-19 pandemic on global pork supply chains is expected to be long-lasting. Challenges in production, processing, trading, and consumption could jointly reshape the industry, with changes expected in labor access, rising automation, product mix, and distribution channels in the coming years. In the short term, rising uncertainties will weigh on the outlook for global pork supply, generating volatile global trading conditions.

Covid-19 Is Reshaping Global Pork Supply Chains

In the US, slaughter levels are nearly back to historical norms, yet deboning and further processing operations remain challenged by labor availability. Poor carcass conversion and additional operating expenses will limit 2H 2020 processing returns. US hog production will surpass available shackle space, given anticipated labor constraints, forcing sizable losses for producers and ultimately resulting in additional herd contraction, financial strain, and further integration with the packing sector.

Plants are likely to accelerate programs to automate and digitize where possible. Packers will invest to ensure the safety of their workers and limit potential exposure in the event of another outbreak. Packers will also make changes to adapt their products to retail, given the outlook for slower foodservice sales and a shift to online distribution.

In Europe, Covid-19-related disruptions intensified during Q2 2020, especially at the slaughter and processing stage. A number of plants were shut down in the Netherlands, Germany, Ireland, and the UK due to virus outbreaks among plant workers. Although overall slaughter levels were temporarily affected in most of these countries, the pig supply could, at least partially, be diverted to other plants, keeping the situation manageable at the farm level. Virus outbreaks have been associated with the working and living conditions of employees, many of whom are migrants. We expect increasing pressure on processing plants and new investments to follow, creating safer working environments. In Germany, developments point toward stronger legislation to improve working and living conditions. Such changes are expected to increase processing costs over time. While we anticipate ongoing constraints on slaughter capacity and some slowing of

production in Q3, we expect some fundamental changes in labor issues in the longer term.

In China, Covid-19 has had more impact on consumption than on supply, although the changes in consumption will lead to some gradual changes in supply. Due to the strict and swift measures taken to contain the disease, pork production and slaughtering have generally been resilient, although there was some delay in herd restocking. The challenges linked to logistics disruptions during lockdown may lead to strategic responses by some players. This could include redesigning farms, distribution, and the relationship with off-takers and, for some farming companies, investing in slaughtering and processing in order to optimize their supply chain. The decline in animal protein consumption, mainly driven by foodservice closures and high pork prices, has squeezed processing margins, which may result in processors taking the strategic steps of going upstream to secure hog supply and going further downstream to develop their own distribution networks and earn higher margins. The shift of distribution from mainly offline to a rapidly growing share of online channels catalyzed by Covid-19 could facilitate such strategic moves as processors establish a shorter and more efficient supply chain to adapt to market changes.

Uncertainties in Global Trade

Trading has encountered great challenges due to labor shortages at ports, reduced ship movements, rising freight costs, and temporary closures of some processing plants. In 2H 2020, we expect ongoing uncertainties with global trading, as Covid-19 is not yet under control in some major exporting countries, and the developments of major geopolitical issues are not clear, such as the US-China relationship and the post-Brexit trade regime. China's dominance in global pork imports means that any change in China's import policy would add further uncertainty to global trading.

In Europe, following increased Covid-19-related activity, a number of meat plants (4 in the Netherlands, 3 in Germany, 1 in the UK, 1 in Italy) suspended pork exports to China. Further suspensions in the coming period are possible if any other plants have Covid-19 outbreaks. It is uncertain how rapidly the banned plants will be able to resume exports. China accounted for 63% of EU+UK exports in the first four months of 2020, making the region vulnerable to any further suspensions.

