



FCC Ag Economics
**Trade Rankings
Report 2018**

Navigating Trade
Disruptions
and Volatility



Introduction

Trade tensions have defined agricultural markets in 2018. Taxes, both threatened and realized, underlie those tensions because, when applied to exports, they reduce bilateral trade flows between exporters and importers. Beyond curtailing trade, taxes also produce unforeseen price variations that are often sudden and widespread, indirectly impacting many non-targeted trading nations.

China-U.S. trade disruptions are a case in point. They hit many markets, but especially agricultural markets, hard in 2018. The U.S. price of soybeans dropped from US\$10.40 per bushel to US\$8.42 per bushel in a matter of 17 weeks. Chinese import tariffs diverted global trade flows of hogs, corn and other commodities, affecting their prices too, for all global traders.

That matters to a country like Canada. Our agricultural producers depend on the health of global markets to export large portions of our production. Although relatively small – in 2017, we were the 38th most populous country in the world – our efficient ag sectors produce more than enough to feed Canada and well beyond. For that reason, we are a powerhouse in the global agriculture and agri-food markets.

Canada has ranked as the world's fifth-largest exporter of agricultural commodities since 2011. The top five exporters accounted for 40% of ag exports in 2017. Between 2007 and 2014, Canada also ranked 12th or 13th in world exports of food products, a ranking that has since improved to 11th, with Canada jumping ahead of New Zealand and Malaysia.

A year like 2018, with its geopolitical diversions and disrupted trade flows, might challenge that status. To understand how volatility is likely to influence the Canadian agri-food system in 2018 and 2019, the FCC Ag Economics Trade Rankings Report 2018 looks at Canada's ag sectors' historical export performance on five different commodities across periods of differing volatility between January 1988 and April 2018. Our analysis of canola, wheat, pork, beef and soybean exports allow unique insights into the nature of volatility and its history in Canadian agricultural trade.

We found that as Canadian prices have jumped (up and down), Canadian exporters and their buyers in many of our most important export markets changed the way they bought and sold products. Some markets will purchase more in those months of volatile prices, as in the case of Hong Kong's imports of Canadian beef or Spain's imports of Canadian soybeans.

Overall though, volatility tends to suppress Canada's exports, as both Canadian exporters and foreign buyers hesitate to act in the moment, preferring to wait to see if the quickly moving prices move once again, and in the direction that's more to their favour.

That's in the short term. Over time, as volatility diminishes, Canadian prices revert to levels more in line with their averages and growth in Canadian exports flourishes. Each of the five commodities selected for this report has experienced growth over the 30-year period. Some have grown faster in the last five years than they've ever grown.

That's good news in a year that has been anything but stable.

