Revisiting the effects of the COVID-19 pandemic on Canada’s agricultural trade: The surprising case of an agricultural export boom

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Abstract
In contrast to April 2020 forecasts of the effects of the pandemic on Canada’s agricultural trade, we find 1 year later that the recession was deeper, that total trade fell by less than was widely expected, and agricultural trade did not fall but actually increased. This was a general pattern across countries, but Canada’s agricultural trade increased by at least 11%, more than the world aggregate and that of the U.S. This was mostly due to the success of crop exports, specifically in oilseeds, lentils, and cereals. Although some of the increase was due to rising commodity prices, for the most part trade volumes also increased substantially. Not only was Canada’s export boom not expected but it was also not closely related to the pandemic. It was due to commodity-specific circumstances, such as China’s rebuilding of its depleted hog herd, a short crop of lentils in India, and demand shifts to Canadian wheat, durum and barley. Increased Asian demand helped this export growth, but accounted for less than a third of it.

Résumé
Contrairement aux prévisions d’avril 2020 concernant les effets de la pandémie sur le commerce agricole du Canada, nous constatons un an plus tard que la récession a été plus profonde, que les échanges totaux ont moins diminué que ce qui était généralement prévu et que le commerce agricole n’a pas chuté, mais a plutôt augmenté. Ceci est une tendance générale pour tous les pays, mais le commerce agricole du Canada a augmenté d’au moins 11 pourcents, ce qui représente plus que la moyenne mondiale et la hausse des États-Unis. Cela a été principalement dû au succès des exportations de grains, en particulier les oléagineux, les lentilles et les céréales. Bien qu’une partie de l’augmentation soit due à la hausse des prix de ces denrées, les volumes des échanges ont, pour la plupart, aussi augmenté considérablement. Non seulement le boom des exportations du Canada n’était pas prévu, mais il n’était pas non plus étroitement lié à la pandémie. Cela est dû à des circonstances propres à chaque produit, telles que la reconstitution par la Chine de son troupeau décimé de porcs, une faible récolte de lentilles en Inde et des déplacements de la demande vers le blé, le blé dur et l’orge.
canadiens. L’augmentation de la demande asiatique a contribué à cette croissance des exportations, mais en a représenté moins du tiers.

1 | INTRODUCTION

This paper is a sequel to Barichello (2020) where I tried to anticipate the effects of the pandemic on Canada’s agricultural trade. It involved a preliminary assessment of the then-growing uncertainty of the pandemic through the lens of agricultural trade in general, and Canada’s in particular. One year later we are in a position to judge the accuracy of those predictions, and note what lessons we may learn. There are many such lessons. First is how to anticipate the economics of a worldwide pandemic on a scale unlike anything seen in the previous 100 years. Second is how best to forecast when we have significant uncertainty regarding most public health aspects of this pandemic and what government responses might be. Third, we had incomplete data from rapidly changing economic effects, but this could be partly offset by employing sound economic principles. Fourth, we observed more about the relationship between income and trade growth. Fifth, the 2020 data for agricultural trade remind us of the value of incorporating many commodity-specific circumstances when anticipating total agricultural trade, well beyond only income.

In fact, we will see that three commodity groups dominated Canada’s agricultural trade performance in 2020, and all appear to be due in large part to specific circumstances related to that commodity group, not due directly to the pandemic. Two examples are China building up its decimated hog herd, therefore increasing its demand for Canadian oilseeds and barley, and India reducing its lentil tariff. Our data reveal more about the year 2020 and Canada’s export commodities, rather than show evidence of changes clearly due to the pandemic. They also should be seen in light of trade volumes at the bilateral and commodity levels typically being quite volatile due to the usual agricultural production factors of weather, pests and diseases. These factors arise whether or not there is a pandemic.