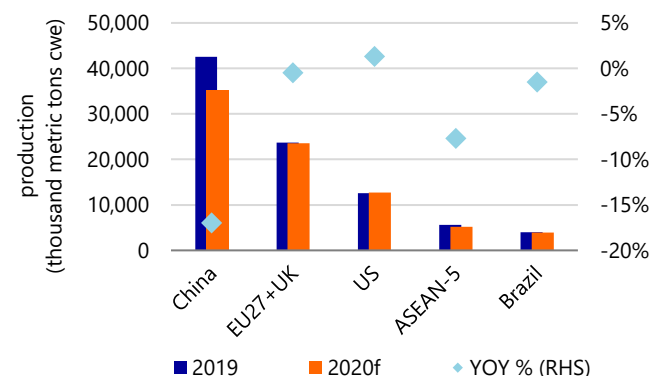
Although the Covid-19 pandemic caused delays in trade talks between the EU and the UK, the parties have agreed they will not extend beyond 2020. Negotiations are to be accelerated in July in order to reach an agreement that can be ratified by the end of 2020. Given the lack of tangible outcomes so far, uncertainty still persists around the demand for and pricing of pork from the EU-27.

On the other side of the globe, China made progress on meeting its agricultural obligations under the China-US phase-one trade agreement, yet animal protein remains a relatively small part of the overall relationship. The US is now the second largest pork supplier to China, following Spain, contributing 16% of China's total imports, or 354,000 metric tons YTD, including muscle meat and variety meat. China became the largest export market for US pork products, making up 41% of total international sales in May. While political tensions remain high between the two countries, China is now a critical market for US pork products. Since the new wave of Covid-19 cases were confirmed in Beijing in June, China has adopted stricter inspection of imported foods and banned a number of exporters, including some in the US.

Global Pork Production Projection for 2020

Covid-19-related disruptions of the supply chain, especially at slaughter and processing plants in the US, Brazil, and the EU, have affected the production outlook for 2020 (see Figure 3). This adds pressure to the global pork supply chain, which is already affected by African swine fever-related production decreases in China and Southeast Asia. In our view, the ASF situation in China, Southeast Asia, and Europe is the most important driver of the production outlook. While global pork supply for

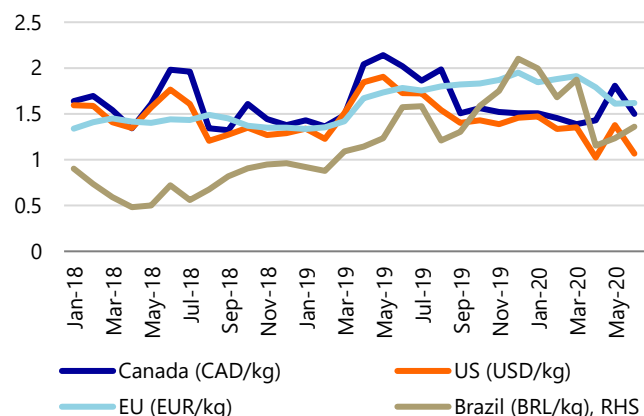
Figure 3: Pork production projection, 2020f



Source: national statistics, USDA, Rabobank 2020

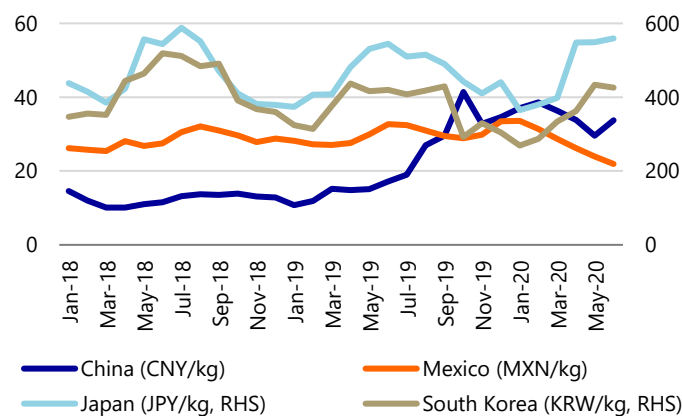
2020 was expected to decline by 5%, compared to 2019, at the beginning of this year, Rabobank now anticipates a decline of 8%. The biggest YOY declines are expected in China (-17%), the Philippines (-9%), and Vietnam (-8% to -11%), but other major producing countries show a similar tendency. Pork production is also expected to decline in Brazil (-1.5%) and the EU (-0.5%), compared to 2019. We expect an increase in the US (1.3%), despite the disruptions.