Volatility and Canadian export performance

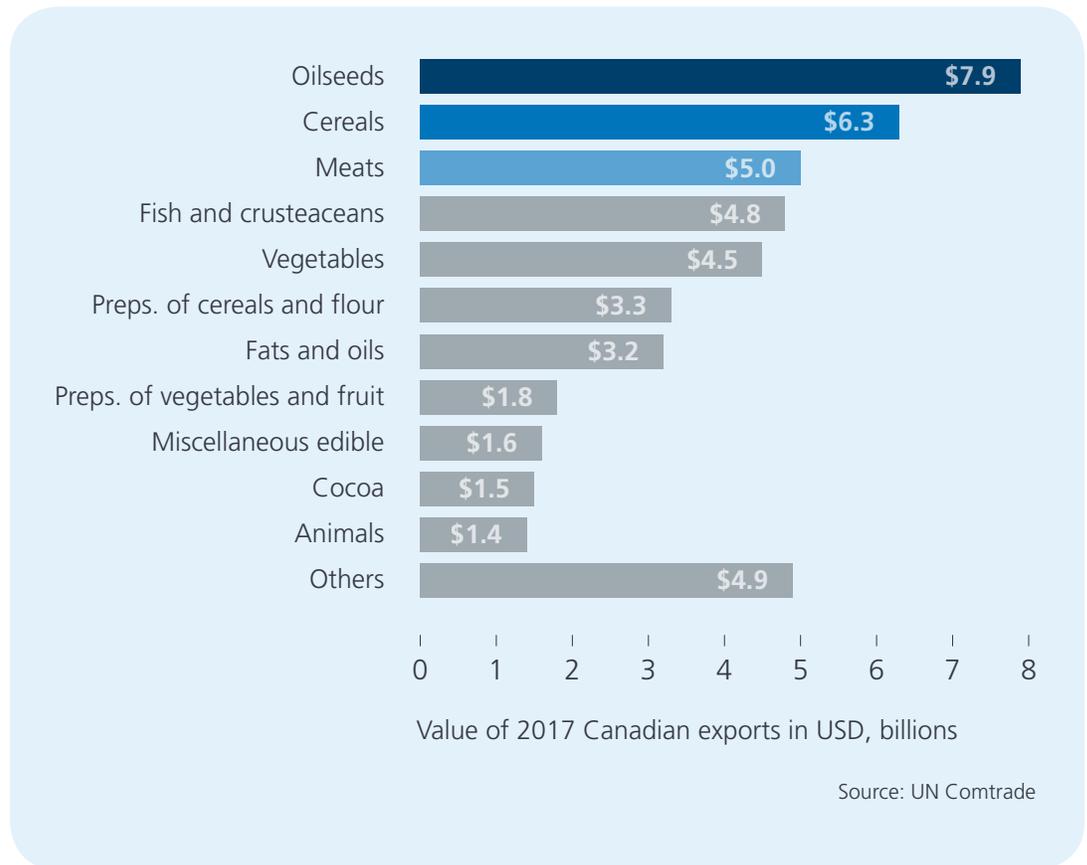
Escalating trade tensions and increasing tariffs between two giants disrupted global agricultural markets in 2018. China's tariff on U.S. soybeans in June affected U.S. producers directly, but it also hammered the price that many soybean producers received, including Canada's. Chinese and Mexican tariffs on U.S. pork exports tapered demand for the U.S. product, and weakened hog prices in North America. And then a bountiful 2018 harvest only served to compound those trade impacts on commodity prices.

World economic growth has remained robust despite the uncertainty. It expanded 3.8% in 2017, and the most recent forecast of the International Monetary Fund calls for a 3.7% expansion in world Gross Domestic Product in 2018. From within that expansion, the world's appetite for Canadian agricultural commodities and food continues to grow.

In 2017, Canadian exports of raw agricultural commodities and food products totalled US\$46.2 billion (B) (Figure 1). Oilseeds, cereals and meats represented 41% of that total, and each featured year-over-year export growth. Cereals grew 11.6%, oilseeds 9.4% and meats grew 6.6%. To understand how the price volatility we've experienced in 2018 may alter those trends, we chose to look at canola, wheat, pork, beef and soybeans; five commodities that rank highly in their overall importance to the success of Canada's agri-food supply chain.

Figure 1

Canada's oilseeds, cereals, and meats are a major part of Canadian agri-food's success



The major price swings for hogs and soybeans in 2018 may threaten their respective growth trends and those of canola and beef exports, which are closely tied to soybean and pork markets. Their success has far-reaching consequences: the entire agri-food chain accounted for roughly 6.8% of total GDP in 2017, with its exports, Canada's third-largest export category (behind "mineral fuels and oils" and "vehicles and parts"). The agri-food sector produced 11% of Canada's total exports, worth US\$420.6B in 2017.

Why volatility matters

Volatility produces uncertainty for buyers and sellers, and uncertainty can change behaviour. If volatility is dramatic enough to prompt hesitation (to buy or sell), export performance can be affected.

The following analysis¹ shows the impacts to Canadian export volumes of canola, wheat, pork, beef and soy assuming volatility climbs:

- Total Canadian exports of canola, wheat, beef and pork decline. Total soy exports are re-allocated to different markets.
- Export volumes to selected markets, taken individually, almost always fall – for reasons that likely vary.
- Canadian exports of all five commodities to the U.S. decline.
- Market responses are more uniform and muted for canola and wheat sales. Responses in soy, pork and beef exports tend to be larger and more varied across markets.