I begin with what actually happened over 2020 in terms of GDP and trade. It is difficult to get data on the value of agricultural trade for the full 2020 year within three months of the previous year-end, especially for aggregate world trade in agricultural products. It is even more difficult by early 2021 to get volume data for world agricultural trade in 2020, except for Canada’s detailed Customs data, the third of our three data sources. What those data will show, however, is that for Canada’s dramatic changes in agricultural trade, the effects are not dominated by price changes. As in Barichello (2020), we rely upon recent online sources from the World Bank, International Monetary Fund (IMF), World Trade Organization (WTO), United National Conference on Trade and Development (UNCTAD), U.S. Department of Agriculture (USDA), and Statistics Canada.

1.1 | Extent of pandemic’s economic impact: GDP growth

Our starting point was to anticipate the impact of the pandemic on aggregate economic activity, as measured by real GDP growth rates. Our original (Barichello 2020) estimates of world economic growth for 2020, drawn from various sources, are shown in column 2 of Table 1, with data added for Canada’s largest trading partners, the U.S., E.U., China, and the

| Region/Country       | Predicted | Actual |
|----------------------|-----------|--------|
| World                | −3.0%     | −3.3%  |
| US                   | −5.9%     | −3.5%  |
| EU                   | −7.5%     | −6.6%  |
| China                | +1.2%     | +2.3%  |
| EMDE excl China      | −2.2%     | −5.0%  |
| Canada               | −6.2%     | −5.4%  |

Sources: World Bank. 2021. Global Economic Prospects, January 2021. Washington, DC: World Bank. Table 1.1 © World Bank. https://openknowledge.worldbank.org/handle/10986/34710 License: CC BY 3.0 IGO; OECD. (2021). OECD Economic Outlook, Interim Report March 2021, OECD Publishing, Paris. https://doi.org/10.1787/34bfd999-en; and IMF. 2021. World Economic Outlook, April 2021. Washington, DC: IMF.
category of Emerging Markets and Developing Economies (EMDE). Column 3 shows the actual growth rates, as estimated by the World Bank and the OECD in January-February, 2021.

Despite quite varied results by country, it is evident at the world level that the negative economic impact of the pandemic was underestimated. By April 2020, early lockdowns in many economies produced economic contractions that were being shown, increasingly by week, to be very severe. Forecasts at that time were hampered by lagging data on (a) how much economic activity was being depressed, (b) how extensively the COVID virus would spread, (c) what public health policies would be needed and adopted in each of the expected several waves of the virus, (d) what government policies would be enacted to combat the economic fallout of the pandemic, and (e) how much would businesses and individuals adapt to the public health restrictions to reduce their economic effect. In fact, the second quarter is now known to have been the deepest point of the pandemic contraction. Economic growth bounced back modestly in the third quarter and more substantially in the fourth. However, for almost all countries (China being a rare exception), GDP growth for 2020 is now estimated to have been negative.

A striking result is that U.S. GDP growth was much less negative than initially predicted by the IMF in April 2020. Despite second quarter U.S. GDP falling by 31%, the subsequent rebound and substantial fiscal stimulus resulted in “only” a 3.5% decline for the year. The relatively broadly-based fiscal transfers in the U.S. also resulted in an increase in US per capita disposable income even as GDP was declining in the second quarter. The anomalous situation of disposable income being above the path of GDP persisted to the first quarter of 2021 (Meyer 2021a). This will have implications for the change in trade flows during 2020 as well, particularly for Canada.

1.2 | Effect on trade: aggregate trade

Forecasts of aggregate trade flows in March-April 2020 grew increasingly pessimistic. A widely used source was the WTO, with a prediction as of April 8, 2020 for a significant decline in aggregate trade volume. To deal with the uncertainty at that time, they forecast a wide range of trade declines, from a 13% to a 32% fall. To provide some anchor for these predictions the 2008 Global Financial Crisis was used as a reference point, given its similarities to the pandemic in its global impact, its sudden occurrence, and the resulting significant income decline. World trade volume in 2008/09 fell by 12% to 15%. But by April 2020 it appeared likely that the income fall due to COVID would be larger. In Barichello (2020) I used a mid-point forecast of a 20% decline in world aggregate merchandise trade volume. It was also acknowledged that both income and trade declines would be greatest in the service sector, especially transport and hospitality, and on merchandise trade in sectors with more complex value chains, like electronics and automobile products.