Figure 4: Pork prices in exporting countries, Jan 2018-Jun 2020



Source: Thomson Reuters Eikon, Macrobond, Porcimex, ALIC, Rabobank 2020

Figure 5: Pork prices in importing countries, Jan 2016-Jun 2020



*Note: For display purposes, the South Korean won has been divided by 1,000. Source: Thomson Reuters Eikon, Macrobond, Porcimex, ALIC, Rabobank 2020

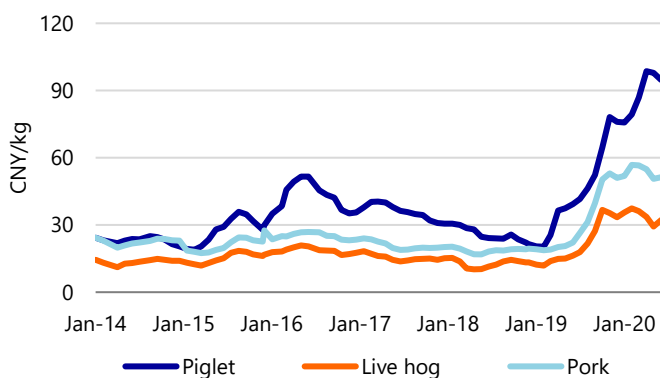
China

Live hog prices have rebounded strongly since June, rising from the low point of CNY 24/kg in May to CNY 38/kg in early July, up almost 50% in just one and a half months. Piglet prices softened in May but resumed their upward trend thereafter, reaching close to CNY 100/kg in early July (see Figure 6). The primary driver of the strong rebound is the low supply of hog for slaughter as a consequence of ASF outbreaks, which are not yet under control. We maintain our view that domestic pork production will drop by 15% to 20% YOY in 2020. While the supply issue has been partially solved by the decline in consumption in 1H, if consumption gradually recovers in 2H, we expect pressure to mount quickly. Therefore, prices are expected to stay at high levels throughout the year. Secondly, the price response can be attributed to the stricter inspections of imported pork by China Customs following the new Covid-19 cases in Beijing's wholesale market. This will slow imports in Q3 and consequently lift prices for locally produced hogs. Thirdly, heavy rains and flooding in recent weeks have delayed hog slaughter in some regions and raised risks of ASF (and other diseases) spreading further over the rest of the year.

The Beijing Xinfadi wholesale market incident has triggered market volatility. As coronavirus was found on the cutting board for imported salmon in June, a high alert was raised among consumers and governments about imported foods. China Customs now requires a declaration from exporters that products are not contaminated by coronavirus. Following this, China banned a number of plants where workers tested positive, and some exporters have voluntarily suspended exports to China. We expect more plants will likely be added to the ban list in the coming months.

China's pork imports (including muscle meat and variety meat) declined slightly in May compared with April – down 5% MOM, but still up 68% YOY. In the first five months of 2020, imports amounted to 2.2m metric tons, equaling the total imports in 2018.