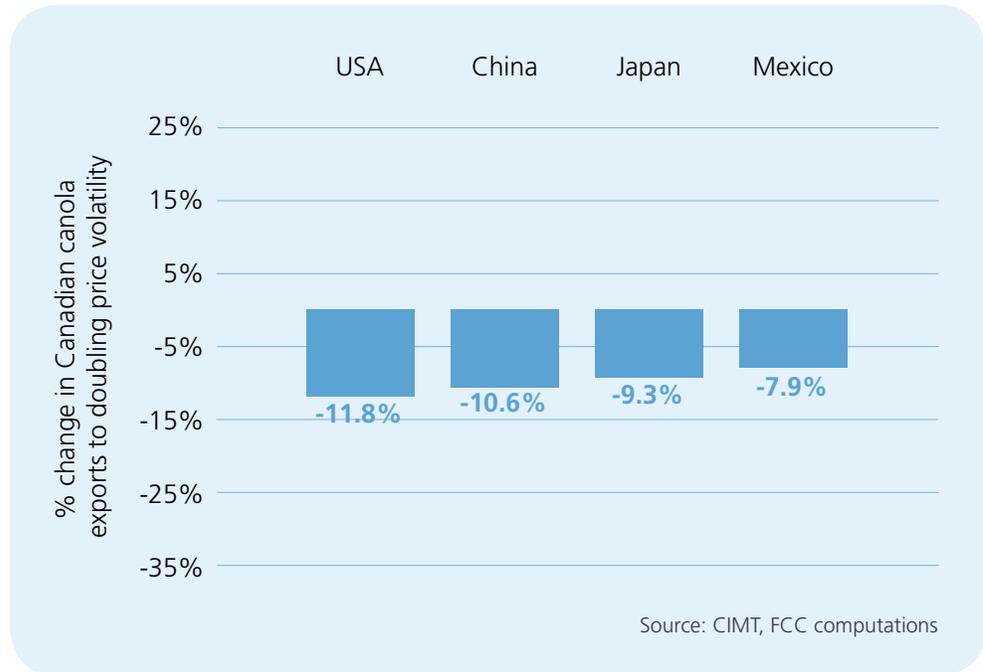
The following simulations are based on trends from a 30-year period. They refer to general patterns in the history of Canadian export performance only, and can't be used to assess performance in specific months or years. Doubling volatility is unlikely to occur during an actual month of trading.

Canola and wheat

Canada's overall canola exports decline in months when volatility increases. The impact is fairly uniform among key markets, with losses in exports ranging between 7.9% (Mexico) and 11.8% (the U.S.) when simulating a 100% increase in volatility.

Figure 2

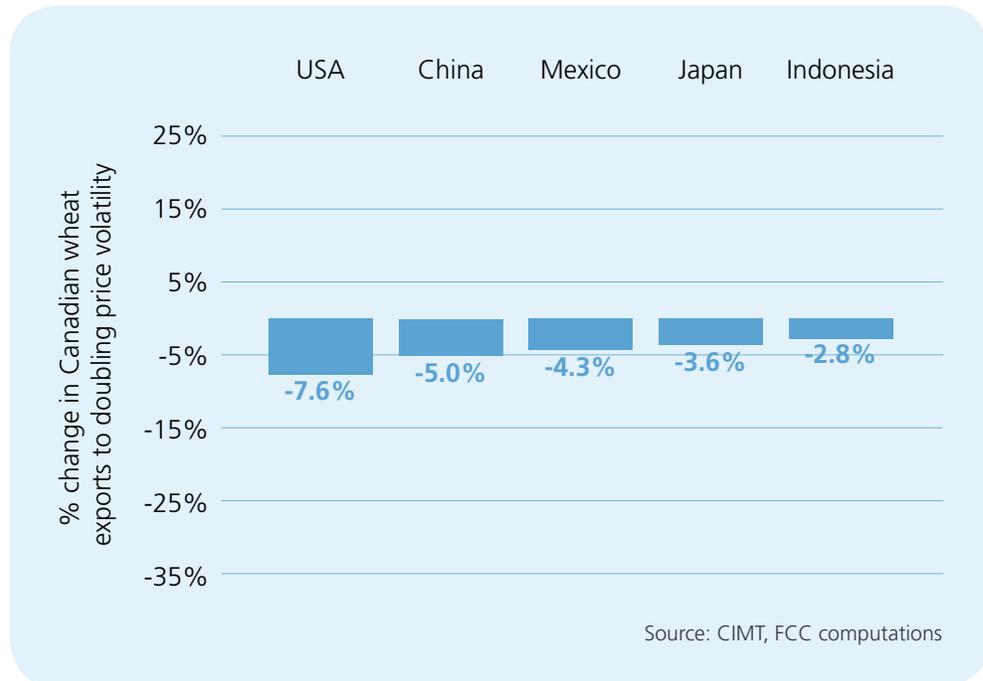
Canola export losses fall in a narrow range