In fact, world merchandise trade volume (goods and nonfactor services) did fall in 2020, but by considerably less than was forecast, despite world GDP growth falling more than was expected. Using IMF-reported data as of April 2021, export volume fell by 8.1% (International Monetary Fund (IMF) 2021). Breaking this down by country level of income, the export volume decline for advanced economies was 9.5%, and for EMDEs the decline was 5.7%. This global trade decline for 2020 was also much less than the decline in trade volume from the 2008 Financial recession. The full 2020 year decline was also much less than the global trade value decline in the first half of 2020 (9% compared to 15% for the first half of 2020 (UNCTAD 2021) due to the strong trade recovery in the fourth quarter.

The same pattern was observed for U.S. total trade value, which fell by 13% over the pandemic year. In contrast to the 2008/09 Global Financial Crisis when U.S. non-agricultural trade fell by 20%–30%, the pandemic decline in 2020 was only 15%.

Canada’s export performance was very similar. Aggregate merchandise exports declined in 2020 by 12.3% (Statistics Canada 2021a). But non-agricultural exports fell even more, by 15.2% (Statistics Canada 2021b). Like in the US, the decline was less than predicted in April 2020 (20%), and the decline in both the US and Canadian non-agricultural and total exports was greater than the decline that occurred at the global level. These similar aggregate export declines occurred despite the composition of trade being rather different between Canada and the U.S., and that 72% of Canada’s total exports in 2020 were destined for the US.

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1 Table 1.1
2 Trade for the US and Canada is measured by exports.
3 US total exports, 2020, source: [https://search.bea.gov/search?affiliate=u.s.bureauofeconomicanalysis&query=US+total+goods+exports+2020](https://search.bea.gov/search?affiliate=u.s.bureauofeconomicanalysis&query=US+total+goods+exports+2020). US agricultural exports, 2020, source: [https://www.ers.usda.gov/data-products/foreign-agricultural-trade-of-the-united-states-fatus/us-agricultural-trade-data-update/](https://www.ers.usda.gov/data-products/foreign-agricultural-trade-of-the-united-states-fatus/us-agricultural-trade-data-update/)
4 Adjustment made adding Harmonized System (HS) trade data from Canadian International Merchandise Trade website.
1.3 | Effect on agricultural trade

When we moved to disaggregate the pandemic trade effects to the food and agriculture sector, we expected that the decline in agricultural exports would be smaller than the decline in total exports. On the basis of the forecasted large decline in purchasing power, and with food items having generally lower income elasticities, notably in the rich countries, this suggested a modest decline in the demand for agricultural goods. We also observed at the outset of the pandemic that there were some supply side problems, such as with COVID outbreaks in beef and poultry processing plants, plus border closures making the supply of seasonal labor (into Canada at least) more difficult and costly. These supply chain difficulties, even if short-lived, would be expected to raise the retail price of such food items, further reducing demand and trade, especially in the short run for those commodities. These effects were seen as more likely for agricultural trade between Canada and other rich countries, which account for about half of all agricultural exports. For lower and middle-income countries, the income elasticity would be somewhat larger, but it was more uncertain how badly these countries would be hurt by COVID.

Bearing these factors in mind, we anticipated a decline in agricultural trade at a lower level than the mean estimate (22%) by the WTO for total trade volume, which we treated as the maximum decline for agricultural trade. For the lower bound of the decline, we used the trade decline at the lowest point of the Global Financial Crisis, when agricultural trade fell by 12%. Our point estimate was a decline of 15%, giving greater weight to trade with middle and higher income countries and their small income elasticities. Within the agricultural trade category, a smaller decline was expected for cereals and a larger decline for pulses and meat exports, in line with available income elasticity estimates.