Figure 6: China pork prices, Jan 2014-Jun 2020



Source: MARA, Boyar, Rabobank 2020

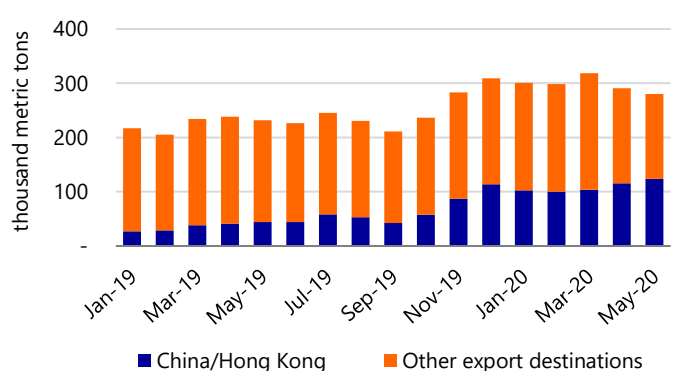
US

US live hog prices dropped to multi-year lows in early July (down 41% YOY), as ample inventories continue to weigh on the market. The latest inventory report confirmed the backlog in animals could take several months to clear, putting additional pressure on hog and pork prices. Realized market values for hogs varies by operation but, at current levels, are well below breakeven. Losses of this magnitude will force some producers, especially disease-challenged operations or those without strong packer relationships, to reduce their exposure or exit altogether. Rabobank expects additional cuts to the breeding herd (currently 6.3m sows) to better align supply and demand. Expected adjustments in breeding stock also reflect ongoing productivity improvements. Record pigs per litter in the latest report and continued improvement in pigs saved also support our outlook for a smaller sow base going forward.

Pork prices are also weaker (cutout down 5% YOY from year-ago levels), as the backup in market-ready hogs has contributed to record summer production, while a lack of labor has limited carcass conversion and packer price realization. Retail demand for pork is steady, while foodservice sales trends are mixed. Hams have been particularly challenged (down 26% YOY), as deboning remains an issue. Ribs and butts have seen better support from retail, while loins continue to struggle. We expect cutout values to gradually improve through Q3, with the continued reopening of foodservice and steady retail features, noting that relatively limited freezer inventories should help speed the recovery.

Despite ongoing disruption in global markets, exports remain robust – up 32% YTD versus a year ago. Nearly all of the increase was driven by China (see Figure 7). Shipments to China in May were up 347% and accounted for 41% of total exports. Conversely, exports to most other top destinations moved lower in May – sales to Mexico, Japan, and South Korea all fell by at least 20% in May. We expect sales to gradually improve as economies reopen and demand recovers. We also expect weak product prices to attract some import interest. Based on our current outlook, we expect full year exports to come in below our earlier expectations, but still up 18% versus year-ago levels.

Figure 7: US pork exports, 2017-2020



Source: USDA, Rabobank 2020

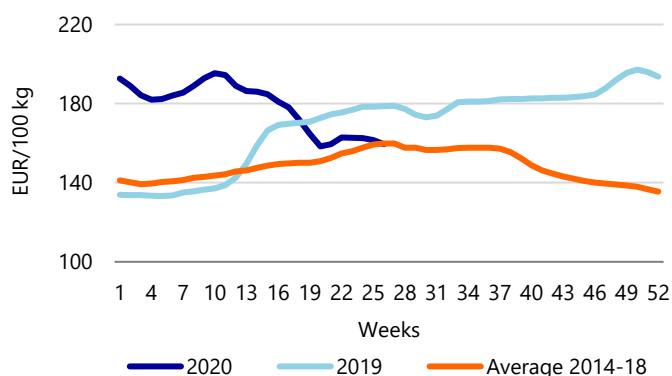
Europe

In Q2 2020, Covid-19 added many uncertainties to the European pork market, such as sudden, temporary plant closures and export suspensions, and we expect similar dynamics during the summer months. Pork production was down 1.3% YTD in the first four months in the EU-27 and UK. We anticipate some recovery in production in 2H 2020, resulting in an annual YOY decline of about 0.5% for the EU-27 and UK. Despite Covid-19-related disruptions, Spain (+4%), the Netherlands (+4%), Denmark (+4%) and the UK (+6%) all recorded growth between January and April 2020. Italy has, however, been heavily impacted by Covid-19, leading to a production decline of -21% YTD. In Poland, the decline (-10% YTD) can be attributed to both ASF and Covid-19.

EU-27 and UK pork exports were up by 14% YTD in Jan-Apr 2020. Exports to China increased by 16% in April MOM and 60% in Jan-Apr 2020, compared to the same period last year. Notwithstanding, exports have also been affected by Covid-19. We expect pork exports to be under pressure in the coming months. As China takes precautionary measures against Covid-19, exports from Dutch, German, Irish, UK, and Italian plants have been suspended. It is uncertain how quickly these plants will be able to resume exports and whether other plants will be suspended in the future. We believe, however, demand from China is generally strong and opportunities for export will return as soon as these issues are sorted out.