Even when volatility doubles in the export prices of wheat, Canadian exports show, on average, a muted response of -2.8% to -7.6% (Figure 3). The losses to individual markets are strong enough though to produce a decline in overall Canadian exports of wheat with higher volatility.

Figure 3

Export price volatility has a muted impact on Canadian wheat exports



The drop in Canadian exports of wheat and canola to key markets look similar. Both show uniform and relatively muted drops, especially compared to those for pork, beef and soy.

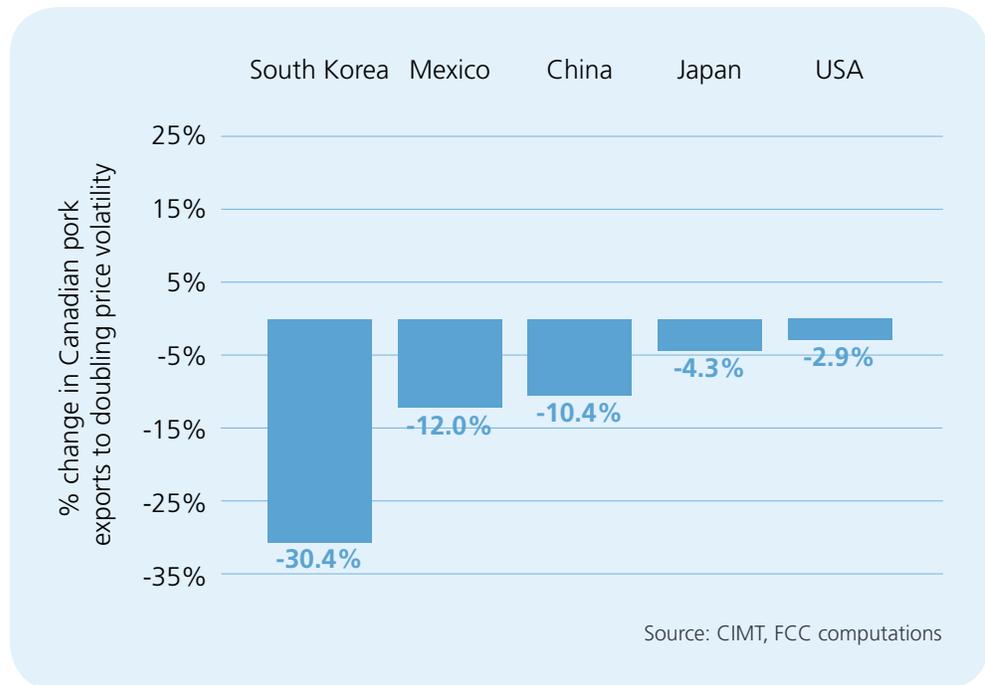
Pork, beef and soybeans

Exports of Canadian pork also fall when volatility climbs and, like canola and wheat, the drops to individual markets are large enough to produce a drop in total pork exports in those months. There's a noteworthy difference, though, in responses within individual key markets.

The range of responses among Canada's pork export markets is significantly larger than the range for either canola or wheat, from a small drop of 2.9% in our exports to the U.S., to a drop of almost one-third (30.4%) in exports to South Korea (Figure 4).