Data on global agricultural trade for 2020 is not yet readily accessible. WTO data will only be available in the second quarter, but we have a Global Trade Update from the UN Conference on Trade and Development (UNCTAD) which provides partial data on recent changes in agricultural trade (UNCTAD 2021). The February 2021 Update reports 3% growth in worldwide trade value in the agri-food sector for 2020. This quite remarkable export performance was not predicted by any mainstream forecast in the first half of 2020. It resulted mostly from a rapid trade rebound in the fourth quarter, a 7% fourth quarter year over year increase for agri-food exports. Many sectors of the economy showed a sharp increase in exports in the fourth quarter but what turned the agri-food sector uniquely into overall export growth for the year was that it declined relatively little in the first two quarters and posted positive (3%) growth in quarter three.

These positive agricultural export growth results are corroborated by the country data we have for the US and Canada. As suggested above, US agricultural trade also rose during 2020. It increased from USD141 billion to 150 billion, or 6.3%. This increase contrasts with the decline during the financial crisis in 2008/9 in agricultural trade of 10%–15% and is more than double the UNCTAD global agri-food export growth of 3%.

Our trade data for Canada add much stronger and more detailed evidence for growth in agri-food exports for 2020, in both value and volume. In fact, Canada’s growth in this sector is strikingly large, above UNCTAD data for major agricultural exporter Australia, and almost double the growth of US agricultural export value, landing Canada in a special UNCTAD category of “Competitiveness Gainers”. This means countries so indicated gained more than 1% market share in agri-food exports, where Canada was joined with Mexico and “Other Developing Countries.” It is quite remarkable that for both Canada and the US, “agricultural trade has proved resilient in the face of a global economic contraction and certainly much stronger than non-agricultural [trade] and further from what was experienced during the ‘great recession’ of just over a decade ago.” (Meyer 2021b)

We use three separate sources for Canada’s agri-food export data, incorporating somewhat different methods and definitions to organize the raw data. First, we use the North American Product Classification System (NAPCS) that was developed jointly by the three NAFTA countries to allow comparisons of product statistics, using a classification system for industries (the North American Industry Classification System, NAICS). The NAPCS data has section C11 that covers farm, fishing and intermediate food products. This is a relatively narrow definition of agri-food exports by focusing on farm and intermediate food products but not much of what is normally included as food manufacturing. It shows the largest increase in agricultural exports in 2020 of our three measures, at 15.1% or $5,769 million (Statistics Canada 2021c).

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5 See slide 7.
6 https://www.ers.usda.gov/data-products/foreign-agricultural-trade-of-the-united-states-fatus/us-agricultural-trade-data-update/, using Excel spreadsheet for Total Value of U.S. agricultural trade and trade balance, monthly, and the WTO definition of “Agricultural Products.” Accessed 14.03.2021.
7 NAPCS data show 2020 exports of $43,968 million Canadian dollars, compared to 2019 exports of $38,199.
The second source of data is Statistics Canada’s NAICS website, Trade Data Online (Statistics Canada 2021). Under agri-food exports this NAICS data includes all forms of farm production and food manufacturing. Total exports in 2020 are $71,843 million, compared with exports in 2019 of $64,400 million, an increase in agri-food exports of 11.6% or $7,443 million. A decade-long perspective on the pattern of Canada’s agricultural exports (NAICS data in nominal values) is shown in Figure 1. At 11.6%, the growth observed in 2020 is the second highest annual percentage increase of the past decade after 2014’s 13% increase, although it is the largest increase in dollar terms ($7.4 billion vs. 6.4 billion) for the whole decade.

This data source reveals where the export growth is coming from by sector within agriculture and food, and the country destination, shown since 2011 in Table 2. The most striking growth rate for 2019–2020 arises in the crop production sector where exports grew by 24.5%. Within Canadian agri-food, crop exports is the second largest category with 2020 exports of $29 billion. This broad crop category is driving Canada’s remarkable agri-food export performance in 2020. It also has the lowest proportion of exports of any category going to the U.S. (23%), even though the US is the top country destination in export value. The second most important result is that the largest category of exports was the “Food manufacturing” sector, at $39 billion. However, it grew at only 4.9% over 2019, less than the average growth of agri-food exports in 2020 but also less than the 6.4% growth observed in food manufacturing exports between 2018 and 2019. In this category, 70%