Due to the gradual demand recovery in the domestic market, the EU average carcass price stabilized during the last month and is currently 11% below 2019 levels (see Figure 8). Piglet prices have also softened, maintaining fattening margins. In Q3 2020, the recovery in prices might be slower than previously expected, as disruptions due to Covid-19 persist, pressuring prices. In the Netherlands, weekly carcass prices dipped by 12% since the week starting June 8. Both the reduced slaughter capacity following plant closures and the temporary suspension of exports to China – from plants representing 55% of Dutch production – contributed to the sharp fall in prices. German carcass prices also decreased but to a smaller extent, as disruptions in slaughter and export capacity were not as extensive as in the Netherlands.

Figure 8: EU weekly carcass price (Grade E), 2014-2020



Source: Eurostat, Rabobank 2020

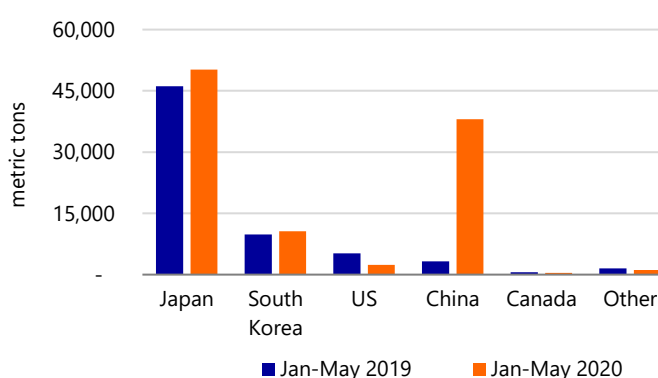
Mexico

Mexican hog and pork markets have rebounded, as the impact of coronavirus has diminished in recent weeks. While still more than 20% below year-ago levels, hog prices are up 36% from their mid-May lows (currently US\$ 56/lb). The slowdown in slaughter in response to labor-related challenges and weaker domestic pork demand has weighed on hog prices for the past few months. Pork prices are also lower but have risen more slowly (up 16% from their lows in May). Ongoing weakness reflects not only the slow recovery in consumer demand but added pressure from low-cost US imports.

Mexican pork production slowed in April and May, as coronavirus weakened demand and prices dropped. Even as growth slowed, production remains at record levels. After posting 6.5% growth in Q1 2020, the industry is expected to average 3.8% growth in Q2. Rabobank continues to anticipate a drop in 2H 2020 production to reflect weaker market conditions and the higher costs of production, in part tied to ongoing weakness in the Mexican peso.

Mexican pork imports slowed again in May (down 27% YOY), as weaker demand and a weaker Mexican peso limited interest. This follows a 5% decline in April, which reflected Covid-19-related disruption in demand and higher-cost pork from key suppliers in the US and Canada. We expect lower-cost pork supplies through the remainder of the year to fuel a rebound in import activity. Mexico's pork exports remain strong (up 54.7% YTD vs. year-ago levels) on extraordinary growth in volumes to China – up tenfold to 38,999 metric tons (see Figure 9). China is now Mexico's second largest export market at 37% of total volume, just behind Japan. Export markets remain a small outlet for Mexico's pork supply (estimated to be 7% of total), yet they continue to gain share. For the year, Rabobank projects a 20% increase in exports vs. year-ago levels.

Figure 9: Mexican pork exports, 2018-2020



Source: Secretaría de Economía, Rabobank 2020

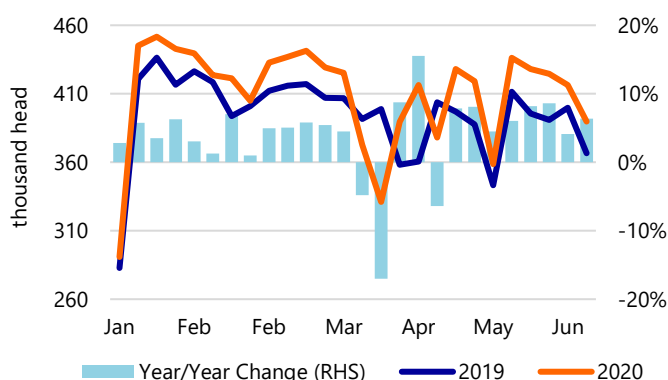
Canada

Canadian pork processors experienced some coronavirus-related disruption early in Q2, but harvest levels averaged 5.3% above year-ago levels since plants resumed normal production in early May (see Figure 10). The industry has largely caught up on the backlog of animals, yet regional imbalances still exist. While plants have resumed normal production, higher labor costs (due to absenteeism, social distancing measures, etc.) are likely to curb packer returns.