Figure 4

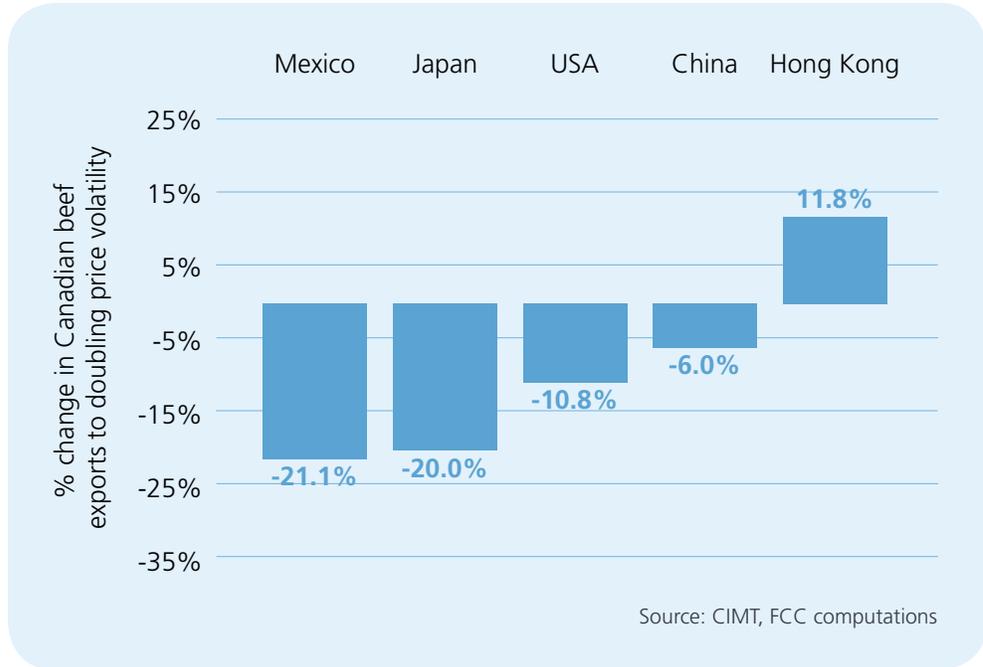
Canadian pork exporters see varied response to price volatility



Beef exports also show a greater range of responses across key importers. Doubling the export price volatility would lead to at least a 20% decline in Canadian beef exports to Mexico and Japan over a 12-month horizon (Figure 5).

Figure 5

Hong Kong reverses trend of falling beef exports



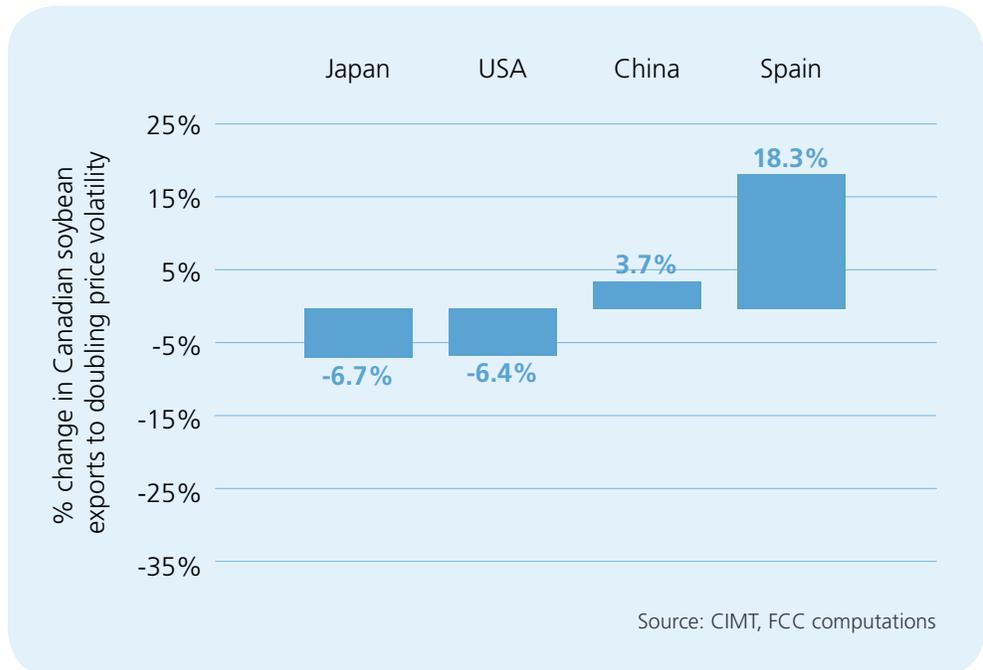
The largest importer of Canadian beef – the U.S. – doesn’t react as strongly when beef prices swing, with a drop of 10.8% in our exports there. We would also lose 6.0% of monthly exports to China, a relatively new importer of our beef, if volatility doubled.