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**Table 2** NAICS export value by four categories, 2011–2020, billion nominal CAD

| Category          | 2011  | 2012  | 2013  | 2014  | 2015  | 2016  | 2017  | 2018  | 2019  | 2020  | % change 2019–2020 | US% |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|-----|
| Crop Prdn         | 18.1  | 19.7  | 21.0  | 23.9  | 25.3  | 24.5  | 25.3  | 25.7  | 23.5  | 29.3  | +24.5             | 23  |
| Anim Prdn         | 1.3   | 1.5   | 1.8   | 2.6   | 2.3   | 1.9   | 1.7   | 1.5   | 1.8   | 1.6   | −9.7              | 94  |
| Food Mfg          | 22.5  | 23.6  | 24.3  | 26.9  | 30.1  | 32.3  | 33.9  | 35.2  | 37.5  | 39.3  | +4.9              | 70  |
| Beverages         | 0.9   | 1.0   | 1.1   | 1.0   | 1.1   | 1.1   | 1.2   | 1.4   | 1.4   | 1.4   | +2.0              | 89  |
| Total             | 42.9  | 46.0  | 48.3  | 54.6  | 59.1  | 60.2  | 62.3  | 63.9  | 64.4  | 71.8  | +11.6             | 52  |

*Note: US% = percentage of export value destined for US, 2020 data. Source: Statistics Canada, Trade Data Online (NAICS product codes) (Statistics Canada 2021).*

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8 NAICS codes 111, 112, and related “support activities,” code 115.
9 NAICS code 311.
10 As is discussed below, this is mostly an increase in volume. Even where prices also increased (e.g., lentils), the volume growth was very high.
11 The other country destinations in the top ten for crop exports from Canada are, in order, China, Japan, Bangladesh, Mexico, United Arab Emirates, Italy, Indonesia, France, and South Korea.
of exports went to the U.S. This is a general pattern in the data, that the larger the share of agri-food exports destined for the U.S., the lower the export growth, below +5%, if not actually negative. The third noteworthy result is that all major animal exports, excluding meat exports under the category of Food Manufacturing, experienced negative growth. This primarily includes live animals (beef and hogs, −9% and −13%, respectively). Note this category’s annual variability (in line 2 in Table 2).

Our third source of data is the Canada International Merchandise Trade (CIMT) site (Statistics Canada 2021d). It offers detailed customs data by Harmonized System (HS) number, covering 24 agriculture chapters in value and volume terms. From this source, total 2020 agricultural and food exports are slightly higher than in Table 2, $73.481 billion, an increase of 11% from 2019. The actual data can be found here (Statistics Canada 2021e). A summary by four chapter groupings is presented in Table 3 below, and a more detailed table for all chapters with more than $1 billion in exports is found in the Appendix (Table 3A). These data allow us to examine further the sources of Canada’s export increase in crops.

Those increases are found in three categories of crops where exports had double-digit growth: cereals, oilseeds, and the diverse category of vegetables which for exports substantially means pulses (see Table 3A). Within cereals, each of wheat, durum wheat, barley and oat exports increased in value and volume terms at rates between 14% and 32%. The cereal category as a whole increased by 17% in value (16% volume) and accounted for an additional $1.5 billion in exports. Except for oats, the growth in trade occurred mostly outside the US. In wheat it was due to China and Peru, in durum wheat it was due to Italy and Morocco, in barley it was due to China and Japan, and for oats it was due to Chile, U.S. and Mexico.

Oilseeds exports were almost as large as cereals, $10.1 billion, but growth from 2019 to 2020 was more than double that of cereals. The rate of increase was 37%, adding $2.7 billion to the country's export revenue. Looking only at canola seed (excluding its oil and meal), the increase in exports was 47% (43% in volume). It should be noted this increase in oilseed exports is not just a rising price; volume increased almost as much, and these results hold when soybeans are added to canola. The increase in canola exports may seem surprising, given the trade tensions with China, but oilseeds imports into China from both the US and Canada increased dramatically in the second half of 2020 due in large part to the rapid rebuilding of China’s hog herd and the need for feed, including oilseed meal (see below, and Meyer, 2021a). This likely also contributed to the 18% increase in Canada’s barley exports to China.