Exports of weaned pigs to the US fell 45,000 (or 4.4%) in Q2, reflecting both ongoing efforts to keep production in Canada, as well as coronavirus disruption in the US. Bulging inventories on US farms following pork plant closures in April and May left limited finishing space for new Canadian imports. The drop in feeder pig exports contributed to higher Canadian market hog inventories and increased slaughter. Even with the coronavirus disruption, larger hog supplies drove a 3.7% increase in slaughter in the quarter. Higher slaughter combined with heavier weights drove a 4.9% increase in pork production in the quarter. The surge in local supplies has put pressure not only on domestic hog prices (down 20% YOY), but has also limited interest in herd expansion. Without favorable contracts, most Canadian producers will post losses in the coming months. In light of market pressures, there are efforts underway to evaluate hog pricing mechanisms.

While the drop in Canadian hog and pork values has hurt producers, it continues to drive strong growth in exports. Total exports through May are up 15% in volume and 25% in value. Canada continues to send large volumes of pork to China, with total shipments up 36% in May vs. year-ago levels and contributing 44% of total exports. Year-to-date exports through May of 270,000 metric tons are already larger than shipments for the full year 2019. Despite ongoing trade tensions, we expect 2020 exports to all destinations to total nearly 1.5m metric tons, up 20% versus a year ago. Canadian pork exports to the US were also strong in May (up 36% YOY), as plant closures in the US left the market short of product. This follows several months of high single-digit declines.

Figure 10: Canadian hog slaughter, Jan-Jun 2020



Source: Statistics Canada, Rabobank 2020

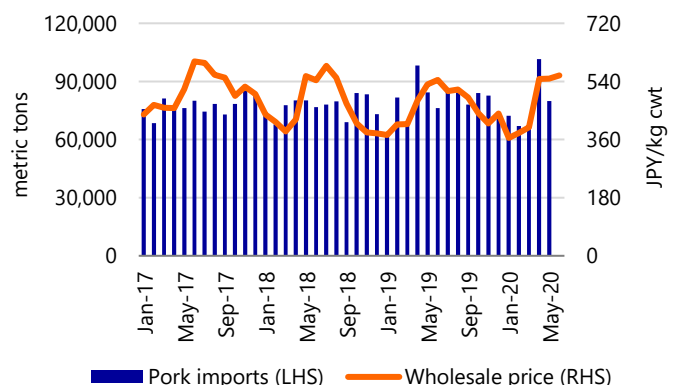
Japan

Japan's Q2 2020 hog slaughter is estimated to have reached 3.996m heads (+0.5% YOY), while Q3 2020 numbers (according to MAFF forecasts) are expected to decline by 1.8% YOY, to 3.838m heads – in line with seasonally lower demand. Average pork wholesale prices remained relatively strong in Q2 2020 at JPY 552/kg (+6% YOY), with June prices averaging at JPY 559/kg. The strong prices may give way in Q3, both on seasonally lower demand and the historically elevated stock/use ratio of 12.9%. The extent of this decline will depend on the availability of US imports; US exports could be down on packing plant suspensions due to Covid-19 infections.

Japan's pork imports in the first five months reached 388,326 metric tons, 2% below the same period in 2019 (see Figure 12). US and Canadian origins occupied 54% of total imports, with volumes rising by 7% YOY. Pork imports are expected to sequentially decline in Q3 2020, principally on seasonally lower demand.

While social distancing measures have progressively been lifted since May, household demand for frozen pork products is expected to remain steady. This is despite the economic impact of Covid-19, which could affect overall growth in demand. Foodservice demand has reportedly not yet returned to pre-pandemic levels, and some liquidation of built-up inventories may ensue at the wholesale level.