But in periods when Canadian prices swing widely, beef exports to Hong Kong increase, and by a healthy 11.8%. Total Canadian beef exports still drop in these months, but the growth in exports to Hong Kong helps to mitigate that drop.

We see that varied response in Canadian soybean export performance too.

Figure 6

Higher Chinese, Spanish soybean imports as prices swing



Like beef, Canadian soy exports to most key markets generally suffer when faced with high price volatility, with one major outlier. Japan and the U.S. are likely to see a drop of about 6.5% in Canadian soybeans, while China would gain a marginal 3.7%.

Spain, however, would buy 18.3% more under the same conditions. Given the weight of Spain and China in Canada's overall soy exports (in 2017, the two accounted for 46% of those exports), their combined growth in imports during months of more volatile prices are enough to keep Canada's overall volume of soybean exports from falling. Instead, those total export volumes are re-allocated in sales across our export markets.

How volatility works

Buyers hesitate when they're uncertain of future price movements, postponing purchases in hopes prices will retreat (because in periods of great volatility, they rise and decline quickly). Or they can be motivated to buy more when prices start to jump around, in efforts to hedge against the pain of future price increases they see as likely.

At the same time, exporters may be able to take advantage of prices that may rarely be higher again in the near term, selling more than they would normally into select markets. Or, like buyers, they may postpone their trading, waiting for a month when prices improve, or at least stabilize.

We see that with five Canadian agri-food exports.

The lower volumes of exports of all five commodities to the U.S. (ranging from -2.9% to -10.8%) makes sense: they're the export-import decisions that can be postponed with the fewest likely pain points for both importer and exporter. Shorter distances and established trade relationships mean product can be contracted and/or delivered quickly after prices revert to more stable levels.

The greater range of responses to volatility in soy, beef and pork prices may suggest that conditions specific to importers' markets are driving the losses in Canadian exports. This would be especially the case for those with extreme responses (South Korea, Hong Kong, Spain). Whether Hong Kong's and Spain's increased imports are to hedge against future price increases, or perhaps because they can turn volatility to their advantage, individual importers' needs may shape more of our losses in export performance.

It may just be a simple matter of market share. In 2017, Canada grabbed 8% of the total share of pork markets, and about 3% of market share for both beef and soybeans. Our place in world canola and wheat markets is considerably larger. In 2017, Canada was the world's second-largest canola producer, only falling behind the European Union-28 (EU). We captured more of the global canola market (44.2%) than anyone else, with exports worth US\$5.05B last year. We were the world's sixth-largest wheat producer in 2017, capturing just over 13% of global exports. Wheat was our largest ag export (worth US\$5.1B) in 2017.

With that kind of weight in global markets, Canadian exporters may be making more decisions to postpone their exports, preferring to wait out the volatile prices. That could help to explain the relative uniformity and low levels in responses to volatile canola and wheat prices.