The most dramatic rate of export growth occurred in the pulses category, lentils in particular. From 2019 to 2020, lentil export value increased by 85% (in volume by 47%), or by $1.02 billion. Chickpea exports were less than 4% of lentils, and they declined in export value in 2020. Exports for the remainder of the vegetable chapter (i.e., excluding lentils and chickpeas) also grew at a relatively high rate, 14%, contributing $0.589 billion.

These six-digit HS trade data allow us to add several other points. First, on the animal and meat chapters (1-5), export values fell by 1.5% in 2020 (Table 3). However, this fall masks a decline in live animal exports (−8%12), a strong increase in meats (12%13), and a large fall (−15%14) in fish exports (Table 3A). Meat exports might have been even higher if there were no supply disruptions in Canada’s meat processing plants that arose due to a high rate of COVID infections, three deaths among those workers, and public health-mandated closures for a period of weeks. Second, aside from meats, chapters 16 to 24 are aggregated into a “prepared foods” category, and overall exports across this category rose by only 6%. This category

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12 This 8 percent decline is mostly due to prices (a 2 percent increase in number of animals exported but a 10 percent fall in their value).
13 The increase in meat export value arises from similar increases in volume and value, with slightly lower prices.
14 This decline arises from falling volume on average (−5%) but with prices falling twice as fast.
would be somewhat similar (although only half the export value) to the Food manufacturing sector in the NAICS data noted above. That category showed a 5% increase in exports, much the same as this prepared food category.

### 1.4 Discussion of results

To interpret the unexpected growth in Canada’s aggregate agricultural exports, we combine the disaggregated results by commodity groups with changes that occurred in these export markets. This leads us to seven points. The first is that the increase in export values could be reflecting mostly commodity price movements rather than changes in the quantities exported; commodity prices did increase across a number of crops in the second half of the 2020, especially since September. However, we have noted that for the large categories of Canada’s export growth, trade volume increased by almost as much as trade value. For oilseeds, prices did rise, and the lentil price rose sharply. But in each of those cases, trade volume growth was in the range of 30–45%, striking indeed. Durum prices rose but volume growth was also substantial (17%).

Second, the rapid growth in oilseed trade is closely related to the rapid and substantial increase in oilseed imports by China for livestock feed. This is largely due to China rebuilding its hog herd significantly since late 2019 after the severe effect of African swine fever that forced the culling of half or more of the national herd. The large increase in Chinese soybean (and corn) imports has caused a tightening of corn, soybean and, to a lesser extent, wheat markets, all of which have likely contributed to Canada’s crop export growth.

Third, the dramatic growth in lentil exports is related to the trade policies and production situation of Canada’s largest lentil customer, India, as well as increased demand from Turkey and the Middle East. Due in part to a shortfall in India’s lentil crop in 2020, it lowered the tariff on lentil imports from 30% to 10% from early June to the end of December (Pratt, 2020). The result has been added lentil exports of $360 million to India alone. Even though the lower tariff is likely temporary, it contributed the largest single country increase to the 2020 boom in lentil exports.

Fourth, the striking growth in cereal, oilseed and pulse exports is largely driven by sales to Asia. This is also pointed out by UNCTAD’s Global Trade Update (op.cit) where they note that East Asia has been leading the recovery in global trade. For Canada’s farm exports this should include South Asia as well.

Fifth, the strong increase in crop exports was facilitated over the 2020 year by the fact these were storable commodities and stocks were initially high. Over the course of the pandemic year, stocks levels fell for each of the largest crops (canola, lentils, soybeans, wheat, barley and durum, in order of the percentage decline in stocks), except for a small increase in durum stocks. Compared to the previous 5-year average, the stock level at the end of 2020 was on average 5% lower. This short run “financing” of 2020 exports by lowering stocks suggests that in 2021 it will be difficult to sustain the 2020 level of export growth.