Figure 11: Japan pork imports vs. wholesale prices, 2017-2020



Source: ALIC, Rabobank 2020

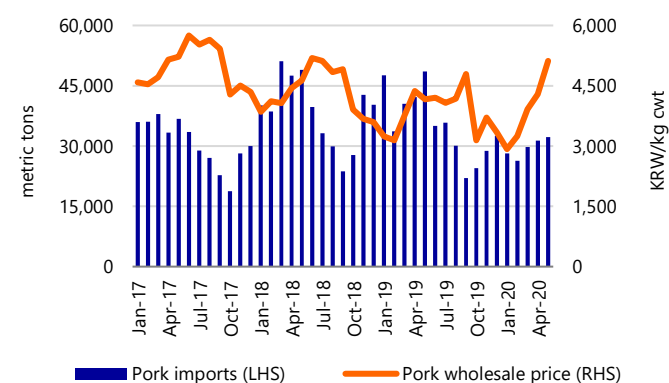
South Korea

South Korea's pork imports fell by 30% YOY in the first five months of the year, to 147,832 metric tons (see Figure 13). The swift containment of ASF between mid-September and mid-October 2019 and price improvements above break-even cost gave way to a recovery of pig slaughter numbers since November. As of the end of April 2020, pork inventories at meat processing plants were reported at 180,000 metric tons (+18% YOY). The reduced import volumes have affected US pork shipments – given its dominant 47% share of Korean import origination – while, in percentage terms, EU imports were also down 53%, to 11,052 metric tons.

The increased domestic supply, however, did not deter significant price escalation this year. Wholesale pork prices jumped from KRW 2,923/kg in January to KRW 5,115/kg in May. A seasonal increase in demand has driven this surge, reinforced by the lifting of social distancing measures and the reopening of schools in May.

In line with seasonally lower demand after June and expectations of an increased number of pigs on farm, pork prices are expected to decline in Q3 2020. Reduced purchasing power as a consequence of Covid-19 impacts is also expected to weigh on pork prices in the second half of the year. Hence, availability of exports from the US may not have a significant impact on domestic supply.

Figure 12: South Korean pork imports vs. wholesale price, 2017-2020



Source: KMTA, Rabobank 2020

Vietnam

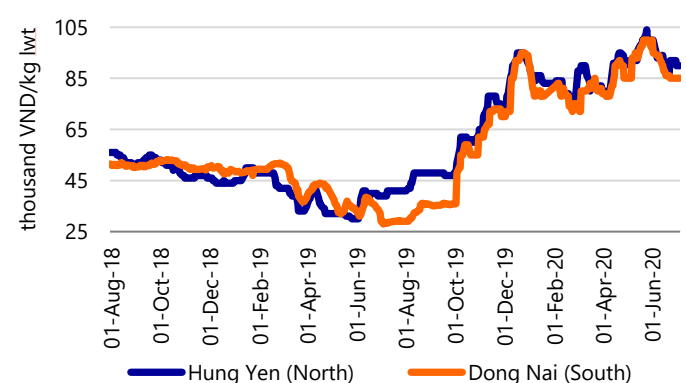
Losses from ASF outbreaks have increased since the April low of 1,182 pigs, to 5,856 pigs in June. For the first six months, cumulative losses reached 36,000 pigs. While outbreaks have mostly been contained, we continue to anticipate up to 100,000 pigs being lost in our base case this year (vis-à-vis 5.96m in 2019).

Vietnam started importing Thai hogs in June, although excluding sows. The number of hogs for slaughter has so far remained immaterial. The import target was reportedly for 1.9m hogs, roughly 10% of Thailand's output. Not only have Thai farmgate prices since increased, transportation costs, quarantine costs, and agent fees have also significantly reduced the price differential. While Vietnam hog prices have eased from recent highs, they remain firmly above VND 80,000/kg and are rising again (see Figure 14), reflecting the underlying supply shortage.