A ranking of volatility's likely impacts on Canadian ag in 2018

1. The disruption in soy markets trickled down to also impact canola prices in 2018. It is almost certain to have created a different export horizon for Canadian soy and canola producers this year.
2. China, Japan and the U.S. purchase over 80% of Canada's pork exports and, given their tendency to postpone importing Canadian pork during periods of volatility, may result in slower 2018 exports. However, the loss may be negligible: none of those three markets respond to higher volatility with big declines in their imports.
3. The U.S. is, by far, Canada's largest single-country destination for beef. To the extent that North American beef prices have shifted in response to pork market disruptions, U.S. importers may delay their purchases of Canadian beef until prices stabilize. Such delays are short-lived and don't impact longer-term growth in our beef sales to our largest customer. Asian and Middle East nations, taken together, accounted for just over US\$3B in our 2017 beef sales. While China and Japan may suspend their normal import levels as prices fluctuate, Hong Kong may pick up the slack.
4. Although key markets do tend to drop Canadian wheat exports during volatile months, the losses in those months aren't large even in response to a doubling of volatility. Further, wheat prices weren't as volatile as those of other commodities in 2018. There should be less impact, if any, on Canadian wheat exports than on others.

Expanding market access a key strategy

As the reference price of ag commodities changes in response to major supply-demand shocks like the 2018 tariffs, [Canadian prices shift](#).

Small increases or decreases in commodity prices happen all the time; larger fluctuations, or volatility, are less common. When our price jumps, buyers in our favoured export markets change their behaviour and, typically, buy less from Canadian producers. That tends to suppress Canadian export performance in the short run, but it can impact the sector over the long run too – for better or worse.

Because volatility produces buyer hesitation to import our products, it creates the possibility that foreign markets will find alternative sources that may become their preferred source, even after prices revert to normalized levels. Periods of volatility could also prompt buyers with little history of importing Canadian product to shift their traditional patterns and buy more from us. The Chinese tariff on U.S. soy is likely to shift trade flows this year as the U.S. looks to other markets – a move that could undermine other soy exporters' traditional patterns.

The examples of responses from South Korea, Hong Kong and Spain to volatile Canadian prices underscore the importance of seeking diverse markets for Canadian agribusiness. Our large markets – the U.S., China and Japan – will always be central to our success, but developing new markets can help diversify our trade performance when disruptions occur.

The current uncertainty in the global economic environment probably isn't over – developing these opportunities will help achieve that goal:

- If importers remove current hurdles, opportunities exist to develop European and North African wheat markets.
- Europe will need to import more canola seeds and oil to develop their biodiesel sectors.
- Germany, Italy, the U.K. and France are among the world's largest importers of beef, yet none are top export destinations of Canada – likely the result of long-standing non-tariff barriers. The Comprehensive Economic Trade Agreement (CETA) should improve Canada's market access. South Korean and Hong Kong markets are other promising avenues to explore.
- Although individual European markets require targeted approaches to developing pork trade, the EU overall represents a large import market that can expand for Canadian pork exporters under CETA.

Appendix A

Methodology

To assess the influence of volatility on Canadian ag export performance, we:

- Measured "export performance" as the volume of products exported.
- Defined "price volatility" as the 12-month standard deviation of the per-unit price of exports, using Canadian dollars. It measures the dispersion of the prices that exporters received over the preceding year.
- Computed the standard deviation of the per-unit price for each month between January 1988 and April 2018. To assess its potential impact on Canadian exports, we created the hypothetical scenario of doubling volatility for demonstration purposes only. That magnitude of a change in volatility would be extreme, happening only rarely.
- Included in the analysis, indicators of:
 - the prices received by Canadian exporters, measured as total value of exports divided by total quantity exported
 - the strength of demand in the importing country, proxied by monthly Consumer Price Index (CPI) values for each country
- Selected markets based on current or potential growth as importers of Canadian products. The U.S., Japan and China appear in all five volatility analyses because of their value to Canadian exporters; other destinations were drawn from either Canada's top 10 markets, or were one of the world's top 10 importers for each commodity in 2017.

Export categories are from the Harmonized System: HS02 (Meat and edible offal), HS10 (cereals), and HS12 (oilseeds).

Data source for 2017 Canadian and world commodity exports: [UN Comtrade](#).

Data source for 1988 – 2018 prices received by Canadian exporters: [Canadian International Merchandise Trade](#).

All UN Comtrade data were extracted in August 2018. CIMT data were extracted in July 2018.

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J.P. Gervais	@jppgervais
Martha Roberts	@MJaneRoberts
Leigh Anderson	@AndersonLeigh3
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