Sixth, in those categories of agri-food exports where Canada was selling mostly into the US, export performance was quite similar to what was predicted a year ago, namely that there was some decline in those exports. That there was any growth despite the pandemic may be related to the strong US GDP growth rate response in the second half of 2020, and the stimulus payments enacted by the US government to counter the negative pandemic income effects.

Finally, the relationship between income and trade during this pandemic is striking. Following the Financial Crisis of 2008, the ratio of trade growth to GDP growth was 6.3 (Barichello, 2020) which guided the WTO April 2020 forecast of total world trade volume for 2020. Our experience for this pandemic year, using data from sections 2 and 3 above, is quite different, even though we use trade value data. The ratio is lower than 6 for all three of our observations, global, US, and Canada, as shown in Table 4. This ratio has fluctuated historically from period to period, but aggregate goods trade in the 2020 pandemic year was notably more resilient to the negative GDP shock than in the Financial Crisis of 2008, especially for Canada.
Little more than a year after the onset of the COVID-19 pandemic, we can see more clearly its economic effects. Compared to our anticipated effects on Canada’s agricultural trade in April 2020, we find now the scale of its negative effect on world economic growth was underestimated by half. On the basis of the IMF’s forecast of a 3% decline in growth and our experience with the 2008/9 Financial Crisis, we used the WTO forecast of 13%–32% for the decline in world trade. Agricultural trade was expected to experience a more modest decline, in the range of 12%–20%, which we applied in a general fashion to Canada. Within this range, we also predicted a smaller decline for cereal exports and a larger decline for meats, fish, and other higher protein foods, in line with well-known income elasticities.

These forecasts are always made “holding all else equal” because anyone familiar with commodity markets, especially food markets, are well aware of those markets’ variability due to many factors that we cannot predict. These, include weather, pests and diseases, changing government public health and economic policies, changing levels of stocks, periodic shifts in consumer demand, and the resulting changes in relative prices. One could say that forecasting aggregate trade for the year ahead when facing a pandemic about which we then knew little (except a fall in GDP) was a fool’s errand.

Our review of the data for the past tumultuous year underlines all these uncertainties and forecast difficulties. Many of our forecasts were off the mark. The pandemic fostered a more severe recession than was forecasted, but this result varied considerably by country. World trade, however fell by only 9.6%, well below the forecasted range of 13%–32%, and non-agricultural trade for the US fell by only 15%. These numbers, a 3.4% fall in global GDP and 9.6% decline in global trade, suggest a “trade multiplier” of 2.8, which reveals much less of an impact than occurred in the 2008/9 Financial Crisis when it was as high as 6.

Global agricultural trade appears to have actually grown for the calendar year at roughly 3%, well above (possibly 15 percentage points above) anyone’s prediction. This was true as well for U.S. agricultural trade, which grew by 6%, but even more so for Canada where its agricultural trade grew by a remarkable 11%–15%, depending on how widely or narrowly you define agricultural trade. The resilience of the world agricultural economy in generating this positive trade result while experiencing a serious global recession and some short-term pandemic-induced supply chain disruptions is as impressive as it is underappreciated.

Canada’s agricultural export boom was not predicted but nor was it closely related to the pandemic. It was due to commodity market-specific effects in the small number of commodities where Canada was already a very large exporter. This includes the large increase in demand for oilseeds in China as it rebuilt its swine herd, and moved away from the previous tariff war with the US on soybeans. It was also the increase in demand for Canadian pulses when India had a short crop and lowered the tariff facing Canadian exporters from 30% to 10%. And it was due to ongoing strength in the demand for Canadian wheat, durum, and barley in a world market where US farmers have been shifting over the past two decades away from these grains toward increased-productivity corn and soybeans.