Continued increases in Thai farmgate prices runs the risk of export restrictions by Thailand. Vietnam's pork imports (as monitored via originating countries) expanded 47% YOY in Q1 2020 to close to 44,580 metric tons, of which 46% was of EU origin. We expect Vietnam's 2020 imports (live hogs for slaughter and pork) to increase 60% YOY in carcass-weight equivalent.

Data from the General Statistics Office recorded live hog output of 1.637m metric tons lwt (-9% YOY) in 1H 2020, with Q2 2020 production expanding by over 2% YOY. Consumption, on the other hand, has rebounded after quarantine measures were lifted at the beginning of May. We have recently revised our 2020 pork production forecast to 2.15m to 2.20m metric tons cwt, implying an 8% to 11% YOY decline. With more retained gilts, sow imports, and increased grandparent herd, we expect Vietnam's live hog output to recover more meaningfully from Q4 2020.

Figure 13: Vietnamese live hog prices, Aug 2018-Jun 2020



Source: Anova Feed, Rabobank 2020

Brazil

Brazilian pork exports increased in Q2, largely as a result of trade with China recovering from the Covid-19-related challenges in Q1 (see *Figure 14*). Total shipments in 1H were 37% higher in volume and 53% in revenue YOY. In the same period, exports to China were 150% higher, reaching a volume of 231,000 metric tons and representing 49% of total pork exports. In our view, this strong increase in Chinese purchases, despite the economic fragility due to Covid-19, is positive for a net exporting country like Brazil.

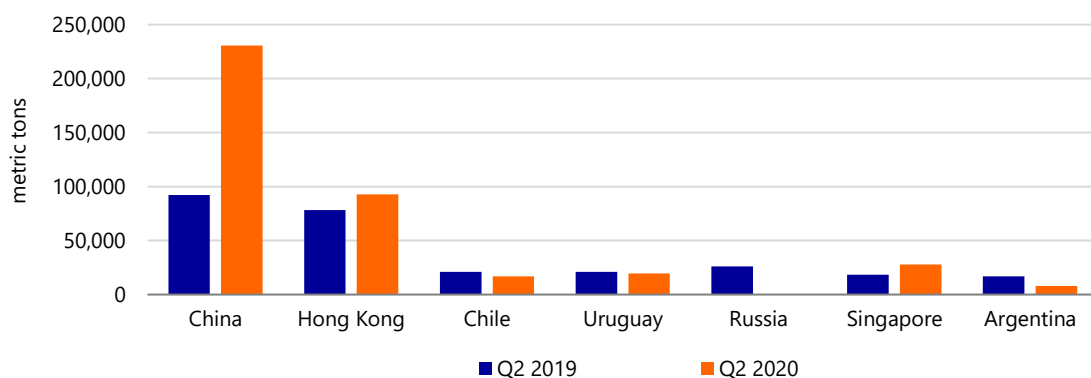
The suspension of several slaughterhouses from exporting to China in recent weeks has put the market on alert. Two pork plants have been embargoed, and there is the possibility of additional suspensions. The general outlook for China to reduce imports during Q3 is also weighing on the market, given the growth in exports to China in 1H 2020.

On the other hand, the domestic market continued to decline, reflecting the deteriorating economic outlook. With supply levels higher than domestic consumption, we see ongoing pressure to lower production. In Q1, pork production was 7.6% higher YOY and had increased by 0.6%, compared to Q4 2019.

Higher production also reduced pork prices in April by 23%, but from mid-May, supply and demand were more balanced, and prices started to appreciate. This is because production started to fall in Q2, and demand had a slight improvement, due to the easing of quarantine measures in some regions and also due to the distribution of emergency financial assistance (BRL 600/month) that the government is offering the population from April to August.

Feed prices remain the main concern for hog producers. This is because the harvest of the second crop has been affected in some regions. In addition, expectations of higher exports at the end of the year have reduced the domestic supply of the grain and increased prices in the future market. In June, feed prices were 29% higher YOY

Figure 14: Main destinations of Brazilian pork exports, Q2 2019 vs. Q2 2020



Source: Secex, Rabobank 2020

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