An important part of this increased demand for Canadian crop exports arose in Asia, raising the counterfactual question of what would have happened if those increased crop-specific Asian demands did not occur. If we excluded growth in export sales to Asia, Canada would have lost $734 million in cereals exports, $1,067 million in oilseed exports, and $402 million in lentils exports, a total of $2.2 billion. This ignores any exports to Asia among non-lentil items in the vegetable category (HS Chapter 7) and the manufactured foods category. When considered beside a total increase in agricultural exports of $7.2 billion, it is evident that increased Asian demand was important, but accounted for only about 40% of this total increase. In other words, in these crop categories, Canada’s exports were well enough diversified that the loss of Asian demand growth would still have left Canada with $5 billion of increased agricultural exports, or 7.6% growth above 2019.

The effects on other commodities conformed more closely, at least in aggregate categories, to our predictions of modest negative growth. In the food manufacturing sector, which sells mostly to the US, the relatively slow positive growth may reflect the positive influence of the rise in consumer disposable income due to the very large fiscal stimulus provided by the US government during the year.

A final conclusion concerns the risks to agricultural trade arising from changes in government trade policies. In the April 2020 paper, we noted the tendency of various governments to ban or restrict exports of food products to protect their own consumers, despite the negative effects on its foreign buyers. As well documented as this was at the time of the 2008–2009 food price crisis, and despite some governments stopping issuing export certificates or warning of export restrictions, this never really occurred beyond a few isolated cases in March and April of 2020. Fortunately, the export restrictions about which we worried did not really transpire. This is not to say that the pandemic had no negative effects...
on food security, because it surely did, especially in poorer countries, but they were not due to food export bans. However, there was a policy risk we did not point out, the risk that governments would make the pandemic worse with inappropriate public health and economic policy responses to the pandemic. Those clearly had an effect in some countries by prolonging and deepening its costs, but those are outside our mandate in this paper, even if they possibly affected food demand and trade.

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Table 3A  Canadian agricultural exports, by HS chapter. Million $

| HS Chap | 2019  | 2020  | % incr | $ incr |
|---------|-------|-------|--------|--------|
| 1       | Live animals | 1,956 | 1,803  | −7.8   | −153   |
| 2       | Meats      | 7,453 | 8,339  | 11.9   | 886    |
| 3       | Fish       | 6,781 | 5,783  | −14.7  | −998   |
| 7       | Vegetables | 5,515 | 7,095  | 28.6   | 1,580  |
| Within 7| Lentils    | 1,199 | 2,214  | 84.7   | 1,015  |
| 10      | Cereals    | 8,898 | 10,407 | 17.0   | 1,509  |
| 11      | Milling prods | 1,203 | 1,265  | 5.2    | 62     |
| 12      | Oilseeds   | 7,379 | 10,108 | 37.0   | 2,729  |
| 15      | Fats (An, Pl) | 4,223 | 4,561  | 8.0    | 338    |
| 16      | Meat, fish prep | 1,168 | 1,148  | −1.7   | −20    |
| 17      | Sugar and prep | 1,217 | 1,248  | 2.5    | 31     |
| 18      | Cocoa preps | 2,139 | 2,268  | 6.0    | 129    |
| 19      | Cereal Preps | 5,371 | 5,568  | 3.7    | 197    |
| 20      | PrepFrt/veg | 2,499 | 2,595  | 3.8    | 96     |
| 21      | Misc Fd preps | 2,398 | 2,628  | 9.6    | 230    |
| 22      | Beverage   | 1,545 | 1,739  | 12.6   | 194    |
| 23      | Residues, etc. | 3,188 | 3,576  | 12.2   | 388    |
| Total   | 66,258     | 73,481| 10.9   | 7,223  |

Source: Statistics Canada. [https://www5.statcan.gc.ca/cimt-cicm/section-section?lang=eng&dataTransformation=0&refYr=2020&refMonth=12&freq=12&countryId=999&usaState=0&provId=1&retrieve=Retrieve](https://www5.statcan.gc.ca/cimt-cicm/section-section?lang=eng&dataTransformation=0&refYr=2020&refMonth=12&freq=12&countryId=999&usaState=0&provId=1&retrieve=Retrieve)